

Oral Presentations

01

LIP CANCER IN THE AUTONOMOUS REGION OF MADRID: RELATIONSHIP BETWEEN HISTOLOGY, SEX, AGE AND LOCATION

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Squamous cell carcinoma (SCC) is the most frequent neoplasm in the buccal cavity, while basal cell carcinoma (BCC), is one of the most prevalent types of skin cancer. **Objective:** To assess interactions between location, age, sex and histology. **Materials and methods:** The variables considered were: age, sex, histological location (mucous, vermillion), anatomic location (upper, lower, commissure) and tumour histology (SCC, BCC and others). This is based on data taken from the 'Sistema de Intercambio de Datos de Cáncer de la Comunidad Autónoma de Madrid' (Madrid Regional Cancer Registry) in a study carried out between 1990 and 2001. Analysis was made with SPSS 11.0. **Results:** There were a total of 495 patients; 85.5% were males and the average age was 66.5 years old. The proportion of male patients remained almost constant with age, but 70.8% of females were over 65 years old ($P < 0.05$). The SCC was the most frequent neoplasm (93.3%); most of them were males. There was a 2.2% of BCC. The most frequent locations were the lower lip and vermillion ($P < 0.001$). It should be noted that the mucous location was the most frequent one among people under 65. Among women, most of the BCC cases were located in the upper lip and in the vermillion ($P < 0.001$). SCC was found to be located in the lower lip ($P < 0.001$) and in the vermillion. **Conclusion:** The SCC and the BCC seem to have different patterns, although it would be better to have a larger sample of BCC.

02

LIP CANCER IN THE AUTONOMOUS REGION OF MADRID: FACTORS RELATED TO SURVIVAL

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Lip cancer is easy to diagnose and treat, but there are patients with rapid evolution, with recurrences, metastasis and even death. **Objective:** To analyze the influence of some factors on the lip cancer survival in the autonomous region of Madrid. **Material and method:** Survival of 495 patients is analysed using the Kaplan–Meier method and the SPSS 11.0 program. The following variables are considered: tumour spreading, anatomic and histological location, delay in treatment, sex, age, and treatment. The data are taken from the 'Sistema de Intercambio de Datos de Cáncer de la CAM' (Madrid Regional Cancer Registry). **Results:** The average survival age in 495 patients was 175.2 months. Five years cumulative survival was 87.22%. The mucous location (98.5%) ($P < 0.05$) survives more than vermillion (85.2%) and commissure (80%). No differences were found between the last two. Being under or over 65 years old is also relevant (92.6 and 82.1%) ($P < 0.001$). Extended dissemination had a one and a half year survival (only two patients), as against 67.2% in the regional cases and 89.7% in the local ones ($P < 0.001$). Surgery and radiotherapy did not show

significant differences between them (90% and 83.34%). However, it was found that there were differences between surgery and surgery–radiotherapy combination (68.04%) ($P < 0.05$). A delay in the treatment of more than 4 months appeared to reduce survival to 67.67%. Upper or lower lip location and sex did not affect survival. **Conclusions:** The forecast of this tumour depends on factors, such early treatment, location and type of treatment.

03

DESCRIPTIVE EPIDEMIOLOGY OF TONGUE CANCER IN THE COMMUNITY OF MADRID

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Objective: To describe tongue cancer in the Community of Madrid. **Material and methods:** Retrospective study of 456 patients diagnosed with tongue cancer from 1991 to 2002, provided by the Central Registry of Tumours of the Community of Madrid. The variables studied are: gender, age, staging, site, multiple primary tumour, histology and treatments. **Results:** A total of 347 males and 109 females with a mean age of 60.6 years (range 15–94). It appears earlier in males under 64 years than in females of the same age ($P < 0.05$). The most frequent localizations are border (30.9%) and base of the tongue (30%). A 50.9% of the tumours are localized and 49.2% spread. The diagnosis in the base of the tongue is performed in more advanced stages than in the rest of sites. The diagnosis in females is done in earlier stages, being later in males. Unique tumours predominate over multiple tumours, which only represent a 3.7%. Histologically, squamous cell carcinoma constitutes a 95.2% of the sample. A 60.7% of the patients received a unique treatment, being the most common the resection. **Conclusions:** Tongue cancer in patients under 64 years appears earlier in males than in females. In females the diagnosis is made in less advanced stages than in males. The diagnosis in base of the tongue is performed in more advanced stages than in the rest of the sites. The tumour is more aggressive in patients under 64 years.

04

SURVIVAL OF TONGUE CANCER IN THE COMMUNITY OF MADRID

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Objective: To analyse the survival of tongue cancer in the Community of Madrid. **Material and methods:** A survival analysis of 456 patients has been performed. Survival related after 5 years is analysed globally as well as by factors, treatments and multiple primary tumour, according to the Kaplan–Meier method. Data are provided by the Central Registry of Tumours of the Community of Madrid. **Results:** Mean global survival was 5.3 years. Accumulated survival was 51.05%. Females show higher survival (72.14%) than males (44.4%), being these differences statistically significant ($P < 0.05$).

The subgroup aged 25–34 years presents a survival significantly superior than the rest of subgroups (100%). The site of the tumour is also related to survival: ventral tongue (74.48%) and lateral borders (62.96%) show a high survival in relation to other sites as base of the tongue (37.83%). Survival was significantly higher in those patients who received a unique treatment (55.99%) in comparison with multiple treatments (40.09%). **Conclusions:** It could be reasonable to think that from the different analysed variables, gender presents an influence in survival (higher survival in females), as well as age, curiously only in the subgroup aged 25–34 years, site (less survival in base of the tongue), extension (less survival when spread) and type of treatment.

05

PROGNOSTIC FACTORS IN ORAL CANCER SURVEILLANCE: EPIDEMIOLOGICAL AND RISK FACTORS

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Objectives: In year 2000 we published a case–control study about oral cancer risk factors in Madrid, Spain. We have followed the case group in order to know prognostic factors in surveillance. They have been considered: sex, diagnostic age, tumour extension, death cause and treatment. Kaplan–Meier analysis for every factor have been performed. **Results:** None of the epidemiological factors showed statistical significance except extension in diagnostic. We have found that treatment is a confounding factor that becomes a non-independent variable but a dependent variable of extension in diagnostic. Age is not a prognostic factor although it was found a risk factor in the previous case–control study. We have found that heavy tobacco and alcohol consumption together is a bad prognostic factor for oral cancer. Surveillance of these high-risk patients is much worse than those with light or no consumption of tobacco and social consumption of alcohol. **Conclusions:** A case group of oral cancer patients was followed for 10 years and now we know the risk and prognostic factors. Regional extension is a prognostic factor for less surveillance than local extension in our 10-year follow-up cohort. Combination of heavy tobacco and alcohol consumption is a prognostic factor of less surveillance than tobacco or alcohol consumption alone in our 10-year follow-up cohort. Genetic studies will provide us very useful prognostic factors for oral cancer, but still now we cannot use them in most of the world in diary practice.

06

CANCER OF THE ORAL CAVITY: SURVIVAL ANALYSIS OF 101 PATIENTS IN MADRID (SPAIN)

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Objective: The objective of this study is to determine factors that influenced the survival of patients suffering from cancer of the oral cavity. **Methods:** It is a retrospective study with 101 cases of oral cavity cancer, treated with resection of the primary and cervical neck dissection. The study was conducted in two phases. First, survival curves were compared with several variables grouped by categories. The study was conducted by the association among the survival curves and diffusing global or and tendency log-rank tests. And

secondly, when statistical significance was found, pair-comparisons were carried out. The survival analysis was performed by means of the Kaplan–Meier method. Possible confounding factors were investigated using the Cox proportional hazards model. **Results:** The mean 5-year survival rate for the whole series was 72.5%. In our study only tumour diameter, clinical T, clinical N, clinical stage and nodes are associated with survival. Multivariate analysis did include only one variable. **Conclusion:** Clinical factors known as established risk factors have little influence as prognostic factors. Pathological factors are significantly related to survival of patients in this sample. There is a little difference in survival rates in favour of cervical dissection of ‘no’ cases, which would support elective neck dissection.

07

PREVALENCE OF ORAL SQUAMOUS CELL CARCINOMA IN AMRITDHARI SIKHS; AN ETHNIC RELIGIOUS SECT THAT ABSTAINS FROM ALCOHOL AND TOBACCO

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Background: Evidence suggests that there is a marked inter- and intra-country variation in both the incidence and mortality from oral cancer. These variations among ethnic groups have been attributed to social and cultural practices as well as socio-economic differences. In South-East Asian countries, the use of quids made of typical products like betel and areca, either alone or with tobacco have been associated with higher prevalence of oral cancers in different populations.

Objectives: This study is based on the particular characteristics of Amritdhari (Baptised) Sikh Community from Amritsar region of Punjab in India. These baptized Sikhs are free from the traditional risk factors of oral squamous cell carcinoma (OSCC) like tobacco (smoking and smokeless), alcohol, and any other intoxicants. A cross-sectional study on the prevalence of OSCC among these Sikhs has been conducted. **Methods:** Clinical examinations of a representative randomly selected patients during routine dental check-up in the Department of Oral Medicine, Sri Guru Ram Das Institute of Dental Sciences & Research, Amritsar, India between March 2001 and March 2004. **Results:** Of the 1827 patients examined only four patients (0.0021%) were diagnosed with OSCC. Of the four patients, there were three males and one female. Three of four patients were above 60 years of age. All the four patients were of low socio-economic status and showed significant delay in access to a specialist care centre.

Conclusion: In comparison with other National and International studies there is low incidence of OSCC in Amritdhari Sikhs. The rarity of squamous cell carcinoma is related to the communal religious way of life of Amritdhari Sikhs, which forbids the use of alcohol and tobacco.

08

HISTOPATHOLOGICAL CHANGES RELATED TO INVERSE SMOKING AND ITS HIGH RISK OF POTENTIAL MALIGN TRANSFORMATION IN PATIENTS FROM SUCRE, COLOMBIA

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A descriptive transversal study was performed with the objective of determining the prevalence of histopathological lesions on inverse smokers in Cayo de Palma, San Francisco and Hato Nuevo, towns from the Department of Sucre, Colombia. Thirty-four biopsies were

taken from 25 patients that showed clinically representative lesions of mucosal changes. A 96% of the patients were women, with an average age of 63 years and with over 10 years of inverse smoking. The most representative histopathological findings are the following: eight carcinomas, from which four of them were squamous cell carcinoma, three of them located in palate and one in alveolar ridge. Four were verrucous carcinoma, two were found in tongue, one on hard palate and one on cheek. Twelve hyperkeratosis, eight on hard palate, three on tongue and one on lip. Eleven acanthosis from which nine were found on hard palate, one on lip and one on mouth's floor. Nine atypias on palate, two on tongue and one on lip. Eleven dysplasias, five of them were slight, from which four were found on palate and one on cheek. Five moderate dysplasias, three on the palate, two on tongue and one on lip. Six hyperorthokeratosis on palate, two on tongue and one on lip. Four hyperplasias on palate and one on tongue. Three orthokeratosis, two on palate and one on mouth's floor. Two hard palate mucocoeles. Two metaplasias on palate, one parakeratosis on palate, one melanosis on cheek, one nevus on tongue and one focal papillomatosis on tongue.

09

CLINICAL MANAGEMENT OF 228 CASES OF ORAL CANCER

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Clinical Behavior of Oral Squamous Cell Carcinoma in the Maxillofacial Surgery and Estomatology Unit of the Hospital Universitario San Vicente de Paul, Medellín from January of 1990 to December of 1996 abstract. Oral squamous cell carcinoma is a relatively frequent pathology in the estomatologic consult. Because of that, a retrospective study was performed, in the HUSVP between 1990 and 1996 in order to observe the clinical behaviour of such disease in our environment. A total of 228 cases were found, for a 32 cases for year average. The most affected age group was that of people older than 60 years, mainly of the male sex (57.9). The most referenced oral mucosal site was the tongue with a 30%, followed by the mouth's floor with 20.7% and the palate with 17.5%. Concerning the habits related with oral cancer, there were found the tobacco use in a 66% and alcohol in a 29.8% of the cases. A premalign lesion previous to the cancer development was found in 55 cases, where leukoplakias were the most common. The cancer stages more often observed were the IV and III with 55.1 and 19.8%, respectively. Radiotherapy with 46% and surgery with 39% were the most implemented treatments. In our environment, cancer is detected in very advanced stages, which decreases the probability of performing treatments in order to heal the disease and affects negatively the quality of life of patients, consequently the need of improving promotion and prevention campaigns is created, which do not exist actually, looking for an improved control on the early diagnosis of oral cancer.

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PREVALENCE OF SALIVARY GLAND TUMOURS IN THE CENTRO MEDICO 'NACIONAL 20 DE NOVIEMBRE' FROM 1994 TO 2004

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Objective: To know the prevalence of salivary gland tumors found in a social security hospital (Centro Médico Nacional '20 de Noviembre' ISSSTE) from the 1994 to 2004. **Methods:** Archives files review of the

surgical pathology department looking for the salivary gland tumors, a complete review of the clinical report and slides were made.

Results: From 82 919 files reviewed, 229 (0.28%) cases of salivary gland tumors were found, 80 were eliminated due to being from the same patient, remaining a total of 149 (0.18%) cases. Females 82 (55%) and males 67 (45%). The range of age was 7–96 years old; 32 (21.4%) cases were in the 8th decade of life. Parotid 95 (63.75%) and submandibular gland 31 (20.8%). Thirteen (13.42%) in the minor salivary glands and the palate the most affected seven (6%). According to the WHO classification, 65 (43.61%) were benign tumors, 61 (40.96%) malignant tumors, lymphomas 10 (6.7), metastatic or secondary tumors 9 (6%), non-classified 2 (1.35%), and no epithelial tumors 2 (1.35%). The more frequently is the pleomorphic adenoma 51 (34.22%) and the most frequent malignant tumor is the adenoid cystic carcinoma 16 (10.75%). All lymphomas are non-Hodgkin's type.

Conclusion: It is important for the training of the oral pathology specialist to know the prevalence and the principal types of salivary gland tumors, in a population in Mexico City to compare the literature and be prepared for an initial diagnosis in respect of the patient and quality of life.

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SALIVARY GLAND TUMORS IN CANCER REGISTRY OF MADRID, SPAIN: EPIDEMIOLOGIC AND HISTOLOGIC DESCRIPTION

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Objectives: It has been found 154 neoplasms of major salivary glands in Madrid Cancer Registry (ICD 9^a:142.0–142.9). These tumors are very different in histology and differ substantially from cancers of oral mucosa. We describe epidemiological factors as: age, sex and histological factors. **Results:** Parotid gland is the most frequently affected gland with 70% of cases ($n = 107$). Sublingual gland has no cases, while 25 cases are in submaxilar gland. They have been found 26 different histologies. A 46% of cases are women and 54% men. Tumoral extension at diagnostic show: 60% local extension, 33% regional, and 7% disseminate. **Conclusions:** Neoplasms of major salivary glands show significant epidemiological differences from oral mucosa ones. It should be note that these tumors are quite important in women, with 46% of cases and no cases have been found in sublingual glands.

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DELAY IN THE DIAGNOSIS OF GINGIVAL SQUAMOUS CELL CARCINOMAS

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Objective: To investigate the diagnostic delay of squamous cell carcinoma (SCC) of the gingiva versus other oral locations. **Material and methods:** Retrospective data on diagnostic delay of oral cancers were obtained from the clinical records of 91 patients (locations investigated were: 38 on the tongue, 22 on the floor of the mouth, 13 on hard palate and retromolar area, 4 on buccal mucosa, 2 on soft

palate and 12 on gingiva). The variables considered were grouped under the heading of 'tumour factors' (Ki-67), and 'patient and professional factors'. **Results:** Gingival cancer is significantly less frequent among smokers or alcohol consumers ($P = 0.034$). Gingival cancer is diagnosed at a more advanced stage ($P = 0.044$), than other oral SCC. Patients with gingival cancer are significantly older than other oral cancer patients (0.005). No significant differences in terms of diagnostic delay could be identified for the clinical variables between SCC of the gingivae and other oral SCC. **Conclusions:** When diagnosed, gingival SCC are at a more advanced stage, and affect elder patients than other oral SCC. Delay in the diagnosis of gingival squamous cell carcinomas.

13

INNOVATIVE BIOLOGICAL AND PHYSICAL INVESTIGATIONS ON THE ROLE OF HUMAN PAPILLOMA VIRUS AND EXOGENOUS NANO FOREIGN BODIES IN THE ORIGIN OF AMELOBLASTOMA

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Objective: Ameloblastoma is a benign odontogenic lesion of the maxillofacial region showing locally invasive behaviour, high recurrence and no ascertained aetiopathologic factors. Therefore, this study aimed at evaluating the presence and role of human papilloma virus (HPV) in ameloblastoma and also investigating the presence of inorganic, non-biodegradable micro- and nano-sized particles of exogenous metals as possible aetiopathologic agents in its development. **Methods:** Sections cut from the paraffin blocks containing the specimens of 18 patients affected by ameloblastoma and operated between 1991 and 2003 underwent polymerase chain reaction (PCR) and nested PCR to detect HPV presence using respectively L1 consensus primers and E6/E7 primers. Sections from the same specimens were observed through an environmental scanning electron microscope (ESEM) to identify micro- and nano-sized particles and their composition. **Results:** No evidence of HPV presence was shown by conventional PCR, while nested-PCR analysis showed a weak positive band in two cases only. The search for both low- and high-risk HPV types was negative. The ESEM results, instead, showed that all the cases examined contained micro- and nano-metallic debris differing in size and composition. **Conclusion:** This study reveals no aetiopathogenetic role of HPV in ameloblastoma while the findings highlight a possible relationship between this obscure tumour and the presence of particulate metallic debris, generally considered biocompatible. However no conclusions can be drawn about the aetiologic role of such particles, but routine dental practice is suggested to be one of the possible sources for the presence of the debris.

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CENTRAL GIANT CELL GRANULOMA ASSOCIATED WITH CENTRAL OSSIFYING FIBROMA OF THE JAWS: A CLINICO-PATHOLOGIC STUDY

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Objective: To describe the clinical and histopathologic characteristics of patients with central giant cell granuloma (CGCG) associated

with central ossifying fibroma (COF), and to compare them with features of isolated CGCG and COF. **Materials and methods:** The study included 23 cases of CGCG, 25 COF and four combined cases, with detailed clinical and radiographic information. On H&E stained slides detailed histomorphometric analysis was performed for features such as vascularity, cellularity and stromal characteristics. The presence of multinucleated giant cells and their distribution were recorded. **Results:** There was a wide age range (12–84 years), with a mean of 33 years in all three groups. The M:F ratio was 11:12 in CGCG, 4:21 in COF and 0:4 in the combined lesions. The lesions were more prevalent in the mandible in all three groups. In CGCG, lesions showed predominately ovoid mononuclear cells, scattered giant cells with <20 nuclei per cell, and bone or osteoid formation in 33% of cases. COF predominately showed a moderately vascular hypercellular stroma, with lamellar bone or cementoid. Occasional giant cells were present in 40% of COF. In the combined lesions, histopathologic features were not distinctive, but clinical and radiographic data were more consistent with COF. It can be concluded that the CGCG component is probably secondarily associated with COF.

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IMMUNOHISTOCHEMICAL EXPRESSION OF GLUCOCORTICOID RECEPTOR, CALCITONIN RECEPTOR, CD-68 AND HLA-DR IN CENTRAL GIANT CELL GRANULOMA

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Aim: To investigate the immunohistochemical expression of glucocorticoid receptor (GCR), calcitonin receptor (CTR), CD-68 and HLA-DR in a large series of central giant cell granuloma (CGCG). **Material and methods:** The study included 41 cases of CGCG, 18 males, 23 females, with a mean age of 38.6 years. Percentage of positive mononuclear cells (MC) and giant cells (GC) was calculated for GCR and CD-68 and percentage of positive cells combined with staining intensity was calculated for CTR. The extent of HLA-DR expression was evaluated on a 6-point scale. Statistical analysis was performed by Spearman's correlation test. **Results:** All cases were GCR positive. MC and GC demonstrated strong and extensive staining (more than 50% of cells) in 78 and 63% of cases, respectively. MC and/or GC were found to be CTR positive in approximately 56% cases, demonstrating a wide range of staining scores. About 66% of the MC that demonstrated strong and extensive GCR staining was also found to be CTR positive. Only about 39% of the GC that demonstrated strong and extensive GCR staining was also found to be CTR positive. No statistical significant correlations were found between GCR and CTR staining results. CD-68 staining was positive only in GC and it was found that in about 80% of cases GC were positive in 50% of the cells and more. HLA-DR staining was positive only in MC and it was found in 88% of cases. High staining scores (>2) were found in about 56% of the cases. There were no statistical significant correlations between CD-68 and HLA-DR staining scores. **Conclusion:** It appears that CGCG is a heterogeneous group of lesions rather than one entity, where almost each lesion demonstrated a different profile of staining scores. The need for extensive mutilating and disabling surgery for aggressive, large and expanding CGCG can be minimized or avoided by using therapeutic agents, such as calcitonin or steroids. The suggested panel of staining can serve as an evidence-based, reliable and selective tool to determine the most adequate therapeutic strategy in each individual case of CGCG. **Acknowledgement:** Study was supported by the Ed and Herb Stein Chair in Oral Pathology, Tel Aviv University.

16 GENE EXPRESSION PROFILING OF ODONTOGENIC KERATOCYST

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Objective: The aim of the present study was to better define the molecular characteristics of sporadic odontogenic keratocyst (OCK). **Methods:** RNA was extracted from ten fresh-frozen OCK specimens and 20 foetal tooth germs at the cap/bell stage and subjected to cDNA array and image analysis (Clontech Laboratories Inc.). Results were complemented by quantitative real-time RT-PCR. **Results:** A total of 106 genes were found to be dysregulated in OCK compared with the developing tooth. Cytokeratin 6B (*KRT6B*) was the most overexpressed gene (average of approximately 10-fold) followed by junction plakoglobin (*JUP*), cadherin 5 (*CDH5*), interleukin-12 beta subunit precursor (*IL12B*), DNA-damage- inducible transcript 3 (*DDIT3*) and epidermal growth factor receptor type 3 (*ERBB3*). Glioma-associated oncogene homologue (*GLI1*), known to be involved in the *SHH/PTCH* pathway downstream was also overexpressed as detected by QPCR. CD40 receptor-associated factor 1 (*TRAF*) and *NOTCH2* were the most highly underexpressed genes (average of 0.3-fold). **Conclusions:** Several overexpressed genes in OCK were located on chromosomes 12q and 5q and several underexpressed genes on chromosome 17q, suggesting that these areas may contain aberrations at the DNA level.

17 Ki67 & p53 EXPRESSION CORRELATION IN ODONTOGENIC CYSTS

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Introduction: Although the odontogenic cysts usually present a uniform and recognizable histopathological appearance and a good clinical prognosis, a small risk of neoplastic transformation is accepted and is supported by several case reports, but has not been subject to a systematic study. The biological mechanisms of such a transformation is unknown, moreover there are no diagnostic tools to differentiate between the simple odontogenic cyst and the odontogenic cyst, which has potential behavior for transformation into more aggressive lesions before the surgeons decide the treatment; neither for early detection of this phenomena. **Objective:** To answer the question when and where such a transformation might happen. **Material and methods:** Fifty-eight odontogenic cysts were used in this study: 10 odontogenic keratocysts, 22 dentigerous cysts, and 26 radicular cysts. All samples were stained for both ki67 and P53. All the patients were called back to for follow up. They had a questioner to fill in and a clinical and radiographical test for the cyst region. **Results and conclusion:** The results showed that there is *statistically significant correlation* between ki67 & p53 expression. More over the follow up of the patient showed that high positive samples are accompanied by either a recurrence and or a neoplastic transformation.

18 EXPRESSION OF p53 AND Ki67 IN GLANDULAR ODONTOGENIC CYST MUCOEPIDERMOID CARCINOMA AND RADICULAR CYST

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Glandular odontogenic cyst (GOC) is a relatively rare lesion of the jaws, with a potentially aggressive behavior and a high recurrence rate. Microscopically, GOC may resemble central mucoepidermoid carcinoma (MEPCa), or odontogenic cyst with mucous metaplasia (OdC). Correctly differentiating between these lesions has significant clinical implications in terms of treatment planning and follow-up required. **Objectives:** To compare the expression of p53 and Ki67 in GOC, MEPCa and OdC. **Materials and methods:** The study included 11 cases of GOC, 9 MEPCa and 18 OdC. Immunohistochemistry for p53 (DO7, Dako, 1:100), and Ki67 (Mib-1, Dako, 1:100) was performed, 10 HPF fields in each slide screened, and the labeling index calculated. **Results:** The labeling index for p53 was 6–10 times higher in GOC (3.2%) and MEPCa (4.9%) than in OdC (0.5%) ($P = 0.02$). Differences in p53 between GOC and MEP were not significant. Ki67 labelling index was lower in MEPCa than in both GOC and OdC, however, statistical significance was not reached. **Conclusions:** The expression of p53 can be used as an aid in differentiating GOC from OdC. This has clinical significance, since GOC is a potentially aggressive lesion, which requires a different treatment approach and longer follow-up periods.

19 TGFB SIGNALING DURING PALATE DEVELOPMENT: ROLE OF EPITHELIAL-MESENCHYMAL TRANSFORMATION

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Cleft palate is the most common congenital craniofacial deformities affecting one in 900 births. Formation of the medial edge epithelial (MEE) seam by fusing the palatal shelves is a crucial step of palate development. The opposing shelves adhere to each other by desmosomes in this epithelial seam, which then disappears by epithelial mesenchymal transformation (EMT). Cleft palate has a multifactorial etiology and often results from failure of adherence of apposing individual palatal shelves and/or EMT of the MEE. EMT is the fundamental process for the removal of epithelial seam to reach palatal confluence. Here, we discuss involvement of TGFb isoforms, transcription factors, kinases, oncogenes and tumor suppressor genes in palatogenesis. It is TGFb3 that regulates MEE transformation to mesenchyme to bring about palatal confluence. Its absence results in cleft palate. Understanding of TGFb family signaling is thus essential for development of therapeutic strategies. Because TGFb 3 and its downstream target, LEF1 play the major role in epithelial transformation, it is important to identify signaling pathways used for palatal EMT. Here, we demonstrate the mechanisms of palatal seam disappearance in response to TGFb3 signaling, including the role, if any, of apoptosis and its role in successful MEE adherence and seam formation. We also show the evidence that TGFb3 uses Smad signaling during palatal EMT and activates LEF1 transcription factor via Smad2 rather than b-Catenin. The signaling of the pathways used TGFb3 for palatal EMT have received much attention in the recent years and is the main subject of this study. Undoubtedly, knowledge of these pathways will lead to better understanding of cleft palate and more effective treatment.

20 EXPRESSION OF S-100 PROTEIN, HMB45, NEURON SPECIFIC ENOLASE AND p53 IN INTRAORAL PRIMARY MELANOMAS

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Intraoral melanomas are infrequent tumors, representing less than 2% of the total of melanomas. Initially, the clinical presentation varies from a macule that may progress to a pigmented mass. Oral melanomas in general have a poor prognosis with a high metastatic potential. The most common intraoral sites are palatal mucosa and maxillary gingiva. A 43- and 71-year-old Venezuelan females were attended at the Stomatology Clinic, Faculty of Dentistry, Central University of Venezuela, presenting pigmented lesions, varying from grayish to black, that extended from first maxillary bicusps to first maxillary molar up to maxillary tuberosity and palatal mucosa, causing mobility of the affected teeth and marked expansion. A 74-year-old African American female was also seen at the Oral Medicine Clinic, University of Maryland, Baltimore, presenting a brown black nodular growth, ulcerated on the anterior maxilla and palatal mucosa, being present for 2 years. Incisional biopsies were then performed, histopathological study was done, with a diagnosis of malignant intraoral melanoma confirmed by immunohistochemistry using specific melanocytic markers S-100 protein and HMB45, as well as neuron-specific enolase and p53. Immunohistochemical analysis showed positivity for all markers, with a strong immunoreactivity for HMB45. We may conclude from the present study that intraoral melanomas are relatively infrequent neoplasms that must be immunohistochemical assessed in order to confirm the histopathological diagnosis, rule out other melanocytic lesions and predict aggressive behavior.

21 EXTRANODAL HEAD AND LYMPHOMA IN GUATEMALA: CLINICAL, EPIDEMIOLOGIC, AND MOLECULAR FEATURES

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Orofacial and sinonasal lymphoma of the T-cell or natural killer (NK) phenotype represent a frequently occurring subset of extranodal head and neck lymphoma in Guatemala. This phenotype has been described in other geographic regions mainly Asians countries and Peru. The frequency of this type of lymphoma is affected by geographic factors, with a relatively low prevalence in Asia, Peru and Guatemala. One hundred percent of the patients were positive for Epstein-Barr virus, in contrast to 30% positivity in B-cell lymphomas in the same anatomic region. In addition, most T/NK lymphomas in our series expressed CD3 and CD56. Sinonasal lymphoma in Western countries represents only 0.17% of all lymphomas, but in Guatemala it represents approximately 4% and in Asian countries it makes up from 2.6% to 6.7% of all lymphomas. All of our patients were of Mayan descent, which we feel is an interesting finding, in that the Mayans are thought to be descendents of people who migrated from Asia across the Bering land bridge during the last Ice Age, in approximately 6000 BC. T/NK lymphoma is a high-grade tumor; patient with this tumor have a poor prognosis.

22 NATURAL HISTORY OF ORAL PAPILLOMAVIRUS INFECTIONS IN SPOUSES

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Background: The concepts of oral HPV infections as STD have been challenged by the recent data in children. Origins of oral HPV are incompletely understood and nothing is known about their natural history. In the Finnish HPV Family Study, oral HPV status of infants, mothers and fathers were prospectively followed up. **Methods:** This

cohort includes 331 women enrolled at pregnancy (mean age 25.5 ± 3.4 years) and their 131 male partners (mean age 28.8 ± 5.0 years), meticulously sampled for oral, cervical and urethral HPV infections during the 2-year follow-up. HPV DNA was detected by nested PCR and confirmed by Southern blot hybridization using 12 high risk (HR) oligoprobes. **Results:** In women, HR HPV DNA detection varied from 16% to 27%, and in males from 18% to 25%. Oral HPV in both partners at baseline was closely related (OR 4.338, 95% CI 1.581–11.907, $P = 0.006$). During the follow-up, oral HPV status in both partners was very similar; some 50% of both remained HPV negative, one third acquired an incident HPV, and persistent HPV infections were detected in 7%. Altogether, 7% of males and 9% of women cleared their oral HR HPV DNA. Cumulative incidence of new infections was identical in both spouses, while men seemed to clear their infection more rapidly. In univariate survival analysis, the partner's oral or genital HPV status, oral sex habits or age did not predict clearance or acquisition of oral HR HPV. **Conclusions:** Natural history of HPV infection in oral mucosa mimics that of genital HPV infection. Oral sex had no association to oral HPV infection, but a persistent oral HPV infection of the spouse increased the risk of persistent oral HPV infection 10-fold in the other spouse.

23 A MUTATION IN THE *HRPT2* GENE IN A FAMILY WITH HYPERPARATHYROIDISM-JAW TUMOUR SYNDROME

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Objective: To identify the causative mutation in the *HRPT2* gene in a family with cemento-ossifying fibromas of the jaws and/or hyperparathyroidism. The *HRPT2* gene encoding the protein parafibromin has been mapped by linkage analysis to chromosome 1q21–q31 and cloned by Carpten et al. (Nature Genetics 2002, 32: 676–80). **Methods:** Mutation screening of the *HRPT2* gene was performed by sequencing the 17 coding exons of *HRPT2* as 15 different fragments with primers derived from the flanking intronic or 3'/5' UTR regions, to allow detection of mutations in coding regions or affecting the splicing. The DNA was amplified by standard methods, purified and sequenced in an automated sequencer ABI 377 (PE Applied Biosystems). One-step cloning of PCR-amplified DNA fragments of the exon 1 product was performed. **Results:** Sequencing of *HRPT2* and subcloning of the mutated exon 1 revealed the same mutation in all three affected members analyzed. This mutation consists of a base substitution A>G at nucleotide 20 and one base deletion, C, at nucleotide 24 (nt 20AGGACG>GGGAG) (Figure 11). This result in a change of valine to arginine at amino acid 7, a frameshift at amino acid 8 giving rise to a premature stop codon at amino acid 20. **Conclusion:** The predicted effect on the parafibromin protein involves a protein truncation and a premature stop codon. Hence, the detected mutation is expected to underlie the disease phenotype in this family. It partly overlaps with a somatic mutation found in a case of sporadic parathyroid carcinoma. In addition, a stop mutation 25 C>T has also been found in one HPT-JT family. Future studies will determine whether this sequence of exon 1 is particularly prone to be mutated. The terminology used for the syndrome warrants review. The diagnosis of hyperparathyroidism-jaw tumor syndrome is an important one because of the possible involvement of other family members and the possibility of malignant disease developing.

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HISTOPATHOLOGICAL DIAGNOSIS FREQUENCY IN 1021 SPECIMEN RECEIVED IN 2003 IN THE ORAL PATHOLOGY LABORATORY, IN THE POST-GRADUATE SCHOOL, UNIVERSITY NATIONAL AUTONOMOUS OF MEXICO, MEXICO CITY

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Objective: To establish the histopathological diagnosis frequency in 2003 in the oral pathology laboratory. We take the Carpenter W. (1990) classification based on the etiopathogenesis MIND, and the clinical aspects of gender and age to do a distribution. **Method:** The information was taken from the archives, and the statistical analysis was performance with SPSS-9.0. **Results:** From 1021 specimens, only 886 (87%) were considerate as pathologies. The gender was female 608 (59.5%), male 371 (%) and 42 (%) were not reported. The age was: the first decade of life 67 (%), second decade of life 51(%). third decade of life 174(%),fourth decade of life 139(%), fifth decade of life 161(%), sixth decade of life 139(%), seventh decade of life 68(%), eighth decade of life 37 (%), ninth decade 14(%) and 71(%) were not reported. An inflammatory origin 640 (62.6%), neoplasm origin 107 (10.7%), development origin 139 (13.6%), and other diagnosis 97 (9.5%) and not reported 38 (3.8%). The 10 more frequents lesions were: fibrous hyperplasia 136, pyogenic granuloma 56, periapical granuloma 55, inflammatory fibrous hyperplasia 45, mucocele 34, periapical cyst 32, dentigerous cyst 31, papilloma 19, odontogenic keratocyst 19, intramucosal nevus 18. Malignant: squamous cell carcinoma 9, melanoma lentigo maligna 2, rhabdomyosarcoma 2, adenocarcinoma 1, basal cell carcinoma 1, lymphoma no Hodgkin 1, osteogenic sarcoma 2. **Conclusion:** Doing this type of statistical studies we can get a clear idea of the patients condition who attend to the dental school, dental offices and other social services hospital who send is specimen to the laboratory. Also we realize that we have to be careful filling out all the specimen studies for the validation of these retrospectives studies.

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TOBACCO HABITS IN STUDENTS AND TEACHERS IN THE DENTISTRY SCHOOL UNAM MEXICO CITY

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Objective: To know the tobacco habits and determine if the teachers and students, according to a survey are aware about the importance of detection and the prevention of malignant and premalignant lesions caused by the tobacco habits. **Method:** A survey of 20 questions was made in January and February of 2004 to 300 persons, 100 of them were professors and 200 were students of the dental school in the UNAM. **Results:** 39% of the professors are smokers, 64% of them began to smoke between 10 and 19 years old. 40% of them usually smoke from 10 to 20 cigarettes per day, 51% of them smoke regular filtered cigarettes; 38% of the students are smokers, 66% of them began to smoke between 10 to 19 years old, 80% of them usually smoke from 1 to 5 cigarettes per day. One of the questions in the survey was if they know about the 'skoal' that is a type of wet rape, 85% of the professors and 96% of the students did not know about it. Another question was if they would stop smoking, the answer was: 97% of the professors answered in affirmative way, and the students in an 80%. 100% of the surveys know about the systemic adverse effects of the tobacco. The 86% of the professors and 75% of the students know about the composition of cigarettes. **Conclusion:** This kind of studies it is useful to establish a campaign about the prevention and treatment to stop smoking, and to make aware professors and students about the consequences of smoking.

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LEUKOEDEMA DEVELOPMENTAL LESION IN THE ORAL MUCOSA OF 598 REFERRED IRANIAN PATIENTS

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The ectodermal mucosal membrane of the oral cavity may display developmental disturbances with virtually no disease characteristics. One of these, leukoedema was studied in a group of patients ($n = 598$) referred to the School of Dentistry, Teheran, Iran. The prevalence of the lesion was studied in relation to age, gender, occupation, level of education, and smoking habits as well as general health and possible addictions and/or therapies. A two-sided exact Fisher test, Pearson's test for trend and a logistic regression analysis were used for statistical analyses. We found a prevalence of leukoedema of 12.5% for all groups analyzed. Under 20 years of age the prevalence was 6.1% while over 60 it was 23.0% ($P < 0.0001$). After adjusting for age, the parameters education, occupation and complaints upon referral had little or no influence on the prevalence of leukoedema. Smoking men displayed a higher prevalence of leukoedema (33.3%) than non-smokers (14.5%) ($P < 0.0001$). Men had almost four times higher prevalence of leukoedema (20.2%) than had women (5.5%) ($P < 0.0001$). Leukoedema was seen significantly more often in patients with diabetes mellitus, also when adjusted for age and gender ($P = 0.04$). A tendency for an association between drug hypersensitivity and leukoedema was observed ($P = 0.07$) but this association is not significant after adjusting for age and gender ($P = 0.19$). We conclude that the prevalence of leukoedema was increased in men as well as in smokers. Further there was a highly significant association between the occurrence of leukoedema and age. Possibly, the prevalence of leukoedema increased in patients with diabetes mellitus.

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MULTIFOCAL EPITHELIAL HYPERPLASIA IN GUATEMALA: CLINICAL AND EPIDEMIOLOGICAL FINDINGS WITH AN ATTEMPT TO CLARIFY ITS PATHOGENESIS

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Multifocal epithelial hyperplasia (MEH) is an oral infection produced by human papillomavirus (HPV) type 13 and 32. It affects mainly lateral borders of tongue, buccal mucosa along the occlusal plane and lips, with predilection for the lower lip. HPV 13 and 32 have also been identified in juvenile laryngeal papillomatosis, which shares similar epidemiological features. This condition affects predominantly the pediatric population and tends to spontaneously regress during puberty. Its pathogenesis may be related to cellular immunosuppression, but local trauma and friction play an important role. Such factors are related to increased cellular replication, which in turn activates viral oncoproteins E6 and E7, present at the basal and parabasal cell layers of the epithelium. Viral latency has been reported in this region. In developing countries MEH affects mainly children and adolescents of low socioeconomic level, a finding that probably explains the striking epidemiological difference between rich and poor countries. In the developed world MEH is more often

diagnosed in immunocompromised patients (HIV-infected and organ transplanted patients), with the exception of afroamerican, amerindians and hispanic immigrants in US. However there is no evidence of racial predilection as previously noted in the literature, which is based, at best, on anecdotal data. We propose that MEH should be considered an opportunistic viral infection. Clinical and epidemiological data of a large series of Guatemalan patients is presented to support our hypothesis. There is also a general misconception that in some Latin American countries, there is transmission during sexual intercourse or vaginal delivery. However, HPV 13 and 32 have never been identified in genital mucosa so this suggestion must be discarded, to prevent unnecessary emotional trauma to patients and their families.

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ORAL PEMPHIGUS VULGARIS: RELATIONS BETWEEN AUTOANTIBODIES PATTERN AND CLINICAL ASPECT

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Objective: The clinical distinction between mucous and mucocutaneous pemphigus seems to be linked to different autoantibodies pattern. In patients with mucosal localization a pattern with antibodies (Ab) anti-Dsg-3 without Ab anti-Dsg1 is expected. This study valued the target antigen in patients with oral pemphigus by means of immunoblotting. **Method:** Nine patients with diagnosis of mucous pemphigus vulgaris without cutaneous involvement were consecutively recruited (three men and six women). The diagnosis was confirmed by histology, direct and indirect immunofluorescence. The sera of patients (1:100) were incubated in TBS-milk for one night to 4°C. Immunoglobulins of goat biotinylated human anti-immunoglobulin (1:500) and then streptavidin-alkaline phosphatase complex (1:3000), were incubated in TBS-milk for 30 min at ambient temperature. **Results:** 78% (7/9) of the patients showed the presence of Ab anti-Dsg 3. None of the patients had Ab anti-Dsg 1. In 3/9 (33%) patients the presence of antibodies corresponding to a 70 kD antigen was found. Two patients were negative for the presence of Ab anti-Dsg3; in literature a negative immunoblotting is described in 10–17% to 43% of cases. The studies on patients affected from oral pemphigus without skin involvement are scanty; moreover, only one paper valued the autoantibodies pattern in mucous and mucocutaneous pemphigus vulgaris by means of immunoblotting. **Conclusion:** Being confirmed the hypothesis of a mucosal subset of pemphigus vulgaris, with specific autoantibodies features, the immunoblotting is suggested in order to distinguish the subset of pemphigus and to prevent worsening and diffusion of the lesions.

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TUMOR NECROSIS FACTOR- α AND INTERFERON- γ POLYMORPHISMS DIFFERENTIAL CONTRIBUTION TO SUSCEPTIBILITY TO ORAL AND MUCOCUTANEOUS LICHEN PLANUS

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Most lymphocytes in the lamina propria of oral lichen planus (OLP) lesions express and secrete interferon-gamma (IFN- γ) and tumor

necrosis factor- α (TNF- α) whereas they do not secrete interleukin 4 and 10 or transforming growth factor- β . The basis of this Th1 cytokine bias in OLP is unclear. A physiological response to antigens or a dysregulation of the immune response may be responsible. We analyzed whether the polymorphisms of several cytokines may influence the susceptibility to OLP. Thirteen cytokine genes with 22 Single Nucleotide Polymorphisms were studied. IFN- γ UTR 5644 genotype frequencies showed a significant increase in number of T/T homozygotes in OLP patients compared with controls (40.9% versus 22.9%) ($P = 0.0022$). Moreover, in OLP patients the frequency of the -308A TNF- α allele was higher than in the controls (21.6% versus 9.3, $P < 0.05$) causing a significantly increased frequency of the genotype G/A in OLP (43.2 versus 14.3, $P = 0.0002$). Because in patients with mucocutaneous lichen planus, the frequency of the -308ATNF- α allele was more than double the values in the pure OLP patients (40.9% versus 15.1%, $P = 0.003$), the -308G/ATNF- α genotype showed a significantly higher frequency in patients with mucocutaneous lichen planus than in patients with pure OLP (81.8% versus 30.3%, $P = 0.003$). In conclusion, we suggest that genetic polymorphism of the first intron of the promoter gene of IFN- γ may be an important risk factor to develop oral lesions of LP whereas an increase in the frequency of -308ATNF- α allele may best contribute to the development of additional skin involvement.

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COMPARATIVE STUDY OF TWO TOPICAL ANTIMYCOTICS IN DENTURE STOMATITIS

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Objective: Topical antimycotics are drugs that are used a lot in our dental practical routine as treatment of the denture stomatitis. So, in the present study two usual topical antimycotics, miconazole and nystatine, are compared in the treatment of this entity. The main objective is compare the efficacy of miconazole versus nystatine, in topical use, to observe the clinical and microbiological parameters in this type oral candidiasis and demonstrate the efficacy of these drugs in the remission of signs and symptoms of the oral candidiasis in 4 weeks of treatment. **Methods:** This is a comparative, prospective, aleatory and open study, that it had been preformed in the School of Dentistry, Complutense University of Madrid. The sample was formed by 25 patients, with a medium age of 63.14 years old. The drugs were applied in a randomized order, were observed during four weeks and had a first screening visit. **Results and conclusions:** The study did not showed statistical differences in both drugs neither microbiological nor clinical aspects. Other values like taste, comfort and global satisfaction showed similar results.

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LICHENOID CONTACT STOMATITIS

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Contact stomatitis may be an irritant or an allergic reaction. Allergens include fragrances and flavors such as balsam of Peru, fragrance mix, cinnamic aldehyde, vanillin, clove oil, lemon oil, peppermint oil, spearmint oil, eugenol, and menthol. Other allergens include metals such as amalgam, mercury, gold, cobalt, palladium, molybdenum, beryllium, and nickel. Patch testing is important to determine the potential allergens causing allergic contact stomatitis. Allergic contact stomatitis may

present as gingivitis, stomatitis, glossitis, or the burning mouth syndrome. Some patients have 'atypical gingivostomatitis' (plasma cell gingivitis). Patients with the sore, burning mouth syndrome (glossodynia) may have relevant contact allergens. The oral lichenoid tissue reactions (LTR) including oral lichenoid lesions, lichen planus-like stomatitis, oral lichen planus, or lichenoid contact stomatitis (LCS) may have important allergic contact stomatitis triggers. Patch tests are important to determine relevant contact allergens. Allergy to mercury as a cause of LCS is controversial. Patients with oral LCS reactions may be allergic to fragrances or flavors in dentifrices, mouthwashes, candies, or chewing gums. They may also have metal allergies to dental metal restorations, particularly mercury and gold. The inflammatory reactions may cause maxillary or mandibular osteolysis. Patients with a lichen planus-like stomatitis may also be allergic to metals or fragrances or flavors. Patients with oral LTRs should have patch testing as part of their evaluation.

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COMPLEX APHTHOSIS

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Recurrent aphthous stomatitis can be divided into simple aphthosis and complex aphthosis. Simple aphthosis is characterized by episodic, short-lived flares of aphthous stomatitis. Lesions are few in number, heal in 3–7 days, and occur 3–6 times yearly. Complex aphthosis is a troublesome affliction with multiple lesions, large lesions, slow healing, and short remissions or continuous ulceration. Patients with complex aphthosis may have oral and genital aphthosis. Some patients with complex aphthosis develop Behcet's disease. The records of 244 patients with complex aphthosis who had been seen personally by the author were evaluated. There were 152 females (62.3%) and 92 males (37.7%). The ages ranged from 15 months to 81 years of age. The peak decade was 20–29 years of age. Most patients were 10–49 years of age. Substantive associated conditions were noted in more than 50% of patients. Anemia and/or hematinic deficiencies were present in 60 (24.6%), GI disease in 41 (16.8%), and hematopoietic and immunodeficiency conditions in 11 (4.5%) patients. Genital lesions were present in 34 (13.9%) patients. Onset was associated with smoking cessation in 10 (4.1%), drug reactions in 8 (3.3%), and trauma in 6 (2.5%). Twelve patients (4.9%) had pseudo-Behcet's disease and four patients (1.6%) had erythema multiforme associated with complex aphthosis. Treatment of patients with complex aphthosis was successful when replacing deficiencies, treating primary diseases such as Crohn's disease, modifying provocative factors such as drug reactions and trauma, and utilizing drugs such as systemic corticosteroids, nonsteroidal anti-inflammatory drugs, and other drugs. Complex aphthosis is a reaction pattern associated with many conditions including Behcet's disease and pseudo-Behcet's disease.

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EFFECTIVENESS OF 5% AMLEXANOX ORAL PASTE VERSUS CLOBETASOL PROPIONATE ORAL PASTE IN THE TREATMENT OF RECURRENT MINOR APHTHOUS ULCERS. A MULTICENTER RANDOMIZED CLINICAL TRIAL

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Objective: To compare the effectiveness of two topical medications in controlling the pain and the healing of recurrent minor aphthous ulcers in patients who attend the dental clinics in the Faculties of Dentistry around the country. **Type of study:** Double blind multicenter randomized clinical trial. **Test group:** Ninety-six patients in 10 centers in the

country. Forty-eight individuals were studied in each intervention. **Methods:** Each participant was randomly assigned one of the two treatments. The evaluators in each institution were trained in order to standardize the process of information gathering. Measurements were taken on day 0, 2, and 5 in order to determine the area of the ulcer and the degree of pain. Various demographic aspects and risk factors relating to the appearance of the ulcers were also evaluated. **Results:** In evaluating the baseline no significant differences were found in any of the variables in either of the two study groups. In both groups there was a significant reduction in the degree of pain and the area of the ulcer on days 2 and 5 (pain: $F_{2, 186} = 149.19$, $P = 0.000$; area: $F_{2, 188} = 18.33$, $P = 0.000$). However, this difference was not found to be dependent on either the location of the ulcer, the participant's gender or the treatment. **Conclusions:** The two interventions are equally effective as they both relieved the pain to a similar level and reduced the size of the recurrent minor aphthous ulcers. Both medications can equally benefit the people who suffer from this condition without adverse side effects. **Keywords:** controlled randomized clinical trial, recurrent aphthous ulcers, recurrent aphthous stomatitis, clobetasol propionate, 5% Amlexanox.

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EFFECT OF DENTURE ADHESIVES ON THE GROWTH OF CANDIDA ALBICANS *IN VITRO*

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Objective: The use of the denture adhesive increase biting force and provide rhythmic masseter muscle activity during mastication. Although denture adhesives are widely used by the elderly (approximately 15% of patients who wore a denture also used denture adhesives), it is unknown whether denture adhesives support microbial growth. The aim of this study is to investigate the growth of *Candida albicans* on five commercial denture adhesives *in vitro*. **Methods:** The growth of a single strain of *C. albicans*, 1002 of the National Collection of Culture types (Valencia) on five commercial denture adhesives (DENT-O-SECURE®, COREGA ULTRA®, FITTY-DENT®, STERADENT®, FIXODENT®) are investigated by means of the measurement of inhibition halo around the different samples. The samples were placed on Petri dishes with agar dextrose Sabouraud cultive medium (Difco Laboratories, Becton Dickinson and Co. Sparks, USA) and incubated for 2 days in an oven ('Selecta-P', Mod. 207) at 37°C. **Results:** At this time, the data collection is not completed. An analysis of the data will be provided in the oral communication. **Conclusion:** We expect to find some differences of inhibition halo due to antimicrobial agents such as sodium borate, sodium tetraborate, hexachlorophene, or propylhydroxy benzoate. They may act as preservatives and are mildly active against *C. albicans*.

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IN VITRO ANTIOXIDANT ACTIVITIES OF ANTIOXIDANT-ENRICHED TOOTHPASTESM. Battino¹, M. S. Ferreiro², A. Politi³, S. Bompadre³, P. Bullon⁴

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Objectives: Several forms of periodontal diseases (PD) are often associated with activated phagocytosing leukocytes and contemporary free

radical production. Host antioxidant defences could benefit from toothpastes used as adjuncts to counteract plaque-associated bacteria. The aim of the present study was to determine possible antioxidant activity (AA) of 12 differently antioxidant-enriched toothpastes, regardless of their efficacy as antimicrobial agents. **Material and methods:** Toothpastes were enriched alternatively with sodium ascorbyl phosphate, tocopherol acetate, pycnogenol, allantoin and methyl salicylate or a mixture of them. AA was tested with a FIA-ABTS method. Comet assay was used to test if it was possible to identify any protection against *in vitro* DNA fragmentation. **Results:** Only toothpastes containing sodium ascorbyl phosphate displayed clear AA with IC₅₀ values ranging between 60 and 80 mg of toothpaste/ml water. COMET analysis of cells challenged with H₂O₂ in presence of toothpaste extracts revealed a limited, but not statistically significant, protection exerted by sodium ascorbyl phosphate. **Conclusion:** The results described herein indicate that toothpastes containing sodium ascorbyl phosphate possess AA. All the data were obtained in systems *in vitro* and the demonstration of *in vivo* AA is desirable. These findings could be useful in the treatment of some forms of PD and should be considered when arranging new toothpaste formulations.

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ORAL HEALTH IN ELDERLY PATIENTS

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The geriatric population is the most rapidly growing segment of the population. Aging and systemic diseases and their treatment can influence oral health and function, and it is important for clinicians to be able to recognize, diagnose and treat oral conditions in the elderly. Several topical and systemic drug regimens are recommended for common oral disorders. It's important to remember that pharmacokinetics of drug absorption, distribution, metabolism and excretion are altered in the elderly. Therefore clinicians should consider changing drugs regimens or dosages depending upon concomitant drug therapy, renal and liver function, and the potential for adverse drug reactions. The purpose of this work is to provide a description of the influence of aging, systemic disease and its treatment on oral health.

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DENTAL TREATMENT UNDER GENERAL ANESTHESIA IN MENTAL HANDICAPPEDS: LONG TIME RESULTS IN A POPULATION OF 'SAN JUAN DE DIOS' SCHOOL (SEVILLE)

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A part of the population presents physical or mental impairments which preclude minimum cooperation with the dental professional to ensure treatment with the necessary guarantees. The possibility of performing general anesthesia in these special patients, is the only way to ensure adequate dental treatment. The purpose of this study was to analyze the dental status 5 years ago of a population of dental handicappeds treated under general anesthesia and to compare with a control group ambulatory treated. **Material and methods:** Experimental subjects were 29 handicapped patients from San Juan de Dios (Seville) Hospital who received dental and periodontal treatment under general anesthesia; control were 25 handicapped patients from the same institution requiring an ambulatory single dental and periodontal treatment. Record review determined previous general health status, intraoperative information, diagnosis, treatment provided and the comparison between the treatment expected through a previous examination and the treatment effectuated. Statistical analysis: Pearson's chi-squared test for the

analysis of qualitative variables was developed. For comparison of the data recorded the statistical test used was ANOVA (*post hoc* Bonferroni). Significance $P < 0.05$. **Results:** Periodontal status: There wasn't differences between previous examination and the exploration under general anesthesia. A year ago, there was an improvement of periodontal status of anesthesia group ($P < 0.0152$). There was also an improvement in treatment needs of the same group, compared with control group ($P < 0.0414$). Dental status: There was significant improvement of dental status a year after dental treatment under general anesthesia ($P < 0.0001$), but not in the control group. **Conclusions:** Persons with mental retardation and other disabilities seem to be beneficiaries of dental treatment under general anesthesia, not only by the difficulties of management but the long time results too.

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COMPLICATIONS RISKS FOR HIV-POSITIVE PATIENTS UNDERGOING DENTAL PROCEDURES

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Objective: The aim of this study is to assess the complications associated with dental procedures and the relationship with virologic and immunologic status in HIV positive infected patients. **Methods:** A cross-sectional study of the records of 76 consecutive HIV-infected patients who presented to the Sandoval STD Clinic, and to the Oral Medicine Clinic at School of Dentistry (UCM) between January 2003 and December 2003, was made. The records were taken by an experienced dental practitioner, using a structured epidemiological questionnaire. We collected information related to age, race, gender, risk HIV behaviours, medical history, CD4 and CD8 cell count and percentage, HIV viral load (VL), tobacco and alcohol intake, antiretroviral therapy and presence of oral lesions. Complications after dental procedures were also collected. Two-sided chi-square test and Fisher's exact test were used to establish a statistical correlation. **Results:** A total of 276 dental procedures were collected on 76 patients. The overall complication rate was 1.8% (5/276). 132 were invasive dental procedures. Five complications (3.7%) – pain, prolonged bleeding, infection, bone sequestrum after extractions or periodontal scaling and endodontics were documented. There were no differences between CD4, CD8 and VL in patients with and without complications. HCV coinfection was more frequent in patients with oral complications ($P < 0.05$). Oral lesions and smoking intake were documented in 80% of the patients with complications. **Conclusion:** The overall complication rate was 1.8% and after invasive dental procedures 3.7%. The presence of HCV coinfection, oral lesions and smoking habit can predict the presence of oral complications. We have found no relationship neither the virologic nor immunologic status. Studies with wider samples should be performed to confirm these findings.

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ANTI-HIV SALIVAL FACTORS: UP TO DATE

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Objective: The aim of this review is to evaluate the importance of several salivary factors present in human saliva against HIV and the role in the oral transmission of this viral infection. **Methods:** A bibliographic revision in Medline of articles published from 1990 to 2004 was made. **Results:** There are not only several salivary factors as anti-HIV

antibodies, which neutralize the virus, but also others, unspecific, acting in the same way. The most important are proteins of complement which, together with fibronectine, fix with the virus, causing its sedimentation; lactoferrine, by fixing Ferro, and inhibiting HIV growing-up; lactoperoxidase, which inactivate the virus producing hipotiocianitine; SLPs (secretory leukocyte protease inhibitors), that avoid penetration of HIV in human cells; TSP-1 (thrombospondin-1) blocks interactions between HIV and lymphocytes; and PRPs (prolin rich proteins) that bring together with Gp120, inactivating its penetration in lymphocytes. **Conclusions:** There are salival factors, which act as barrier when HIV is present in oral cavity. Apart from unspecific substances, there are a wide group of particles with an important role in that function as SLPs, TSP-1, and PRPs. All of them contribute, in an important way, to a lower, almost null, rate of oral transmission of HIV.

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ELASTASE ACTIVITY IN SALIVA AND CREVICULAR FLUID IN PERIODONTITIS

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The aims of this work were to compare elastase activity in GCF, whole mouth saliva (WMS) and parotid saliva (PS) and to investigate the relationships between elastase activity and periodontal parameters. Samples of GCF were pooled from the 12 deepest pockets of 19 patients with severe chronic periodontitis and clinical measurements were made at sampled sites. Unstimulated WMS and stimulated PS were collected. Elastase activity was assessed using a fluorimeter after degradation of fluorescent-labelled elastase substrate by the three fluids and was expressed as μUnits (μM substrate hydrolysed/minute). Minimal elastase activity was detected in PS (mean $5.1 \times 10^{-4} \mu\text{U}$, SD 4.3×10^{-4}). However, the mean elastase activity in WMS was $4854 \mu\text{U}$ (SD 9094). Mean elastase activity in GCF was $436.5 \mu\text{U}$ (SD 270.8). Spearman rank correlations indicated a strong relationship between WMS and GCF elastase activity ($\rho = 0.75$, $P < 0.0003$), there were no similar relationships with PS. GCF elastase activity was also related to the mean probing depth of the sites (Spearman's $\rho = 0.51$, $P < 0.03$) and with the mean number of sites bleeding profusely after probing ($\rho = 0.65$, $P < 0.003$). There were weaker relationships between WMS elastase activity and the mean probing depth ($\rho = 0.47$, $P < 0.05$) and between WMS elastase activity and bleeding after probing ($\rho = 0.49$, $P < 0.04$). The elastase activity in WMS is strongly influenced by the level in GCF and the activity in both fluids is associated with the periodontal condition. Further work will be needed to test the effects of inhibitors of elastase in the three fluids.

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STEM CELLS: A NEW APPROACH TO TISSUE REGENERATION IN PERIODONTAL DISEASE

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Between the therapeutic regenerative approaches to periodontal diseases, actual procedures are not perfectly predictable yet and sometimes they increase the surgical risks, the morbidity and the postoperative discomforts. At present, scientists have focused their attention on stem cells (SC) and biomaterials to obtain the regeneration of the mineralized tissue. **Objectives:** We intend to investigate the potentiality of the adult mesenchymal SCs (MSCs) from bone marrow to differentiate in mineralized tissue, when SCs are seeded on scaffolds and exposed to diverse differentiation stimuli, by

using an *in vitro* animal (rat) model. **Methods:** Rat MSCs (rMSCs) were obtained from Sprague Dawley rats (10 weeks old) bone marrow and selected basing on their ability to adhere to plastic and proliferate. rMSCs were treated for 30 days with culture medium (α -MEM with 20% serum) or osteogenic medium (OS medium) or culture medium plus different growth factors. In order to verify the differentiation in various tissues (bone, cartilage, adipose) cells were stained with different staining. rMSCs were seeded on collagenous sponge as a scaffold and assessed for cell adhesion and differentiation by histological techniques. **Results:** rMSCs were able to differentiate in different tissues; when cultured in OS medium could differentiate in mineralized tissue. Collagenous sponge support rMSCs adhesion, proliferation and differentiation. **Conclusions:** rMSCs are able to differentiate into osteoblastic lineage and retain their ability also when seeded on collagenous sponge, suggesting the feasibility of their use for regenerative approaches in periodontal diseases. Further studies are needed to evaluate their application *in vivo*.

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SEM ANALYSIS ABOUT Er-Yag APPLICATIONS ON PRIMARY TEETH

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Aim: Of the present work is to investigate the microscopy morphology (SEM) of cavity surfaces in primary teeth, prepared with Er-Yag laser irradiation, compared with the surface aspect of conventional bur cavities. **Materials and methods:** A total of 20 extracted human primary teeth (first and second molar), with no carious lesions are used in this study. On the occlusal surface of each tooth a cavity is prepared, in half of teeth using Er-YAG laser system, and in the other half a high-speed turbine. All the cavities are bisected (only bur cavities are etched) and, dried with infrared light and observed by scanning electron microscopy (SEM, Tescan Vega TS 5136MM Complete). **Results:** Cavity surfaces prepared with high-speed turbine reveal a flat aspect and are almost covered with smear layer; dentinal tubule orifices are plugged. After acid etching, the smear layer is completely removed end dentinal tubules are clearly visible. On the other hand, surfaces treated with Er-Yag laser reveal a rough and irregular aspect; dentin surface is characterized by an absence of a smear layer, orifices of dentin tubules are exposed. **Conclusion:** Er-Yag allows to obtain a surface roughness comparable with that of acid etching and might perform, due to the particular microscopic morphology, a greater adhesion force and a reduction of marginal micro-leakage.

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SEM ANALYSIS ABOUT MICROLEAKAGE OF COMPOSITE RESIN RESTORATIONS POST Er-Yag LASER APPLICATION IN PRIMARY TEETH

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The purpose of this study is to analyse *in vitro* the micro-leakage degree of composite resin restorations prepared with E-Yag and to compare this with the one obtained in bur cavity prepared. **Materials and methods:** Twenty extracted primary teeth with no carious lesions are used. On the buccal surface of each tooth, one round cavity (diameter: 4 mm; depth: 3 mm) is prepared with

Er-Yag (SMART 2949, DEKA) about 3 mm occlusally to the cement-enamel junction; on the lingual (or palatal) surface a similar cavity is prepared with high speed turbine. All the composite resin restored cavities (using flow as first) are subjected to micro-leakage test: the whole tooth surfaces, except for the areas of filled cavities and 1 mm outside the margins of the cavities are doubled-coated with nail varnish. After specific treatment, the samples are bisected at a bucco-lingual plane with a diamond saw disc. The degree of micro-leakage using dye penetration is scored according to a 4-grade scale; the restored samples are examined by SEM to evaluate the gap formation between composite resin and dental hard tissues.

Results: No micro-leakage is detected in 15 (75%) etched bur cavities and in 16 (80%) laser cavities. The examine sections show a good adhesion between restoration material and hard dental tissue and no gaps are revealed at the interface. The irregular surfaces without smear layer are particularly suitable with a good adhesion and a strong bonding with restorative materials. **Conclusions:** The results confirm that Er-Yag laser surfaces are capable of a good adhesion with restoration materials, decreasing the micro-leakage of composite resin restoration in primary teeth.

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RECONSTRUCTION AND REGENERATION IN IMPLANTOLOGY AND PARODONTAL TREATMENTS THROUGH THE USE OF LASER ND:YAG AND PRP

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The purpose of this study is to verify, through the clinical use, that the association of laser and plasma rich in growth factors makes possible and easily predictable the regeneration of tissues in periodontology and in implantology. The technology to separate blood cells has finally become accessible to the clinicians. In fact, tools are now available that allow to isolate and assemble the various components of the whole blood, included the plaques, in a completely sterile environment and for an immediate clinical use. The operation mechanism of the growth factors for bony regeneration of implantation sites is now a clinical reality, supported with a wide case histories and proven by the correspondent histological examinations. The use of this method in the treatment of periodontal lesions with inter-bones pockets is on the contrary very less predictable. The use of the laser in a surgically opened edge allows a deeper and persistent antibacterial activity both in the soft tissues and in the hard (bone and infected radicular cement), making the site ideal for the deposition of the PRP gel. This is broadly verified in all the clinical studies introduced. Therefore I conclude that, from a clinical point of view, the synergy of the laser and the growth factors contained in the PRP is a very useful technique that contributes to improve the results of bony regeneration.

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PITFALLS AND PROBLEMS IN THE INVESTIGATION OF HUMAN BITE MARKS

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Bite marks in human skin may be bruises, abrasions or lacerations or mixtures of these three entities. Skin is elastic and overlies differing tissues such as fat or bone. Biting is painful and the victim moves or withdraws. The perpetrator may move his/her teeth during biting. The resultant pathological injury may change due to tissue reaction. For these, and other reasons, bite marks are not 'mirror images' of the teeth

producing the injury, are not equivalent to finger prints, let alone DNA evidence. Bite marks may be the main evidence linking a suspect to murder, rape, child abuse, or grievous bodily harm and the link, in Law, should be beyond reasonable doubt. The major pitfalls lie in the area of interpretation of the injury, bias when a single suspect is investigated and over confidence in the certainty of the opinion or conclusion reached by the 'expert' witness. This paper will illustrate many of these pitfalls by reference to individual cases presented in Court by the author both as a prosecution and defence expert. These cases will include some of international high profile, and the matter of whether or not bite mark evidence should be used in prosecution of a suspect will be discussed.

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EVALUATION AND CORRECTION OF POSTURAL BITE MARK DISTORTION IN SKIN

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Sheasby and MacDonald (2001) demonstrated using a circular stamp that failure to appreciate the posture of a victim at the moment of biting may result in photographing a mark distorted posturally by between 6 and 39% (expansion) and 5–29% (contraction) Human bite marks are predominantly caused by anterior teeth but the mark achieved is not circular. If however symmetry exists between the left and right arches it may be possible in some instances to photograph distorted bite marks and realign them until symmetry is achieved thereby creating a more accurate representation of the pattern of the perpetrators dentition. A total of 472 dental models acquired from Edinburgh, Cardiff and Manchester were digitized on a flatbed Epson Perfection scanner and the degree of symmetry between left and right (upper and lower) anterior segments computed. Objective mathematical evidence for a catenary curve was established. Experimental, posturally distorted bite marks, digitally photographed and corrected to obtain left and right symmetry resulted in a pattern of marks that related very closely to the arch forms of the dentition that had caused the bite. The digitized and posturally corrected patterns so obtained are no substitute for conventional detailed bite mark analysis nor an appreciation of individual bite mark characteristics but form a useful adjunct especially when demonstrating how a particular dentition may be related to marks examined.

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HYPERMETHYLATION AND LOH AT THE CHROMOSOME 9Q IN ORAL SQUAMOUS CELL CARCINOMA

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Inactivation of normally expressed genes may play a role in the formation and/or progression of human cancers. Previous studies of oral squamous cell carcinoma have shown that both LOH and hypermethylation are frequent in the DBCCR1, DAPK1 and ABO regions at the chromosomes 9q33 and 9q34.2. The purpose of the present study is to investigate if these changes are due to widespread chromosomal changes or independent events. For that purpose we added five more microsatellite markers for LOH analysis, two markers at the region between 9q33 and 9q34, and three markers from 9q34.3 to telomeric region of chromosome 9q. Furthermore, methylation analysis of the gene promoters for the TSC1 gene (9q34.2) and the Notch1 gene (9q34.3) was performed by MS-PCR. LOH was found in 12/31 (38.7%) informative cases with oral carcinomas at 15 markers from 9q33.1–34.13 (129.74–145.21 cM), 8/31 (25.8%) at 9q34.2 (145.67–150.92 cM), and 3/31 (9.67%) showed LOH at 9q34.3

(161.71–168.97 cM) only the last three cases showing LOH at all three regions. Both patterns of LOH as large regional chromosome deletion and special short distance deletion were found. Two cases showed hypermethylation of the Notch1 promoter, no hypermethylation of the TSC1 promoter was found, although LOH was frequent around this gene. The results are in agreement with previous studies that showed that LOH is frequent in the regions of DBCCR1 and ABO genes, which promoters are often hypermethylated. However, a few cases have LOH and hypermethylation towards the telomeric region. There was no correlation among hypermethylation of the investigated genes indicating that hypermethylation is an independent event and not due to hypermethylation of larger regions. The finding supports the hypothesis that the chromosomal changes are specific events of significance for oral cancer development.

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ANALYSIS OF YOUNG PATIENTS WITH ORAL CANCER USING MICROARRAY COMPARATIVE GENOMIC HYBRIDIZATION

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Oral squamous cell carcinoma (SCC) typically affects patients in the sixth or seventh decade with history of tobacco and alcohol use. However increasingly oral SCC has presented in young patients with an absence of traditional risk factors. **Aim:** To define genomic aberrations in oral cancer found in young patients (<40 years), and compare with oral cancer in older patients (>40 years). **Method:** Snap-frozen samples from 18 cases of oral cancer were acquired, nine of which were under 40 years of age, and nine of which were non-smokers. After laser microdissection and DNA extraction, a microarray based comparative genomic hybridization system was used to identify genomic imbalances in these two cohorts. **Results:** The number of aberrations differed markedly between the young (mean of 47) and the older cohort (mean of 85). Tumours from our older cohort manifested aberrations at the loci that are well described in the literature e.g. 3p(78%), 5q21(67%), 9p21(67%), 1p36(67%), 3q(67%), 5p(67%), 8q(77%), and 11q13 (67%). Our young cohort showed few if any copy number changes at these classic loci, but instead showed recurrent aberrations at 5p15.2, 7p12, and 14q32. **Conclusion:** Decreased genomic instability is seen in the young group, especially the non-smoking group, and there is an absence of the well-established genomic aberrations seen in the typical oral cancer patient. Of note is the similar profile of the over 40-year-old non-smokers, to all the smokers. These findings suggest that oral cancer presenting at a younger age and without any known risk factors has a different genomic profile to the classically described oral SCC.

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THE OF MORPHOMETRIC MEASUREMENT AS AN OBJECTIVE DIAGNOSTIC TOOL IN ORAL CARCINOMA

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Background: The objective of the present study was designed to establish more specific criteria for the degree of differentiation of oral squamous cell carcinoma. Morphometric measurements by image analysis computer system were assessed in association with

clinicopathological features of OSCC. **Materials and methods:** The study was conducted on histologic material taken from 78 patients with OSCC who were clinically examined at two hospitals in Baghdad. The sample consisted of 38 males (48.7%) and 40 females (51.3%) with an age range of 14–88 years. Two histological grading systems were used; Broders' grading system revealed well differentiated OSCC in 30 patients, moderately differentiated OSCC in 27 patients and poorly differentiated OSCC in 21 patients. Invasive front grading system using four histomorphological features that includes; degree of keratinization, nuclear pleomorphism, pattern of invasion and host response (inflammatory cell infiltration). The morphometric measurement was carried out on 5 µm tissue sections in 78 cases using haematoxylin and eosin staining techniques, 100 nuclei and cell from each case of OSCC were measured. The morphometric measurement was carried out on 5 µm tissue sections in 78 cases using Haematoxylin and Eosin staining techniques, 100 nuclei and cell from each case of OSCC were measured. Each nucleus and cell was submitted to morphometric parameter measurements that include nuclear area, maximum diameter (D max), form AR and D circle, cellular morphometric perimeter and nucleocytoplasmic ratio. **Results:** Twenty-four (30.8%) of the tumours were located at the tongue and 25 (32.1%) of patients had tumour measured between (2–4) cm (T2) and 22 (28.2%) of patient suffered from clinically advanced lesions while only seventeen (21.8%) of the total cases had evidence of nodal involvement. TNM clinical staging was significantly correlated with nuclear pleomorphism at invasive front grading and host response ($r = 0.34$ and $r = 0.42$). The invasive front grading system demonstrated an aggressive nature of OSCC in elderly males. Nuclei of OSCC showed progressive increases in dimensions (nuclear area and D_{max}) from well-differentiated OSCC to poorly differentiated OSCC. Cells of well-differentiated OSCC were characterized by large size; the size difference (mean value \pm SD of cellular perimeter) was significant in differentiated cells of well-differentiated OSCC from cell of moderately and poorly differentiated OSCC. Nucleocytoplasmic ratio was a useful parameter in distinguishing nuclei and cells of well differentiated OSCC from moderately and poorly differentiated OSCC. Both nuclear and cellular morphometric measurement parameters were significantly correlated with clinical TNM staging system mainly the nuclear area, maximum diameter, cellular perimeter and nucleocytoplasmic ratio ($r = 0.45$, $r = 0.38$, $r = 0.47$, $r = 0.41$). Only two parameters of IFG system (degree of keratinization and nuclear pleomorphism) were significantly correlated with morphometric measurements. **Conclusion:** Morphometric measurements have several advantages over conventional visual assessments, in respect to objectively, reproducibility and reliability that can carry considerable weight on diagnosis and prognosis.

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EXPRESSION OF DESMOSOMES IN SQUAMOUS CELL CARCINOMA – AN IMMUNOHISTOCHEMICAL STUDY

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Global statistics show that the incidence of oral cancer is high in India. So control and early diagnosis is an important task since it has a potential ability to jeopardize the health and longevity of the patient. **Objective:** of this study was to locate and compare the expression of desmosomes by immunohistochemistry using a monoclonal antibody 32-2B against desgs 1 and 3 in squamous cell carcinoma and correlate it with (i) Tumour differentiation, (ii) Mode

of invasion of the primary tumour, (iii) Metastatic potential of a tumour. **Methods:** The laboratory based study involved the use of formalin fixed paraffin embedded tissues of 65 previously diagnosed squamous cell carcinomas of the oral cavity from the archival files of Department of Oral pathology K.L.E.'S Institute of dental sciences, Belgaum and Oral Pathology Department, Amritsar. Normal adult mucosa was taken as positive control. Normal lymph nodes served as negative control. The tissue sections were stained with H&E and anti dsgs (1&3) antibody 32-2B (Epithelial Morphogenesis Group, UK) by using ENVISION⁺™ System HRP (DAKO CORP., CA, USA) The score of desmoglein staining was recorded by the method given by Hiraki et al. (1996) and was statistically compared with grade of differentiation, mode of invasion and metastatic potential of the tumour. **Results:** The monoclonal anti desmosomal antibody 32-2B reacts reliably with normal epithelium and squamous cell carcinomas in routinely fixed paraffin embedded tissues making it a valuable marker for routine diagnostic pathology. There was a down regulation of staining in the carcinoma specimens. The amount of staining decreased as the grade of differentiation became poorer. The invasive tumours expressed less amounts of dsgs when compared with the non-invasive tumours and normal tissues. Oral squamous cell carcinomas with low expression of desmosomal glycoproteins have a tendency to metastasize to lymph nodes. **Conclusion:** In conclusion alterations in the expression of desmosomal components may represent reliable predictor markers for tumour behaviour particularly in terms of progression and metastatic potential. Down regulation of desmogleins may be useful in identifying high-risk patients and in determining appropriate therapeutic modalities.

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CHARACTERIZATION OF MAST CELL SUBPOPULATIONS IN LIP CANCER

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Lip squamous cell carcinoma (SCC) is the most common form of oral cancer. It has been shown that mast cells (MCs) are increased in several neoplasias including lip SCC. Human MCs are classified according to their protease content in tryptase-positive (MC_T) and tryptase/chymase-positive (MC_{TC}). These MC proteases have been associated with increased tumor progression and angiogenesis. The aim of this study was to quantify and characterize MC subpopulations in lip SCC. Human biopsies of invasive, well-differentiated lip SCC ($n = 21$) and normal lip vermillion ($n = 8$) were obtained, fixed in buffered formalin and processed for H&E staining, tryptase staining by immunohistochemistry, and chymase staining by enzyme histochemistry. MCs were quantified in 20 fields/section (40×) and MC subpopulations were determined by co-localization of serial sections and a previously described formula. The results showed that both MC_T and MC_{TC} were significantly increased in lip SCC as compared to normal lip ($P < 0.0001$, t test). In normal lip MC_T predominated over MC_{TC} ($P < 0.01$, Wilcoxon), while in lip SCC neither subpopulation predominated. Regarding distribution, highest MC density was found at the tumor invasion zone as compared to the intratumoral area ($P < 0.0001$). However, MC_T were increased at the intratumoral area as compared to MC_{TC} ($P < 0.01$), whereas MC_{TC} were increased at the tumor invasion zone as compared to MC_T ($P < 0.01$). The results suggest that MCs may be active participants in lip SCC progression, especially the MC_{TC} subpopulation which may be stimulating angiogenesis and extracellular matrix degradation at the invasion front. Supported by DIUC grants 202105005-1.0, 201103010-1 and FONDECYT 1020458.

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INVASION OF EARLY NEOPLASTIC ORAL KERATINOCYTES IS TRIGGERED BY SPECIES-SPECIFIC DIFFUSIBLE FACTORS PRODUCED BY UNDERLYING FIBROBLASTS

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Objective: To test *in vitro* the hypothesis that invasion of early neoplastic oral epithelial cells is triggered by diffusible, proinvasive signals provided by species-specific oral fibroblasts. **Materials and methods:** *In vitro* organotypic models of early neoplastic human oral mucosa were developed, by growing an established cell line of dysplastic human oral keratinocytes (DOK-ECACC94122104) on top of connective tissue equivalents/matrixes. Various types of matrixes were prepared: simple collagen matrix, primary oral human fibroblast containing matrix, primary oral mouse fibroblast containing matrix, and 'sandwich' matrixes with two collagen layers: a bottom layer of matrix with primary human fibroblasts overlaid by a layer of either simple collagen or mouse fibroblast containing matrix. Depth and area of invasion (D_{inv} and A_{inv} = percentage of matrix area invaded), epithelial thickness (histomorphometry) and cell proliferation index (Ki67 immunostaining) were assessed. **Results:** Presence of human fibroblasts in the matrix induced an extensive local invasion (D_{inv} : $95.6 \pm 7.1 \mu m$, A_{inv} : $50.8 \pm 3.5\%$). A minimal invasion was observed when DOK were grown on mouse fibroblast containing matrix (D_{inv} : $14.1 \pm 2.1 \mu m$, A_{inv} : $3.7 \pm 0.8\%$, $P < 0.05$). Local invasion of DOK cells was stimulated by the presence of human fibroblasts in the lower layer of the sandwich models ($P < 0.05$), or by conditioned media from parallel cultures with human fibroblasts containing matrix ($P < 0.05$). However, the above-mentioned conditions could only partially restored the depth and invasive area found in cultures with fibroblast containing matrix ($P < 0.05$). **Conclusions:** Human, but not mouse fibroblasts triggered local invasion of DOK cells in a manner that was dependent on production of diffusible factors.

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TUMOUR-DERIVED TGF-BETA 1 INDUCES MYOFIBROBLAST DIFFERENTIATION AND PROMOTES HGF/SF-DEPENDENT INVASION OF SQUAMOUS CARCINOMA CELLS

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Although tumour stroma was initially believed to support tumour development passively, there is increasing evidence to suggest that it actively contributes to malignant progression. A common finding in many types of solid tumour is that stromal fibroblasts become 'activated' myofibroblasts and express a number of contractile proteins, particularly α -smooth muscle actin (SMA). Myofibroblasts up-regulate secretion of numerous growth factors, chemokines and cytokines, as well as extracellular matrix proteins and proteases. The aim of the study was to investigate the role of squamous carcinoma cells in myofibroblast transdifferentiation, to determine the effect of myofibroblasts on oral squamous cell carcinomas (SCC) invasion, and to elucidate the possible mechanisms involved in these processes. We show that SMA-positive myofibroblasts are commonly found in the stroma of oral SCC and are often concentrated at the invasive margin of the tumour. Using oral SCC cell lines and primary oral fibroblasts,

we demonstrate that tumour cells directly induce a myofibroblastic phenotype, and that this transdifferentiation is dependent on SCC-derived TGF- β 1. In turn myofibroblasts secrete significantly higher levels of HGF/SF compared with fibroblast controls, and this cytokine promotes SCC invasion. This is the first time that this double-paracrine interaction has been demonstrated between oral SCC cells and fibroblasts, and emphasises that cancer invasion can be promoted indirectly by the release of tumour-induced host factors from stroma.

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MOLECULAR ANALYSIS OF THE RAS-RAF SIGNALLING PATHWAY IN ORAL CANCERS

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The RAS-RAF signalling pathway is important for cell proliferation and differentiation. Activation of the *RAS* oncogenes is characteristic of betel-quid associated oral cancers from India. The incidence rate of oral cancer in Norway (5.8/100 000 per year) is relatively low compared with the Sudan (13.7/100 000), where oral cancer is associated with snuff (*toombak*) dipping. **Objectives:** To search for mutations in the *RAS* and *BRAF* oncogenes in oral cancers from Norway and the Sudan to determine whether these genes are activated in *toombak* induced cancers and if there are differences. **Material and methods:** DNA was extracted using silica spin columns from formalin-fixed paraffin embedded samples of oral squamous cell carcinomas (OSCC) from Norway ($n = 28$) and from fresh samples of OSCC from the Sudan ($n = 48$). Non-cancerous parts of samples were used as normal controls. Exons one and two of *HRAS* and *NRAS*, exon one of *KRAS* and exons 11 and 15 of *BRAF* were amplified by PCR and sequenced by an automated sequencer. **Results:** *HRAS* mutations were detected in 7% (2/28) of OSCC from Norway and 8.3% (4/48) of OSCC from the Sudan. All were codon 12 mutations except one. The reported *HRAS* codon 27 C/T polymorphism was seen in 50.7% of the study material. No mutations were detected in *KRAS*, *NRAS* or *BRAF*. **Conclusion:** *RAS* and *BRAF* mutations are infrequently observed in OSCC from Norway and the Sudan despite differences in etiological factors. *Toombak* induced carcinogenesis appears not to selectively induce mutations in *RAS* unlike OSCC from the Indian Subcontinent.

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GENE EXPRESSION PROFILING OF ORAL SQUAMOUS CELL CARCINOMAS IN RELATION TO ACQUISITION OF IMMORTALITY

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Many oral squamous cell carcinomas (SCC) are known to derive from premalignant lesions which demonstrate epithelial dysplasia. Using a panel of primary cultures of keratinocytes, derived using Rheinwald's 3T3 feeder method, from normal oral mucosa, dysplastic oral mucosa, primary oral carcinoma and metastases/recurrences we have shown that acquisition of immortality often occurs at the premalignant stage. These cultures demonstrate molecular changes which associate with immortality including loss of p16^{INK4a} and RAR β , p53 mutations and telomerase activation. The changes in p16, p53 and hTERT are also found in the biopsies from which the cultures were derived.

Microarray analysis using Affymetrix U133A genechips has identified further gene expression changes associated with the immortal phenotype. This analysis shows that mortal dysplastic keratinocytes and mortal carcinomas are closely related in gene expression profile, as are the immortal dysplastic and immortal carcinoma cultures. Comparison with *in vivo* data from other studies demonstrates that the gene expression pattern characteristic of our immortal phenotype is related to poor prognosis and recurrence, whilst the pattern related to our mortal cultures has a better prognosis. Furthermore, many of the markers in mortal carcinomas, including several well-established *in vivo* SCC tumour markers, display a pattern of expression which has recently been related to senescence *in vitro*. Using the gene expression profiles, we have selected and validated several novel candidate markers of keratinocyte immortalization. These include genes involved in the cell cycle, signalling and metabolism, which may increase our understanding of the process of development of SCC and the importance of immortalization.

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PREVALENCE OF HIGH RISK HUMAN PAPILLOMAVIRUS DNA IN A DISTINCT SUBTYPE OF SINONASAL CARCINOMA

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Objectives: The presence of HPV DNA, particularly types 16 and 18, in sinonasal carcinoma (SNCa) has been documented in several investigations. Recently, we have demonstrated HPV DNA in a distinct phenotype of tonsillar squamous cell carcinoma. The purpose of this investigation is to identify a possible association between HPV and specific SNCa subtypes. **Methods:** Cases of carcinomas of the sinonasal tract were retrieved from departmental archives and were classified according to their histopathologic features into: keratinizing squamous cell carcinoma (Ksqca), non-keratinizing carcinoma (Nkca), undifferentiated sinonasal carcinoma (SNUC), and adenocarcinoma. Using PCR and type-specific oligonucleotide probes HPV DNA was identified in the tumor cells. Additional sections were cut from the paraffin blocks and were stained immunohistochemically for p16, p53 and Ki67. **Results:** Forty cases of SNCa were identified. HPV DNA was detected in nine cases, seven of which were HPV16, one was HPV18 and another HPV45. The HPV positive cases were as follows: 4/21 (19%) Ksqca, 4/8 (50%) Nkca and 1/10 (10%) SNUC. In addition to higher prevalence of HPV DNA, Nkca was also distinguished by diffuse and strong staining for p16. This stain was either negative or focal and weak in the other tumor subtypes. Nkca and SNUC had higher Ki67 labeling scores than Ksqca. p53 reactivity was detected in about one-third of all tumor types. **Conclusion:** The study shows that Nkca of the sinonasal tract may be a distinct phenotypic and biologic disease entity characterized by high prevalence of HPV DNA, over expression of p16, and high Ki67 labeling index.

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EXPERIMENTAL STUDY ABOUT VIRUSES IMPLICATED IN ORAL CANCER BY PCR

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Introduction: Oral cancer is about 2–5% of all malignant tumors in the world. There are a lot of risk factors in the relation of beginning of cancer. Etiologic agents of these cancers are tobacco and alcohol drinking. Diets that are low in certain micronutrients and some aspects of oral hygiene are considered cofactors. But, only a fraction of smokers

and drinkers develop cancer, suggesting that cofactors could include oncovirus. There is scientific evidence that some of them are capable to produce genetic alterations in normal cells. **Objective:** The objective of the present study is determinate the prevalence of herpes virus (HSV1, HSV2, VZV, EBV, MCV, HHV6, HHV7 and HHV8) and human papillomavirus (HPV 6, 11, 16, 18, 31, 33, 39, 32, 45 and 52) by PCR, in samples of patients affected of oral cancer and samples in people with healthy oral mucosa in order to investigate statistical differences between them. **Methods:** It was a case control study that have been performed in the Oral Medicine and Surgery Department in Dentistry School, Complutense University of Madrid. The study included 37 biopsy samples of Oral Squamous Cells Cancer and 41 biopsy samples of oral healthy mucosa. The medium age of the patients was 61'21 and 42'85 years old, respectively. **Results:** The study did not show statistical differences between patients with oral squamous cells cancer and oral healthy mucosa respect to the family of herpesvirus. In the case of human papillomavirus, statistical differences between these two groups only were detected in the HPV-16. This genotype was found in 33.33% of the samples none were found in the controls ($P = 0.0005$). These results suggested that HPV-16 could be involved in the etiology of oral cancer.

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EXPERIMENTAL STUDY ABOUT VIRUS IMPLICATED IN ORAL PRECANCER BY PCR

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Objective: Oral leucoplakia is one of the most frequent oral mucosal lesions, which has been observed in the daily clinic. Its malignant transformation is evidence (3.6–17.5%). The present study is going to investigate the implication of some oncovirus in the transformation from leucoplakia to Cancer, to see what the implication of this virus in early phases of cancer is. Because of this, we are going to determinate the prevalence of herpesvirus (HSV1, HSV2, VZV, EBV, MCV, HHV6, HHV7 and HHV8) and human papillomavirus (HPV 6, 11, 16, 18, 31, 33, 39, 32, 45 and 52) by PCR, in samples of patients with oral Leucoplakia and samples in people with healthy oral mucosa in order to investigate statistical differences between them. **Methods:** It was a case-control study that has been performed in the Oral Medicine and Surgery Department in the Dentistry School, Complutense University of Madrid. The study included 41 biopsy samples of oral leucoplakia and 41 biopsy samples of oral healthy mucosa. The medium age of the patients was 49.34 and 42.85 years old, respectively. **Results and conclusion:** The results did not show statistical differences between patients with oral leucoplakia and oral healthy mucosa respect to the family of herpesvirus. In the case of human papillomavirus, statistical differences between these two groups only were detected in the HPV-16. This genotype was found in 40% of the samples but none were found in the controls ($P = 0.0005$).

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HUMAN PAPILLOMA VIRUS HAS NO AETIOLOGICAL ROLE IN ORAL SQUAMOUS CELL CARCINOMAS IN A SOUTH AFRICAN POPULATION SAMPLE

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Objective: Even though greatly varying in its frequency, HPV is reported to be a significant independent risk factor for OSCC, with HPV-16

being shown to be the most frequently detected type. South Africa is a developing country with a high incidence of OSCC. One previous study on the prevalence of HPV in OSCC in a South African population sample has been reported. The authors found a prevalence of 1.4% after which they concluded HPV as unimportant in the development of OSCC. The aims of our study were to re-evaluate the prevalence and prognostic role of HPV in OSCC in a South African population sample and to compare three different detection methods as diagnostic techniques for HPV. **Methods:** Fifty-nine cases of primary OSCC were retrieved from the archives of the Medical and Dental Schools at the University of Pretoria, South Africa. Tumour cells as well as adjacent morphologically normal oral epithelium cells were evaluated for HPV using (1) polymerase chain reaction (PCR) with a HPV 16 probe, (2) conventional non-amplified *in situ* hybridization (ISH) with a HPV DNA cocktail probe, and (3) a signal amplification ISH technique using a biotinyl-tyramide-based signal amplification system with a HPV DNA cocktail probe (DAKO GenpointTM). **Results:** Contrary to the results of some other studies on OSCC, no HPV-positive signals could be detected in any of the cases. **Conclusion:** We confirm the results of the previous study and conclude that HPV seems to play no role in the pathogenesis or prognosis of OSCC in this part South Africa.

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UNDECALCIFIED BONE SAMPLES. USAGE IN BONE BIOLOGY RESEARCH

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Objective: Bone regeneration techniques require of laboratory procedures, which allow hard tissues to be assessed without being demineralized. The aim of this study is to describe the cutting-grinding EXAKT system to get undecalcified bone samples and to settle the histological and histomorphometric procedures used to assess them by reviewing the literature. **Methods:** The laboratory procedure is described along the different stages of the technique, that is, tissue fixation, embedding, cutting and grinding, staining and interpretation. The histological variables studied are features of bone cells, differences between mature and immature bone and bone-biomaterial interface. The histomorphometric variables studied are bone area density, bone-implant contact and mineral aposition rate. The variables are explained by showing several experimental studies made by the authors and studies collected from the literature. **Results:** The technique is used to obtain samples with very hard tissues included, such as implants, ceramics or dental tissue although the total time required make it little useful for diagnosis purposes. Undecalcified samples allow the observer discriminate immature bone (woven bone or parallel fibered bone) from mature bone (lamellar bone). It also permits to quantify correctly the bone cells which act in remodelling and allow making dynamic studies with fluorochrome labels. The bone-biomaterial interface is evaluated with this technique precisely due to the exact movement of the cutting unit during the section. **Conclusion:** Undecalcified samples are replacing calcified techniques because of its better and precise evaluation and quantification of bone structures. Cutting-grinding EXAKT system obtain very thin samples which are ideal for histological and histomorphometric studies but it has the disadvantage of a very high cost.

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WORKLOAD PRESSURES IN ORAL PATHOLOGY: A 'WEIGHTING LIST' INITIATIVE

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Introduction: Workload pressures within histopathology laboratories are increasing yet not all specimens are equally important in terms of their potential impact on patient management. Nevertheless, histopathological examination occasionally yields unexpected findings that overturn the clinical diagnosis. The pathologist's frustration from the obligation to report all samples is aggravated by the low pick-up rate of important disease. **Aim:** This investigation was undertaken to streamline reporting practice in Belfast by determining the pick-up rate for unsuspected significant diagnoses in oral pathology. **Method:** For cases of jaw cyst or oral polyp over a 12-month period, the information on request forms was correlated with the 'sign-out' diagnosis. **Results:** Of 569 jaw cysts and 384 oral polyps, significant disease was identified in 2% (18/868) where it was not suspected clinically. The theoretical risk of missing a significant diagnosis by not reporting jaw cysts is 3% (16/557) but varies according to the relationship with teeth. The risk for oral polyps is 4% (16/379) but varies with the location of the polyp. **Conclusions:** Specimen categorization according to the probability of identifying significant disease results in a 'weighting list' to allow prioritization on objective criteria. Such listings allow modification of laboratory practice to streamline reporting, quantify overloading and identify the need for additional staff or resource.

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FINE NEEDLE ASPIRATION OF SALIVARY LESIONS: ARE WE TRYING TOO HARD?

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Introduction: Opinion on the value of fine needle aspiration cytology (FNAC) in management of salivary gland swellings ranges from 'sufficient to allow surgery to be avoided' to 'does not affect the decision to operate'. **Aim:** To determine our accuracy with FNAC and to propose a diagnostic algorithm to improve clinical usefulness. **Method:** All histopathological and cytopathological samples of salivary glands were identified over a 2-year period. Accuracy, sensitivity, specificity, positive predictive value, false-positive, false-negative and inadequate rates were calculated. **Results:** From 196 biopsies, there were 56 cases with both FNAC and histology, a further 35 patients had FNAC without corresponding histology. Expressed in traditional terms, the value of FNAC was: accuracy 68%, sensitivity 61%, specificity 76%, positive predictive value 100%, false negative 8%, false positive 0%, inadequate rate 13%. In terms of management priorities, metastatic lesions were correctly categorised in 100%, salivary lesions 98%, lymphoid lesions 100% and others 100%. **Conclusions:** In traditional terms, our diagnostic accuracy with FNAC compares favourably with others but reformatting the diagnostic algorithm to allocate lesions to broad groups with clinicopathological impact improved the concordance of histological and cytological diagnoses. Provided the possibility of metastatic carcinoma can be excluded, there is little to be gained and much to be lost by too precise a diagnosis on FNAC.

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DEVELOPMENT OF A NON-INVASIVE SCREENING TEST FOR PRENEOPLASTIC LESIONS IN THE ORAL CAVITY BASED ON GENETIC MARKERS

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Objective: To improve the identification and grading of preneoplastic lesions of the oral mucosa. **Material and method:** An existing test for the measurement of numerical chromosomal alterations, multiplex

ligation-dependent probe amplification (MLPA), was applied using 140 markers distributed over the genome. Macroscopically normal mucosa, dysplasia and oral squamous cell carcinoma (OSCC) were investigated to select the most suitable markers for detecting oral preneoplastic lesions. MLPA was also evaluated on cells brushed from the oral mucosa of healthy controls. **Results:** Forty-three markers were shown to be useful because of: (1) high reproducibility and (2) ability to detect premalignant oral mucosa. MLPA was found to be feasible on the DNA isolated from small numbers of cells brushed from the oral mucosa. **Conclusion:** The MLPA technique with a panel of specific markers has proven to be sufficiently sensitive, reproducible and easy to perform on small samples and thus can be considered a promising method to improve the early diagnosis of preneoplastic lesions in the oral cavity.

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THE USEFULNESS OF TOLUIDINE BLUE STAIN TEST AS A DIAGNOSTIC TOOL ON ORAL LESIONS

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Objective: The global diagnostic precision of toluidine blue staining in oral Medicine in order to diagnose oral cancer and precancer remains controversial. The accuracy of the test is still unclear. The aim of this study is to obtain sensibility and specificity of toluidine blue stain, and consequently the positive predictive value (PPV). **Methods:** A clinical trial on 155 patients attending the Dental School, UCM, during the period 1999–2004, was conducted by an expert Oral Medicine practitioner. The test was performed on all the patients as follow: the patients were instructed to rinse consecutive mouthwashes of acetic acid 1%, toluidine blue 1% and finally acetic acid 1%. Lesions were classified as positive or negative according to the criteria of the examiner. Histological examination was made in all the cases. Sensitivity and specificity of test was obtained with a double entry table. **Results:** Values obtained were as follow: sensibility 60%, specificity 72.7% and PPV 33.33%. **Conclusion:** Sensibility and specificity values observed were lower than those reported by other studies, and suggest the low accuracy of this test as a screening method on oral cancer and precancer.

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PREDICTIVE MODEL OF THE INCREMENT OF ORAL *C. ALBICANS* IN PATIENTS SUBJECTED TO RADIOTHERAPY IN FUNCTION OF THE SALIVARY FLOW AND THE USE OF PILOCARPINA

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Objective: To know the necessity of antifungal prophylaxis in patients subjected to radiotherapy for head and neck neoplasias in those that the major salivary glands will be included in the treatment fields. **Material and methods:** In 56 patients that received an average of 60 Gy of total dose of radiotherapy, they were carried out cultures of *C. albicans* and it was measured the total stimulated salivary flow before the beginning and at the end of the treatment. On the basis of a randomization list half of the patients received pilocarpine (5 mg/three times a day) as stimulant of the salivary flow. The data were processed with the statistical package SAS v 8.2 using the technique of Poisson regression. **Results:** It is obtained a statistically significant relationship between the quantity of CFU of *C. albicans* previous to the radio-

therapy and at the end of it. The pilocarpine use diminishes in a significant way the recount of final *C. albicans* in the group of patients with initial salivary flow of 1 ml/min, whereas it does not alter it significantly in the group with an initial value of 2 ml/min. The patients with higher values of initial salivary flow presented a smaller recount of *C. albicans* at the end of the radiotherapy than those with smaller initial values of salivary flow. Even for the patients with previous negative cultures, the average of final CFU was of 497 with initial flow of 2 ml/min and of 698 with initial flow of 1 ml/min. **Conclusions:** The obtained pattern allows advising the antifungal prophylaxis even in patients with negative cultures previous to the radiotherapy, especially in those patients with low previous salivary flows, those which, also, they are those that more they can benefit of the pilocarpine use.

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STUDY OF ORAL DRYNESS IN ONE POPULATION OF MENOPAUSICAL WOMEN

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Due to a longer life expectancy, women nowadays live over a third of their lives after the end of menstruation. This entails some hormonal changes due to the cessation of ovarian functions that may cause some direct and indirect problems that need to be taken into account. A clinical condition that appears among menopausal women is oral discomfort characterized by oral dryness and burning along with a decrease in the salivary flow in rest and under stimulating circumstances. Nevertheless, a decrease in the production of saliva does not always cause these symptoms. The above has made us raise the question of a possible existing relationship between menopause and oral discomfort, as well as salivary flow. **Material and methods:** The study was performed on 85 menopausal women. Neither of which complained of xerostomia or oral burning. The excluding criteria was: (1) Parotid disease or any other metabolic disease, received drug treatment that would alter the bone metabolism. (2) Previous hormonal treatment. (3) Edentulism, Sjogren's syndrome or head or neck radiotherapy. All patients underwent a clinical history assessment, xerostomia protocol, exploration, sialometry in rest and stimulation and a bone densitometry. **Results:** The mean age of the patients was 59.2 years old, with a mean age of cessation of menstruation of 47.9 years old and a mean number of years after the cessation of menstruation of 11.2–34.1% experienced oral dryness. In 24.7% of these cases, the tongue was the area where dryness occurred most frequently. The mean of salivary flow in rest was 0.284 ml/min with an 83.5% of women presenting hyposalivation, the mean of stimulation was 0.86 ml/min with a 70.6% of patients with hyposalivation parameters. 45.5% had normal densitometric data as opposed to 38.8% of osteoporotics and 15.3% of osteopenics. **Conclusions:** The prevalence of xerostomia increases with the age of the patients. The sialometry data decreased in rest – as the years after the cessation of menstruation go by the incidence of xerostomia also increases and the sialometry data in rest decrease. Xerostomia patients have more dryness of the skin and tissues – no relationship between osteoporosis and the presence of xerostomia was observed.

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MALT AND B-CELL MONOCLONALITY OF LABIAL SALIVARY GLANDS IN SJOGREN'S SYNDROME

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Sjogren's syndrome is an autoimmune exocrinopathy characterized by an increased risk of developing B-cell malignant lymphoma, especially of the MALT type. Acquired MALT arises as a response to the autoimmune sialadenitis of Sjogren's syndrome and B-cell monoclonality is often detected in the lymphoid aggregates. Although the significance of clonality as a precursor of malignancy remains controversial, it may herald the emergence of malignant lymphoma in some cases. **Object:** The purpose of this study was to investigate the presence of acquired MALT and B-cell clonal expansions in the labial salivary glands of patients with Sjogren's syndrome. **Materials and methods:** An immunohistochemical technique using the primary antibodies anti-CD3, anti-CD20, anti-kappa and anti-lambda light chains was applied to formalin-fixed, paraffin-embedded labial salivary gland biopsies from 25 cases with Sjogren's syndrome and 10 control cases with non-specific sialadenitis. **Results:** Lymphoepithelial lesions with positive intraepithelial B lymphocyte CD20 expression, adjacent lymphoid follicle formation and peripheral plasma cell differentiation of marginal-zone B-cell lymphocytes were observed in ten (10) cases, graded with a III or IV focus score. In five (5) of those cases, κ light chain restriction associated with lymphoid follicles was identified while none of the controls exhibited any lymphoepithelial lesion or B-cell monoclonality. **Conclusions:** Focal lymphocytic sialadenitis in Sjogren's syndrome eventually predisposes to the development of acquired MALT at a later stage of the disease process, whereas B-cell monoclonality in these areas is probably an early event during the multistep course of lymphomagenesis with uncertain however malignant potential.

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ASSOCIATION BETWEEN MEDICATIONS, SALIVARY FLOW AND XEROSTOMIA IN OLDER PATIENTS WITH DIABETES MELLITUS AND HYPERTENSION

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Objective: The aim of this study was to investigate the relationship among systemic disorders, salivary flow and the prevalence of xerostomia (PX) with association of the pattern intake of drugs. **Methods:** We studied 440 elderly subjects with type 2 diabetes mellitus (DM), hypertension and a control group. We evaluate xerostomia, unstimulated whole saliva (UWS), stimulated whole saliva (SWS) and intake of medication. Data were analyzed with hierarchical clusters analysis and discriminate analysis. **Results:** The individuals were classified in three groups. Group 1: included control and diabetic subjects without xerostomic drugs. The mean UWS were 0.30 ± 0.20 and SWS 1.25 ± 0.77 ml/min. PX was 16.1%. Group 2: included hypertensive (HS) and diabetic with hypertension subjects (DHS) with xerostomic medication. UWS was 0.25 ± 0.21 and SWS was 0.99 ± 0.66 ml/min. PX was 29.3%. The association between xerostomia and the presence of hypertension (with or without concomitant DM) has odds ratio 2.0 (95%IC 1.15, 3.5) $P = 0.013$. Group 3: included HS and DHS without xerostomic medication. UWS was 0.26 ± 0.17 and SWS 1.04 ± 0.68 ml/min. PX was 25.5%. The patients of group 2 have 2.0 more probability to produce UWS less than ($<$) 0.15 ml/min (CI 95% 1.02, 3.0) $P = 0.039$ and 2.0 more probability to produce SWS < 0.5 ml/min (CI95% 1.06, 3.0) $P = 0.028$ than the patients no included in this group. **Conclusion:** Significantly lower UWS and SWS were found in the subjects of group 2. The drugs with xerostomic effect and the medical status plays and important role in the salivary flow and xerostomia in the elderly patients.

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THE ROLE OF DNA PLOIDY AND KI-67 IN THE GRADING OF MUCOEPIDERMOID CARCINOMAS

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Objective: The grading of mucoepidermoid carcinomas (MEC) is based on subjective microscopic evaluation of the prevalence of cell types as well as features of atypia and aggressiveness. A more objective, modified grading system based on the allocation of numerical scores to histological features was recently proposed by Brandwein et al. 2001. Our study was aimed at evaluating the role of high-resolution DNA flow cytometry and Ki-67 expression in the grading of MEC. **Methods:** Sixty-eight cases of intraoral- and major salivary gland tumours diagnosed as MEC were retrieved and the grading system proposed by Brandwein et al. applied. Flow cytometry was performed on 50 µm sections of the formalin-fixed paraffin-embedded tumour blocks using a DAPI solution to stain the nuclei. Ki-67 expression was determined following heat antigen retrieval. The most stained areas were evaluated and positivity expressed as a percentage of cells counted. **Results:** Forty-four percent of our sample was graded as high, 26% as intermediate and 30% as low. Ninety-four per cent of the high-grade MEC showed aneuploid DNA cell populations while 95% of the diploid tumours were graded as intermediate or low. The mean Ki-67 positivity was significantly different between the high and intermediate grade tumours and between the aneuploid and diploid tumours. **Conclusion:** This study showed that high-resolution DNA flow cytometry of archival paraffin-embedded tissue is accurate in the grading of MEC and can be used with Ki-67 expression as an additional diagnostic tool.

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MIKULICZ'S DISEASE AND SYNDROME: ANALYSIS OF THE ORIGINAL CASE REPORT OF 1892 IN THE LIGHT OF CURRENT KNOWLEDGE IDENTIFIES A MALT LYMPHOMA

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Objective: To remove the confusion surrounding the terms *Mikulicz's disease* and *Mikulicz's syndrome* by discovering the nature of the disease that Mikulicz described in the context of current knowledge. **Method:** Investigation of the original publication from 1892, which includes macroscopical and microscopical illustrations of outstanding quality. **Results:** Mikulicz described bilateral painless swellings of the lacrimal and major and minor salivary glands that were present for 14 months without any reduction in salivary flow before the patient, a man of 42 years, died with signs of peritonitis. A print of a microscopical field of a resected submandibular gland contains a uniform lymphocytic infiltrate with centrocyclitic morphology, in the context of current knowledge typical of MALT (mucosa-associated lymphoid tissue) lymphoma. This diagnosis is strongly supported by the indolent clinical course and the generalized involvement of the glands, which corresponds to the selective homing and epitheliotropism characteristic of extranodal MALT lymphomas. **Conclusion:** Mikulicz unknowingly published the first case report of a MALT lymphoma of the lacrimal and salivary glands. Now that the riddle of his case has been solved, the terms *Mikulicz's disease* and *Mikulicz's syndrome* should be discarded in order to avoid confusion that could be followed by untoward consequences.

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A MUTATION IN THE *HRPT2* GENE IN A FAMILY WITH HYPERPARATHYROIDISM-JAW TUMOUR SYNDROME

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Objective: To identify the causative mutation in the *HRPT2* gene in a family with cemento-ossifying fibromas of the jaws and/or hyperparathyroidism. The *HRPT2* gene encoding the protein parafibromin has been mapped by linkage analysis to chromosome 1q21-q31 and cloned by Carpten et al. (Nature Genetics 2002; 32: 676-680). **Methods:** Mutation screening of the *HRPT2* gene was performed by sequencing the 17 coding exons of *HRPT2* as 15 different fragments with primers derived from the flanking intronic or 3'/5' UTR regions, to allow detection of mutations in coding regions or affecting the splicing. The DNA was amplified by standard methods, purified and sequenced in an automated sequencer ABI 377 (PE Applied Biosystems). One-step cloning of PCR-amplified DNA fragments of the exon 1 product was performed. **Results:** Sequencing of *HRPT2* and subcloning of the mutated exon 1 revealed the same mutation in all three affected members analyzed. This mutation consists of a base substitution A > G at nucleotide 20 and one base deletion, C, at nucleotide 24 (nt 20AG-GACG > GGGAG) (Figure 11). This result in a change of Valine to Arginine at amino acid 7, a frameshift at amino acid 8 giving rise to a premature stop codon at amino acid 20. **Conclusion:** The predicted effect on the parafibromin protein involves a protein truncation and a premature stop codon. Hence, the detected mutation is expected to underlie the disease phenotype in this family. It partly overlaps with a somatic mutation found in a case of sporadic parathyroid carcinoma. In addition, a stop mutation 25 C > T has also been found in one HPT-JT family. Future studies will determine whether this sequence of exon 1 is particularly prone to be mutated. The terminology used for the syndrome warrants review. The diagnosis of hyperparathyroidism-jaw tumour syndrome is an important one because of the possible involvement of other family members and the possibility of malignant disease developing.

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JUVENILE (ACTIVE, AGGRESSIVE) OSSIFYING FIBROMA. REPORT OF TWO CASES

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Background: Johnson et al. (1952) used the term juvenile active ossifying fibroma to describe a cellular and aggressive variety of ossifying fibroma, affecting the jaws of children. In a recent paper by El-mofty, S., described two microscopically variations of this lesion: the psammomatoid and the trabecular types, and because the clinical differences between the two types, he suggested their classification as two distinct clinicopathologic entities. **Method:** We report a psammomatoid juvenile ossifying fibroma in the right mandible of a 9-year-old girl and a trabecular juvenile ossifying fibroma, affecting the right maxilla in a 5-year-old boy. **Conclusion:** We will comment on the difficulties encountered to arrive to the right diagnosis of these two variants of juvenile ossifying fibroma, as well as the follow-up of the patients.

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INTRAORAL LIPOMAS

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Introduction: Lipomas are benign tumours of unknown aetiology comprising slow-growing mature adipose cells. They are found most frequently in the buccal mucosa. They may appear as a diffuse growth, particularly in the deeper tissues, or encapsulated in forms closer to the surface. They are normally single lesions, although multiple hyperplasias may appear in systemic diseases such as neurofibromatosis and Gardner's syndrome, among others. **Case histories:** *Case 1:* A 47-year-old female patient presented with a 1.5-cm, painless exophytic tumour on the left side of the buccal mucosa, near the retromolar area, which had developed over a 5-year period, with no history of bleeding or sores. Histological analysis revealed a lipoma. *Case 2:* A 70-year-old male patient presented with a prominent exophytic tumour on the bottom of his mouth, which had developed painlessly over a 10-year period, until the last month before reference to the ward. Treatment involved surgical removal of the entire lesion and, as in the preceding case, the diagnosis was histopathologically confirmed to be a lipoma. **Results:** Lipomas account for 3–4% of all benign tumours. Thirteen per cent of such tumours are found in the head and neck but are generally rather uncommon in the mouth, accounting for from 2.2 to 4.4% of all intraoral tumours. Despite these figures, they are regarded to be the most common of the benign neoplasias of the mouth. Their aetiology is unknown, although their origin is associated with prior traumas, infarcted areas, infections, chronic irritation, degeneration of fatty tissue, hormonal factors, and the like. The most important differential diagnosis is with liposarcoma.

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**PREDICTIVE POTENCIAL OF CD4, CD8 AND HIV
VIRAL LOAD ON LABORATORY VALUES IN HIV
PATIENTS: INFLUENCE IN DENTAL CARE (ORAL)**

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Objective: Most patients infected with human immunodeficiency virus (HIV) are familiar with their CD4+ and CD8+ cell count or percentage and HIV viral load (VL). However, most of these patients are not cognizant of other laboratory values that can significantly influence dental treatment as hemoglobin, platelet count, absolute neutrophil count, prothrombin time and international normalized ratio (INR). The aim of this study is to attempt to determine whether these laboratory values could be predicted by using CD4+ and/or CD8+ cell count and VL in HIV-infected patients. **Methods:** A cross-sectional study of the records of 120 consecutive HIV-patients who presented to the Sandoval Health Centre, and to the Oral Medicine Clinic at School of Dentistry (UCM) between January 2003 and March 2004 was made. The records were taken by an experienced dental practitioner from the Oral Medicine Clinic. We collected information related to age, race, gender, risk behaviours. CD4+ and CD8+ cell count; percentage and VL were our dependant variables. Absolute neutrophil count, haemoglobin, prothrombin time, INR and platelet count were the explanatory variables. Multiple regression analysis was used to establish a statistical correlation. **Results:** A positive linear correlation between the CD8+ cell count and CD8+ percentage with platelet count ($r = 0.157$, $P < 0.01$) was noted. CD4+ count with platelet count was almost significant ($r = 0.025$, $P = 0.057$). We have found no statistical lin-

ear correlation between CD4 count or percentage or VL with the rest of the explanatory variables (haemoglobin, neutrophil count, prothrombin time and INR). **Conclusion:** A low CD8+ cell count may predict thrombocytopenia in HIV-infected patients. This relationship may provide the practitioner with additional indicators for modifications to dental treatment but more studies with wider samples are necessary.

Posters I

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**CALCIFICATION AND GHOST CELL
DIFFERENTIATION IN CALCIFYING
ODONTOGENIC CYST CELL SYSTEMS**

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Objective: It is unknown what kinds of cellular and molecular events are involved in calcification and ghost cell differentiation in lining epithelial cells of calcifying odontogenic cysts (COCs). To this end, we tried to establish COC cell lines to investigate their processes towards calcification and ghost cell formation. **Methods:** Human COC cell lines were established from a surgical specimen of a recurrent COC arising in the maxilla in a 54-year-old man. Following primary cultures, six epithelial cell lines designated COC1–COC6 were cloned. They were characterized for their karyotypes by chromosome analyses and odontogenic natures by immunofluorescence and RT-PCR for enamel-related molecules in single culture and co-culture with odontogenic fibroblasts in primary culture. They were also xenografted in nude mice. **Results:** All of the COC cells showed keratin + epithelial phenotypes and expressed distinct mRNA levels of enamelin, amelogenin, tufutelin, bone sialoprotein (BSP), MMP-20 and alkaline phosphatase (ALP). In co-cultures with fibroblasts, the COC cells grew to form nestic structures, in which ghost cells appeared and calcified fleckless in the later stage. Differentiation and finally appeared calcifying nodules were observed on those cell nests. All of the COC cells had chromosomal aberrations such as multiple copies, translocations [Der(9)t(9;13)(p13;q12)] and deletions. They formed tumor nodules with squamous cell carcinoma-like characteristics in nude mice. These results show that the COC cells are potentially neoplastic and capable to be differentiated into ghost cells, indicating that they are useful models for investigating the molecular mechanisms of ghost cell differentiation and epithelial calcification.

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FIBROUS DYSPLASIA

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Fibrous dysplasia of bone is a uncommon condition in which normal bone are replaced by a distinct benign fibro-osseous tissue. The disease accounts for about 7% of benign bone pathology, and certain predominance among females has been reported. When a single skeletal site is involved the term monostotic fibrous dysplasia (MDF) is applied, and when multiple skeletal site involved the term polyostotic fibrous dysplasia (PDF) is used. The lesion or lesions tend to grow throughout the skeletal developmental process, and affect particularly the upper jaw. Radiologically, the disease is characterized in its early stages by existence of radiotransparent images that gradually acquire a 'ground glass' appearance as the spicules of

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immature bone develop within the connective component. Our clinical experience in several cases is shown in this poster.

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EXPRESSION OF MUTATED PROTEIN p53, Ki67 AND HUMAN PAPILLOMAVIRUS DNA IN ODONTOGENIC KERATOCYSTS

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The expression of mutated p53, Ki67 and the presence of Human Papillomavirus (HPV) DNA were studied in 82 odontogenic keratocysts (OKCs). The aim was to assess the importance of the p53 mutation and HPV presence in the aetiology of OKCs and to analyse the proliferative and maturative pattern of these lesions. An immunohistochemical technique with anti-p53 PAb 240 (Dako) and anti-Ki67 MIB-1 (Dako) monoclonal antibodies and a PCR (HPV DNA amplification) were performed. Clinical-pathological data of the lesions were gathered. P53 was expressed in 14.6% (12/82) of cases. A statistically significant association was observed between p53 expression and presence of dysplasia ($P = 0.023$). The suprabasal expression of Ki67 was significantly more frequent than its basal expression ($P < 0.01$). No HPV-positive case was detected. No statistically significant associations between p53 and Ki67 expressions or between the suprabasal expression of Ki67 and the presence of dysplasia were observed. It appears unlikely that p53 mutation or HPV infection are aetiological events in OKCs. In our view, OKCs present a different proliferative and maturative pattern to that of other odontogenic cystic lesions of the jaw.

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CHARACTERIZATION BY PCR OF GENE p53 IN ODONTOGENIC TUMOURS

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Gene p53 produces a double polymorphism protein in 72 code. It is associated with an Arginin allele and risk of developing malignant neoplasms associated with human papillom virus. It was identified in ameloblastomas, odontogenic tumours locally aggressive and with tendency to recidive. **Objective:** To investigate the pleomorphism of 72 code of gene p53 in Ameloblastomas HPV +. **Methods:** We used 1 to 3 section 10 microns of thickness from 9 specimens of Ameloblastomas of our histopathological archives. They were localized in mandible. Residue Arginin/Prolin was identify by Polimerasa Chain Reaction analysis, specific allele. We used electrophoretic method in minigel of poliacrilamide 6% for amplification and posterior reading. Staining was made with ethyl bromide. Control group consisted in six musters of odontogenic tumours. Same proceeds were applied to them. Statistic study was performed with Fisher test. **Results:** Study's serie: Residues Arg/Arg: 0%; Arg/Prol: 22.3% and Pro/Pro: 77.7%. Control group: Arg/Arg: 54.5%; Arg/pro: 36.4% and Pro/Pro: 9.1%. Fisher test: $P = 0.014$. **Conclusion:** Prol allele in our series, in comparison with control specimens, showed a significant statistic difference between p53(72P) and Ameloblastomas HPV reactivates. It could suggest the confirmation of those clinic aspects of local aggressiveness and tendency to recidive of this tumours.

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FIBRO-OSSEOUS LESIONS OF JAW

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Introduction: The fibro-osseous lesions of jaw are characterized by a collection of non-neoplasm intraosseous lesion, which replaces a normal bone and consists of a cellular fibrous connective tissue within which non-functional osseous structures form, that exhibit in some occasions epithelium odontogenic and sometimes calcification centers in dentine, cement, or bone form. They appear at any age, but it is much more common in adults of female gender. The jaw is affected; usually there are not any symptoms until it produces a remarkable growth and deformation. **Objective:** To determine the prevalence of reported fibro-osseous lesions of oral cavity in the service of histopathology diagnosis of the Dentistry Department UAT. **Method:** A total of 149 files of the service of Histopathology were reviewed registered on the period of January, 2000 to September, 2002. The cases of fibro-osseous lesions were selected and diagnosed by the oral pathologist. The statistical analysis of the results was made with the statistical programs for computer SPSS V 9 and Excel determining the prevalence, mean and the percentages of each one of the alterations in men and women. **Results:** There were 46 clinical cases with fibro-osseous injuries (30.8%). The injuries were more frequent in women (84.7%) with an average of 45 years and in men (15.2%) of 44 years. The most frequent location was in the superior maxilla on the alveolar rim. **Discussion and conclusions:** The fibro-osseous injuries are more frequent in oral cavity with little tendency to malignant transform. The main grounds of the cases are due to chronic irritation. In the present work the injury predominated in women of 45 years with a time of evolution of the injury of 4–12 months. It is important to make an early diagnosis and give a suitable treatment to avoid the recidivate of this kind of lesions.

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ODONTOGENIC TUMORS: A CLINICO-PATHOLOGICAL ANALYSIS IN A VENEZUELAN POPULATION

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Odontogenic tumors (OT) are relatively infrequent lesions in the majority of the files of surgical pathology around the world, representing 1–2% of the total of odontogenic lesions. Interestingly, there are not so many reports on OT in general in Latin America, however, few individual reports have been published. The aim of the present study was to determine the frequency of OT according to anatomical location, gender, and age group, and to analyze the histopathological diagnosis according to the WHO classification. A total of 12.195 oral and maxillofacial biopsies diagnosed at the Oral Pathology Laboratory, Faculty of Dentistry, Central University of Venezuela, during the period 1969–2000 were studied 341 cases under the diagnoses of OT were selected. These cases were analyzed according to gender, age group, anatomical location and histopathological diagnosis. Each case was analyzed histologically according to the histological classification by Kramer et al. (1992). To study the age population, four groups were distributed ranging from 5 months to 80 years old. OT represented 2.79% from the total number of cases analyzed. 60.42% corresponded to female and 39.58% to male ($P < 0.002$). The mean age was 25.40 ± 10.42 years. According to

anatomical location, the posterior mandible was the most affected area (36.58%) ($P < 0.001$). We may conclude that odontomas constituted the most frequent diagnosis made in children, followed by the peripheral odontogenic fibroma and plexiform ameloblastoma.

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GLANDULAR ODONTOGENIC CYST, ANALYSIS OF CYTOKERATINS EXPRESSION

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Objective: Glandular odontogenic cyst (GOC) is a rare lesion that shows thickness of the lining cells constituted from the cuboidal or columnar epithelial cells including mucus or cilia. However there are various histopathological findings among this lesion. Therefore in this investigation, immunohistochemical analysis of cytokeratins (CKs) expression was performed to clarify the common pathological features of GOCs. **Methods:** Three of GOC cases were picked up from the file of the Tokyo Dental College Hospital. Several cases of radicular cyst and dentigerous cyst associated with the mucinous or the ciliated cells in their sections were used for comparison. For immunohistochemical study, 10% formalin fixed paraffin embedded sections were deparaffinized, and antigen retrieval with microwave was performed. Each of monoclonal antibodies for anti-CK 13, 18, 19 and DAB detection kit were used. **Results:** Immunohistochemically, CK19 showed positive signal in whole epithelial area except basal and parabasal layers in all cases of GOC and other odontogenic cyst. CK13 and 18 were positive in GOC and a few cases of other odontogenic cyst, CK13 was positive in intermediate layers except the basal and superficial cells with mucus or cilia, while expression of CK18 was observed in superficial cuboidal cells. **Conclusions:** Expression of CK 13 and 18 has the possibility as a marker of mucous cells differentiation of odontogenic epithelium especially such as GOC.

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EXPRESSION OF LAMININ-5 IN VARIOUS TYPE OF AMELOBLASTOMA

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Objects: Laminin-5 and alpha-6, beta-4 integrins plays an important role in the adherence of junctional epithelium to the enamel. Laminin-5 accelerates, the assembly of basement membranes, cellular adhesion and cell migration. Further more, laminin-5 expression is up regulated during the wound healing, tumor cell invasion, and dental epithelium in developing tooth germ. Laminin were also expressed in ameloblastoma, which has locally invasive and recurrence behavior, but it was not well known details of function and localization. The aim of this study was to elucidate whether immuno expression and localization of laminin-5-related tumor cell invasion and migration in each histological variant of ameloblastoma. **Methods:** Seventeen cases of specimen examined in this study were obtained from Tokyo Dental College Hospital, and included 14 ameloblastomas (follicular, plexiform, acanthomatous, granular cell, and desmoplastic types) and three complex odontomas. All specimens were fixed 10% formalin, embedded in paraffin, and sectioned. Primary antibodies used for immunohistochemistry were anti laminin-5 gamma-2 chain, polyclonal anti laminin and anti integrin beta-4.

Result and conclusions: Positive immunoreaction of polyclonal laminin and integrin beta-4 were observed as continuous thin line, surrounding all types of ameloblastoma islets, oral epithelium, and blood vessels. Immunoreaction of gamma-2 was mostly weak except internal basal lamina of junctional epithelium. On the other hand, strongly and heterogeneous positive staining of gamma-2 was observed in the both of follicular and plexiform type, especially that of concaved area. On the other hand, only weak or negative staining was recognized at the apical end of projection formation, and the basal lamina associated with stromal hyalinization area. These results suggested, expression of laminin-5 correlate formation of some variants in ameloblastoma.

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CYSTIC AMELOBLASTOMA PLEXIFORME PATTERN. CASE REPORT

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Patient from 19 years of age that presents left paramandibular tumefaction that lasts one year, does not exhibit neurological and nutritional changes. Motility of the teeth 36 and 37 is verifiable. Radiological study (CAT and orthopantomography) reveals an osteolytic image that surrounds teeth from 35 to 38, producing lytic changes on the apex. After diagnosing the plexiforme cystic ameloblastoma we proceeded to a teeth extraction (34, 35, 36, 37 and 38), resection of the body of the mandible with inferior alveolar nerve preservation. Titanium mesh filled out with iliac crest bone marrow transplant and Bio-oss[®] was collocated and intermaxillary fixation was done. Once the bone formed in mandible, the collocation of implants and fix prosthesis proceed. We present clinical and radiological images as well as the same 5 years after surgical procedure.

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FOLLICULAR-PLEXIFORM AMELOBLASTOMA. TREATMENT AND REHABILITATION

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Ameloblastoma derives from dental lamina. It occurs in 1% of all odontogenic tumors and in 1% of all tumors located in the jaws. Mostly affects the persons in the 3rd to 5th decade of life. However it can be present during embryonic period and it can stand various years asymptomatic. **Case report:** Female patient from 26 years of age presents left hemimandibular palsy as unique symptom. On the panoramic radiograph the lesion compatible with ameloblastoma that affects teeth is appreciable. There is no vestibular swelling, facial asymmetry or inflammation. Under the local anesthesia we proceeded to extraction of teeth 45 and 46 as well as to a transalveolar biopsy, which confirmed our clinical diagnostic. At histologically examination appeared epithelial cords of columnar cells and follicles of epithelial cells with hyalinized connective tissue stroma. Under the general anesthesia we performed partial mandibulectomy with exeresis of tumor using submandibular extraoral approach. At the same time we applied iliac crest bone marrow graft using titanium mesh. After surgery that passed without complications and when the bone was rebuilt, 6 months later, we collocated three fixations of the Branemark type from 18 mm. Four months later the guiding screws were put, to initiate prosthetic rehabilitation. We used transepithelial pillars Esteticone[®] from Nobelpharma. The prosthetic suprastructure was collocated with two mesial extensions.

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KERATOCYST AND WISDOM TOOTH INCLUSIVE IN MAXILLARY SINUS

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A patient of 28 years of age was sent to our Clinic due to symptoms compatibles with sinusitis maxillaries. Panoramic radiography reveals existence of wisdom tooth (18) in the sinus maxillaries. To perform extraction of this tooth we proceeded with Caldwell-Luc operation. The cyst with fibrous capsule was extirpated. It was covered with squamous epithelia, having homogenous thickness composed from 6 to 8 layers of cells and with basal stratum well defined. Small cysts, with keratinous content and parakeratinous as well as acute inflammatory infiltration, were found under the epithelia thus the diagnosis of specimen was keratocyst of sinus maxillaries.

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EXPRESSION OF NOTCH IN A CASE OF OSTEOSARCOMA OF THE MAXILLA

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Objectives: We believe that the expression profile of regulation factors of morphogenesis is closely related to the neoplastic cytological characteristics of the neoplasm and its clinical behavior. Therefore, we have examined the expression of Notch1 intra cellular domain: NICD in a case of osteosarcoma of the maxilla. **Clinical summary:** A 31-year-old Indonesian male with a chief complaint of swelling of the left maxilla was diagnosed as having an osteosarcoma. A left maxillectomy was performed. About 18 months after the operation, the patient returned with the same histopathological type of osteosarcoma. **Materials and methods:** After histopathological examination, immunohistochemical examination was carried out using anti-NICD and osteopontin (OPN: as control) monoclonal antibodies. Both antibodies were obtained from the Developmental Studies Hybridoma[®]Bank maintained by The University of Iowa. **Results and conclusions:** Histopathologically, the osteosarcoma examined had a sarcomatous stroma directly producing tumor osteoid. NICD expression was detected in the cytoplasm of neoplastic cells in the area of comparatively well-differentiated areas, containing osteoid and/or bone tissues. No expression of NICD was detected in the fibroblastic and poorly differentiated other osteosarcoma cases in our surgical files, although OPN expression was detected in almost all cells. In this examined case, the strength pattern of OPN expression was similar to that of NICD. Notch1 is one of the important regulation factors of morphogenesis. Therefore, the results suggest that Notch1 is closely related to cytological differentiation or acquisition of cytological characteristics in neoplastic cells of osteosarcomas.

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EWING'S SARCOMA IN THE MANDIBLE. A 20-YEAR FOLLOW-UP CASE

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A primary Ewing's sarcoma located in the mandible is reported. In November 1983, a 35-year-old woman presented to the Outdoor Dental Clinic of the Faculty of Odontology, University of Chile with a painful rapidly growing soft tissue swelling of the face and was accompanied by low-grade fever, suggestive of an inflammatory disease. The year before she had been treated with Tegretal[®] by a neurologist due to intense pain in the mandibular body and ramus. Six months later appeared a painful swelling in the right submandibular area, which was treated with antibiotics and antiinflammatory medicaments without results. The patient tried out with an acupuncurist and the pain diminished, but the swelling persisted. In the Diagnostic Clinic at the Odontology Faculty the initial diagnosis was chronic osteomyelitis and an exploratory puncture was performed with negative cytology. A biopsy was informed as Ewing's sarcoma. The therapeutic modalities consisting of induction chemotherapy and the diagnostic imaging features of this lesion are discussed. Modalities used included panoramic and plain films, computed tomography, and 99 mTc-MDP scintigraphy during a follow-up period of 20 years are described. Emphasis is placed on the use of a multidisciplinary team approach in the treatment of these unusual tumors. The case report covers the initial symptoms, the history, clinical, radiographic, and histologic features; and the treatment by surgery complemented with radiotherapy and chemotherapy.

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MANDIBULAR DESMOPLASTIC FIBROMA IN A CHILD

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Objective: Fibromatoses of the jaw bones in the paediatric population present a diagnostic and surgical challenge. Differentiation from malignant tumours like low-grade fibrosarcoma is of paramount importance to surgical management. The differential diagnosis lies between myofibroma, odontogenic fibroma, and the relatively rare desmoplastic fibroma. **Case report:** We present a case of a 4-year-old boy with an asymptomatic left mandibular swelling of 4 months duration. A 6 × 6-cm bony hard mass, which appeared as a well-defined multiloculated, expansile radiolucency, was noted in the left mandible. CT confirmed a mass within the ramus with a hair on end appearance causing compression of the submandibular gland and the airway. The initial radiological interpretation was of a malignant tumour, either a Primitive neuroectodermal tumour/Ewing's sarcoma or an osteosarcoma. Excision specimen revealed a fibrous mass with pushing margins composed of fascicles and bundles of bland spindle cells interspersed with hyalinized fibrous bands. Immunohistochemistry showed focal smooth muscle actin positivity, but negativity for S100, CD34 and desmin. The lack of cellularity, cellular atypia, and mitoses in the multiple sections sampled ruled out a well-differentiated fibrosarcoma, while lack of zoning phenomenon and the markedly hyalinized fibrous tissue excluded myofibroma. The differentiation from odontogenic fibroma was more difficult, but the large size and relatively short duration of the tumour together with the presence of mature fibrous tissue and lack of odontogenic epithelium was unusual and a diagnosis of desmoplastic fibroma was made. **Conclusion:** Desmoplastic fibroma is a rare neoplasm forming <0.1% of primary bone tumours. The mandible is one of the favoured sites. They resemble extra abdominal desmoid tumours, the differentiation from the latter being possible by CT. Management presents a challenge due to the young age at presentation, and the fact that curettage is associated with a high recurrence rate. Conservative excision with or without chemotherapy is advocated by most surgeons.

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ODONTOGENIC GHOST CELL CARCINOMA: REPORT OF A CASE AND REVIEW OF THE LITERATURE

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Introduction: The calcifying odontogenic cyst is a rare odontogenic tumour with both cystic and neoplastic variants. Although there have been a number of reports of carcinomas arising in odontogenic cysts there are few reports of malignant odontogenic ghost cell tumours. There have been many classifications and today still persists controversy regarding its terminology. **Objective:** We review the features of this unusual and rare tumour and report a case that was diagnosed as odontogenic ghost cell carcinoma. We discuss the differential diagnosis. **Methods:** We report a case of a 76-year-old woman that presented a 1.5 × 1.5-cm well-demarcated, unicystic radiolucency in the left maxilla associated with an apex of an impacted canine tooth. A surgical enucleation was performed. The histopathological diagnosis was odontogenic ghost cell carcinoma. Current literature available is reviewed. **Results:** The outcomes of the present review were variable. The origin of the odontogenic ghost cell carcinoma is likewise not fully known, although three patterns of development are evident on review; most commonly it appears *de novo*, less commonly occurs after the recurrence of a benign calcifying odontogenic cyst and the third is the arise from another odontogenic tumour. The biological behaviour of the odontogenic ghost cell carcinoma appears to be unpredictable. **Conclusion:** More information about this neoplasm is needed to enhance our understanding of its true biologic behaviour and metastatic potential.

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THE 'ODONTOGENIC MIXOFIBROMAS' IN PAEDIATRIC AGE: CASE REPORT AND REVIEW OF LITERATURE

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Objective: The odontogenic mixofibromas represent about 3–6% of all the odontogenic tumors. Histologically the WHO defines such pathologies as neoplasias with low cellularity. The incidence observed is between the age of 20 and 30 years, with true tendency to bony destruction, local infiltration and recidivisms equal to 25%. **Materials and methods:** The standard used for the analysis of the case are: clinical information about the patient, radiographic survey, and a specific histopathologic diagnosis. **Case report:** We introduce the case of a young patient, an 11-year-old caucasian. At the intraoral and RX-OPT examination we observed a lesion at the inferior incisive region, a dimension of 3 × 3 cm. It evolved very quickly in the two preceding months, determining displacement and rotation of dental elements vestibularly. In virtue of the young age of the patient we have decided to opt for a conservative therapy. **Conclusions:** They are more frequently observed than other neoplasias of the cephalic district in subjects of the age inferior to 10 years with a ratio equal to 7%. Finally, for us, the more suitable therapeutic approach in the cases of odontogenic mixofibromas in pediatric age, is the conservative treatment.

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CANCER CHEMOTHERAPY INDUCED AVASCULAR OSTEONECROSIS: A CASE REPORT

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The osteonecrosis of the jaws is an important complication in patients following radiotherapy to the head and neck. The osteonecrosis of the jaws can also be induced by fungal infection, trauma, herpes zoster, necrotizing sialometaplasia, and some chemicals and drugs. It has also been recognized recently, that osteonecrosis of the jaws can arise in relation to cancer chemotherapy, sometimes related to the use of bisphosphonates. We presented a patient with osteonecrosis of the jaw that appeared following cancer chemotherapy. This patient had received bisphosphonate (pamidronate and zoledronic acid) for the treatment of the generalized bone lesions of her multiple myeloma. The bisphosphonates have an antiangiogenesis effect, and also inhibit osteoclastic action and are thus helpful in managing hypercalcaemia of malignancy and metastatic bone disease. The osteonecrosis of the jaws in this patient appears to have a relationship with the use of bisphosphonates.

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ODONTOGENIC GHOST CELL TUMOUR WITH CLEAR CELL COMPONENTS: CLEAR CELL ODONTOGENIC GHOST CELL TUMOUR?

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A case of odontogenic ghost cell tumour (OGCT) with clear cell components was encountered in the mandible of a 63-year-old Korean man. The tumour revealed ameloblastomatous type epithelial components accompanied by clusters of ghost cells and dentinoid juxtaposed to the odontogenic epithelium. In addition, some areas of the tumour tissue showed sheets and islands of clear, glycogen containing epithelial cells, which were separated by a thin fibrous connective tissue stroma. Both ameloblastic and clear cells exhibited positive immunoreactivities for cytokeratin 19 and AE1/3. It is not known whether this tumour represents a clear cell change of a preexisting OGCT or a separate and distinct neoplasm derived *de novo* from the odontogenic epithelium. This tumour was given the term 'clear cell odontogenic ghost cell tumour', because it captures the clear cell components, which is one of the most prominent distinguishing features of the tumour.

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NASOLABIAL CYST: PRESENTATION OF TWO CASES

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The nasolabial (nasoalveolar) cyst is an uncommon mucus-secreting, nonodontogenic cyst that occurs in the soft tissues of the nasofacial area. It is classified as a benign developmental cyst that may arise from epithelium of the nasolacrimal duct. The lesion is usually unilateral, but may be bilateral, is located beneath the ala of the nose and occurs more frequently in females. Histologically, it is most frequently lined by a pseudostratified columnar epithelium, although both stratified squamous and cuboidal epithelium and goblet cells may be found. The nasolabial cyst should be considered in the differential diagnosis of

intranasal masses, midface infections and swelling in the nasolabial area. We report the clinical and histological features of two cases of nasolabial cyst.

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ENCAPSULATED AMELOBLASTIC FIBROSARCOMA

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Malignant odontogenic tumors of both epithelial and mesenchymal tissues are extremely rare neoplasms. Among them the malignant mixed tumor ameloblastic fibrosarcoma, is reportedly more frequent than malignant ameloblastoma. Ameloblastic fibrosarcoma has been found mainly in the mandible and it has been described more often in males than females. Histologically, the tumor consists of two components: strands and anastomosing cords of mainly columnar ameloblastic elements, and a mesenchymal component that resembles dental papilla but with cytologic atypia, increased cellularity, pleomorphism, and mitotic figures. We present a case of ameloblastic fibrosarcoma in a 19-year-old female. The patient first noticed swelling of the right side of the mandible and she was seen by a dentist who after a bone curettage prescribed antibiotics. No histological studies were made. We evaluated the patient 10 months later and the oral examination revealed swelling of the right mandible involving the molar region, however, the overlying mucosa appeared normal. The patient did not experience pain nor paresthesia. Radiographs revealed a large well-defined radiolucency that extended from the distal root of the first molar to the retro, and contained within the second and third molar and also small radio-opaque masses. Oclusal views showed prominent cortical expansion of both the vestibular and lingual plates. Microscopy examination from the biopsy disclosed a biphasic neoplasm formed of highly cellular mesenchymal component that showed hyperchromatic and bizarre pleomorphic cells with many atypical mitotic figures. The epithelial components were benign and formed by strands and islands of ameloblastic tissue. Treatment consisted in hemimandibectomy and removal of submandibular lymph nodes. This case teaches us that ameloblastic fibrosarcomas are often mistaken for benign tumors. The emphasis of biopsies cannot be underscore.

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OSTEONECROSIS OF THE JAWS ASSOCIATED WITH THE USE OF BISPHOSPHONATES. A CASE REPORT

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Objective: Osseous metastases are associated with skeletal complications, including bone pain, fractures, and hypercalcemia. Bisphosphonates are potent osteoclast activity inhibitors that can decrease skeletal-related complications. They have been incorporated into the therapy of patients with osseous metastases of various tumour types. It has been postulated that bisphosphonates may cause oral avascular bone necrosis due to antiangiogenic effect leading to inhibition of osteoclast. We report a case of osteonecrosis of the maxilla in a patient with multiple myeloma in treatment with bisphosphonates after tooth extraction, and make a review of the literature. **Patient and method:** A male diagnosed with multiple myeloma was referred to our Hospital after tooth extraction because he presented a non-healing extraction socket and exposed jawbone refractory to conservative debridement and antibiotic therapy. Biopsy of these lesions showed avascular bone

necrosis and no evidence of metastasis disease. **Conclusion:** The clinically cancer literature on bisphosphonates is almost uniformly positive demonstrating a decrease in skeletal complications. However, there is evolving concern that bisphosphonates therapy may be associated with the development of osteonecrosis of the maxilla and mandible. Research to determine the mechanism of this maxillary disease is needed to fully validate this possible link. Until then, clinicians involved in the care of patients at risk should consider this possible complication.

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MONO AND POLYOSTOTIC PAGET'S DISEASE

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Whilst Paget's disease was first described by Sir James Paget – who called it 'osteitis deformans' – in 1877, the first case involving the maxilla was not reported until 1923. The disorder consists of osseous alterations that begin with an osteoclast-mediated increase in the reabsorption rate, followed by the neo-formation of abnormally structured bone. The generally asymmetric, gradual maxillofacial alterations caused by the disease are most often located on the upper jaw, causing deformities that interfere with normal occlusion. **Case reports:** *Monostotic occurrence:* A 73-year-old, woman totally edentulous woman with a full dental prosthesis, presenting with a sore on the right temporomandibular joint (TMJ) that had not receded in 3 months. Clinical examination revealed a lower jaw protrusion. The panoramic X-ray showed anterior bilateral luxation of both condyles. Treatment consisted of repositioning the condyles. Subsequent radiological controls showed the TMJ to be in the proper position after treatment. Cranial computed tomography was likewise conducted along with laboratory tests that showed a rise in alkaline phosphatase and hydroxyproline levels in urine. Paget's monostotic disease was identified after bilateral luxation of the condyles. *Polyostotic occurrence:* A 88-year-old woman, who had been diagnosed for Paget's disease on the left femur at the age of 63. Lab tests showed high levels of alkaline phosphatase, hydroxyproline, and phosphate in urine. When she was 81 the patient suffered a polyostotic episode with substantial clinical and radiological symptoms on the upper jaw. **Results:** The vast majority of cases are asymptomatic. The disease is more commonly polyostotic than monostotic and impacts dental treatment inasmuch as it may cause the premature loss of teeth or render extraction more difficult due to hypercementosis or ankylosis. Local infection must therefore be prevented. Re-contouring surgery should be performed when the swelling causes great facial deformities, interferes with opposing teeth or normal oral function. An estimated 15% of patients with generalized Paget's disease suffer oral alterations. The disorder affects 3% of the population over 50 and 10% over 80.

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PREVALENCE OF ODONTOGENIC TUMORS IN CHILDREN AND ADOLESCENTS

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The aim of this study is to report the prevalence of odontogenic tumors in Venezuelan children and adolescents with reference to age, gender, anatomical location distribution, and histopathological diagnosis. **Methods:** From a total of 14 000 oral and maxillofacial cases diagnosed at the Oral Pathology Laboratory, Faculty of Dentistry, Central University of Venezuela, from 1969 to April 2004, 205

cases of odontogenic tumors were obtained, age ranging from 5 months to 18 years old and retrospectively histopathological analyzed according to the WHO classification by (Kramer, 1992). **Results:** Of these 205 cases, 35.44% were females and 36.95% were males. The site distribution was 44.2% in the maxilla and 31.05% in the mandible. Odontoma was the most common odontogenic tumor representing 41.9%, followed by Peripheral odontogenic fibroma accounting for 13.1%. The third most frequent diagnosis was ameloblastoma with 10.7%. Adenomatoid odontogenic tumor represents 4.8%. Ameloblastic fibroma represents 1.4%, while odontogenic myxoma, central odontogenic fibroma, and ameloblastic fibrosarcoma represents 0.48%. **Conclusions:** From this study, the odontogenic tumors were predominant in males and the maxilla was the commonest anatomical location. The most frequent odontogenic tumor was odontoma followed by peripheral odontogenic fibroma and ameloblastoma. Only one malignant odontogenic tumor was observed diagnosed as ameloblastic fibrosarcoma.

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LASER THERAPY IN ORAL MEDICINE

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The LASER term is the acronym of 'Light Amplification by Stimulated Emission of Radiation'. In the last years, the employment of the laser in medical fields has provoked remarkable interest by the investigators, also in virtue of the fact that this instrument places side by side to the therapeutic effectiveness an elevated standard of comfort for the patient (being, second our clinical experience, minimally painful). Also in dentistry, the use of the laser has begun to be interesting, in the treatment of pathologies of either soft (the mucosae and periodontium) and of hard oral tissues (restorative dentistry and endodontics). **Objective:** We intend to evaluate the clinical efficiency of laser the treatment of pathologies of soft tissues. **Methods:** Laser's effects are important to modify conditions of pathological tissues. We tested laser in oral surgery (cut's property, decontamination, bactericidal outcomes) and in oral medicine: biostimulation, at low power (1–10 mW) is one of the most important effect, because the patients' conditions of post-op improve: painless, oedema and patient's comfort. In oral medicine laser is utilized for treatment of oral aphtosis, type minor or major, because we can obtain best and fastest healing, and total painless in 10 min. Leukoplakia's lesions or lichen's oral lesions heal because laser has the possibility to cut small upper part of epithelium (photo ablation property), and to biostimulate the healing of tissues. **Results:** We analyzed the healing of oral lesions treated by laser therapy, and by traditional protocols. The effects of laser therapy is more acceptable by patients because the healing usually is fast, painless and with less oedema.

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THE PROLIFERATIVE ACTIVITY AND THE EXPRESSION OF ADHESION MOLECULES AND CYTOKERATINS IN THE HUMAN GINGIVAL EPITHELIUM

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Objective: The aims of this study were to investigate the proliferative activity and the pattern of adhesion molecules and cytokeratins expression in human clinically healthy and inflamed gingiva. **Methods:** Gingival biopsies were taken under informed consent from 38 patients undergoing gingivectomy at the dental hospital of Iwate

Medical University. These samples were studied using the immunofluorescence labeling method with antibodies of desmoglein of desmosomal cadherin molecules, integrin β 6 and integrin β 4 of hemidesmosome – relating molecules, cytokeratin (CK) 4, CK13, and CK14, which are the cytoskeleton proteins of epithelial cells. The proliferative activity was studied by the bromodeoxyuridine (BrdU) labeling method and immunohistochemical staining. **Results:** In clinically healthy gingiva, desmoglein was detected in the spinous layer of the lining epithelia, but not the junctional epithelium (JE). Integrin β 6 and integrin β 4 were confined in the basement membranes in all parts of the gingival epithelia. CK4 and CK13 were found in the sulcular epithelium (SE). CK14 was found in all parts of the gingival epithelia. BrdU positive cells were in the basal layer of the SE and oral epithelia (OE), but not in the JE, especially localized in the suprabasal layer in the SE. In inflamed gingiva, the expression patterns of adhesion molecules and cytokeratins in the pocket epithelium (PE) were similar to those in the JE. Proliferative activity was expressed in the PE with the progression of periodontitis. **Conclusion:** JE was different from SE and OE in regards to adhesion molecules and proliferative activity.

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EXPERIENCES SETTING UP A DIAGNOSTIC IMAGE-BASED PLOIDY ANALYSIS SERVICE

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Image-based ploidy analysis is reported to be the most accurate predictor of malignant transformation in oral mucosa and is suitable for routine paraffin-embedded samples. The objective is to report our experiences setting up a diagnostic service. **Methods:** Fairfield ploidy analysis system, staff training at the Norwegian Radium Hospital, Oslo. **Results:** Set up costs were 132 000 Euros, one full time laboratory staff member and 0.2 wt. diagnostic pathologist for the diagnostic workload and retrospective research/quality assurance. Approximately 10 specimens can be processed in 1 day on a routine basis. Published diagnostic criteria are not based on oral premalignancy and predictive values need to be defined in each diagnostic setting or population to define selection criteria and to advise on the implications of results. The necessary investigations to determine these variables are estimated to require 18 months work, availability of 6 mm minimum tissue, good quality clinical data and a 5-year follow up period. In its first 3 months the diagnostic service prospectively diagnosed 53 cases initially diagnosed as mild or moderate dysplasia or equivocal for mild dysplasia of which six were aneuploid, two tetraploid, and 23 diploid. Only five samples could not be analyzed the remainder are in process of diagnosis. We conclude that ploidy analysis will only be cost effective in the largest laboratories or on a referral service basis.

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DRUG METABOLIZING CYTOCHROME P450-ENZYMES IN LABIAL SALIVARY GLANDS. AN IMMUNOHISTOCHEMICAL STUDY

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We are currently investigating the interplay between saliva and oral mucosal health. The cytochrome P450 (CYP) enzymes are involved in the metabolism of drugs and other xenobiotics. CYP3A4 is the major

hepatic CYP-enzyme whereas CYP2C predominantly is an extra-hepatic enzyme. Several extra-hepatic tissues express these enzymes and are believed to participate in drug metabolism. The expression of CYP-enzymes in the labial salivary glands (LSG) has not yet been investigated. **Method:** Tissue sections of LSG with or without inflammation were used from 21 white individuals; 14 females and seven males with unknown genotypes for CYP2C9 and 2C19. Deparaffinized sections were heated in microwave oven for antigen retrieval and incubated with primary polyclonal antibodies; CYP3A4 (Chemicon, 1:1600) and CYP2C8/9/19 (Chemicon, 1: 1600). Envision + system (Dako) (CYP3A4) and Powervision + TM (ImmunoVision technologies) (CYP2C8/9/19) were used as detection systems. Substitution of primary antibodies with buffer served as negative controls. Human liver sections served as positive controls. Three oral pathologists evaluated the sections for absence or presence of immunohistochemical reactions in the tissue components. **Results:** The cytoplasm of all segments of the ductal system showed consistently positive reactions for both enzymes in all individuals. No immunoreactions were observed in acini. No difference was detected between glands with or without inflammation. Thus, LSG from healthy, unmedicated volunteers also had positive reaction for both enzymes. **Conclusion:** The ductal system of the LSG express CYP3A4 and CYP2C and may participate in the extra-hepatic metabolism of xenobiotics. *In situ* hybridization, RT-PCR or Western blots will be performed to verify the results.

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APPLICATION OF A VITAL FLUORESCENCE METHOD TO EVALUATE THE BACTERICIDAL ACTIVITY OF A CHLORHEXIDINE RINSE ON SALIVARY MICROBIOTA

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Objective: A fluorescence technique was applied for testing the *in vivo* bactericidal activity of a 0.2% chlorhexidine digluconate (CHX) rinse on salivary microbiota. The results were compared with those obtained by conventional microbiological cultures. **Methods:** Unstimulated saliva samples (3 ml) were collected from 10 subjects before and at 1 min and 1 h after rinsing the mouth with 10 ml of 0.2% CHX (Oraldine Perio[®], Pfizer, Barcelona, Spain) for 30 s. Saliva samples (2 ml) were serially diluted, and cultured on selective and non-selective media under aerobic and anaerobic conditions. The same saliva samples (the remaining 1 ml) were mixed with a fluorescence solution (LIVE/DEAD[®] BacLightTM Bacterial Viability Kit; Molecular Probes, Leiden, The Netherlands) and incubated in the dark at room temperature for 15 min. The live (green fluorescent) and dead (red fluorescent) bacteria were viewed using a Nikon microscope equipped with mercury lamp, and fluorescein and Texas Red filter sets. The count of bacteria was estimated from 20 microscope fields (100x) and the mean percentage of live and dead bacteria was calculated. **Results:** All subjects showed in the microbiological cultures a significant reduction in the salivary bacteria levels ($\geq 1 \log_{10}$) after the CHX rinse, this effect persisting up to 1 h. Applying the fluorescence technique, bacterial vitality detected at baseline ranged from 80 to 90%. After the CHX rinse, the percentage of live bacteria decreased significantly (0–2% at 1 min and 2–10% at 1 h). **Conclusion:** The vital fluorescence technique (BacLightTM) confirmed the high bactericidal effect provoked by a single CHX rinse. This technique represents a simple and rapid alternative method for the evaluation of the bactericidal activity of antiseptics on salivary microbiota.

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HISTOPATHOLOGICAL EXAMINATION OF THE HYDROXYAPATITE CERAMICS USED IN ORAL AND MAXILLOFACIAL SURGERY

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Hydroxyapatite ceramics have been used clinically in the oral and maxillofacial region as an artificial biocompatible material, which replaces bone graft substitute. We performed histopathological examination of the hydroxyapatite ceramics used in five cases of patients, after these hydroxyapatite ceramics were removed from the five cases for the reason of structural recorection. The histories of these five cases were as follows. One case received mandibular reconstruction using a pure titanium plate and the ceramics following local resection, two cases underwent reconstructive and plastic surgery of external nose deformities with the ceramics, in one case the ceramics was filled in a cavity resulting from cyst removal and in one case correction of a mandibular deformity was performed with the ceramics. The period of hydroxyapatite ceramics used in the above oral and maxillofacial region ranged from 1 year and 10 months to 8 years and 1 month. In all of the cases, bone formation was observed around or within the hydroxyapatite ceramics used in the treatment.

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USE OF TOLUIDINE BLUE DYE IN THE DIAGNOSTICS OF DYSPLASTIC LEUKOPLAKIA

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Oral leukoplakia is one of the most frequent pathological processes of the buccal cavity. The term is clearly defined, though the condition may easily be mistaken for other alterations involving white plaque-like structures. Oral leukoplakia is an established precancerous lesion. The 1991 definition of the WHO specifies leukoplakia as an opaque white lesion that does not detach by rasping and which clinically and pathologically cannot be assigned to any process other than tobacco consumption. It is a strictly clinical term unrelated to microscopic features such as the presence or absence of cellular atypia or dysplasia. The prognosis as well as treatment is established on the presence or absence of dysplasia. If there is dysplasia one can appreciate the alteration in volume and cells orientation showed as different degree, classified as light, moderate, and grave. In the last case exist the nuclear alterations with increase of mitosis at the limit of malignant transformation. But this is very questionable because lots of authors consider the leukoplakia grave as carcinoma *in situ*. Due to this it is essential that the degree of dysplasia is determined in these cases. We present practical examples of use of toluidine blue dyeing technique in order to determine which region should be elect for biopsy in the very extended lesions.

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A HISTOCHEMICAL AND IMMUNOHISTOCHEMICAL STUDY OF MUCOUS CYST, WITH SPECIAL REFERENCE TO MUCOID SUBSTANCE AND CHARACTERISTICS OF INFLAMMATION

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The study was conducted to investigate the pathogenesis of mucous cyst with reference to the histochemical and immunohistochemical characteristics of 13 cases. Lectin histochemistry and immunohistochemistry showed that mucinophages gave a strong reaction for Con A and lysozyme, and a weak reaction or negative for WGA. In contrast, the mucoid substance, salivary ducts and acinar cells were strongly to weakly reactive for WGA and negative or weakly reactive for Con A. The reactivity for the other lectins and salivary markers in mucous cyst was similar with the salivary gland tissues. These results suggested that mucoid degeneration resulted from phagocytosis by the mucinophages and the mucoid substance in mucous cyst was derived from the saliva. The cell rate of CD68-positive mucinophages was higher in mucous cyst than that in the salivary gland (control). The cell rates of CD45RO-positive T-cells and CD20-positive B cells were lower in mucous cyst than those in control. In addition, the count of mast cells showing metachromasia with toluidine blue at pH 2.5 in mucous was equal in control. For immunoglobulin-producing plasma cells, the IgE positivity rate was higher in mucous cyst than that in control, whereas the IgA positivity rate was lower in mucous cyst than that in control. These results suggest that the accumulation of mucinophages, which have phagocytotic and antigen-presenting ability, is mainly associated to the pathogenesis of the mucous cyst, in addition to a local T-cell-mediated cellular immune mechanism or to an acute allergic immunoresponse by IgE-producing cells and mast cells.

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PREVIOUS STUDY AND METHODS OF MEASUREMENT OF TOTAL ANTIOXIDANT CAPACITY OF PLASMA AND SALIVA

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Definitions: The reduction of 1–4 electrons takes place giving rise to the free radicals (FR) or to reactive species of oxygen (RSO) biologically. The reactivity and the toxicity to RSO and FR associated can be the greater contribution to the pathogenesis of many degenerative diseases. A free radical is defined as an atomic species or molecular, with one or more odd number electrons in their structure, being able to be loaded of negative, positive or electrically neutral form being extremely reactive behaving like chain reactions. An antioxidant is defined as a substance that when it presents a low concentration in comparison with the oxidizable substrate, significantly prevent or delay to the oxidation of an prooxidating substance therefore, that reduce oxidative stress. In order to avoid the damage caused by the production increased of free radicals the organism has an antioxidant defense, being the balance between the production of free radicals and the antioxidant defense what it know like the oxidative balance; when this one inclines towards the RL production, for whatever reason, the oxidative damage or stress takes place. At the moment, great number of diseases, external, polucionants agents and certain drugs have been associated to an excessive production of free radicals or to an absence of antioxidant. It has been associated to cancer, diabetes, aging and autoimmune diseases. Total antioxidant capacity (TAC) is the measurement of the amount and activity of all the antioxidants of a live substance. **Methods of measurement:** (a) The spectrophotometric analysis: being based on the inhibition by antioxidant; (b) Analysis of quimioluminiscens: based on the signal produced by the presence of antioxidant (c) Analysis of the voltametric cycle: application of a constant potential allows to registry of a curve of potential or a voltametric cycle that varies according to antioxidant. **Previous study:** In healthy patients the TAC is in plasma much greater rank than in saliva following the data a normal distribution. The values of TAC in plasma are greater than in saliva finding evident differences between averages (2.24–0.64). Do not exist correlation between the TAC of plasma and saliva is a pilot study with young patients, without pathologies associated that will serve us to establish the real size of the sample. As much in men as women the sample in patient smokers are normal and

smokers are also normal. Do not exist statistically significant relation between the TAC of saliva between men and women, although there is a tendency in the plasma. There is a statistically significant relation between smokers although does not exist as much in plasma of nonsmokers as in saliva.

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BIOLOGICAL EVALUATION OF FROZEN TEETH FOR TOOTH BANK

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The loss of tooth occurs frequently by dental caries, chronic periodontitis or dental trauma. New techniques have been constantly developed for the rehabilitation of functional dentition, which are tooth implantation and auto-transplantation. Tooth transplantation has been known to have advantages in several aspects. However, the lack of donor tooth and the short preservation period have been disadvantages in clinical use of tooth transplantation. Hence, the biological evaluation of frozen teeth may contribute to the longer preservation of teeth for use of auto- and allo-transplantation and consequently to the use of tooth bank. This study examined the biological and physical properties of frozen teeth for the purpose of evaluating whether tooth bank is clinically available. Fifty-four teeth were divided into two groups, immediate and 1 week frozen group, respectively. MTT assay and TUNEL assay were performed and the immunohistochemical staining for alkaline phosphatase was performed. Hardness of teeth was compared in two groups. As results, MTT assay showed that there was no statistical difference in two groups ($P > 0.05$). Apoptotic cells were found in both groups and no statistical difference was noticed. Alkaline phosphatase was shown in the periodontal ligaments of both groups. In both groups, the hardness showed no statistical difference ($P > 0.05$). However, longitudinal fracture was noted in 25% of frozen teeth after frozen. Taken these results, the viability of periodontal ligament was maintained by frozen environment, suggesting that tooth bank can be operable. However, the development of freezing methodology should be required for the preservation of the physical property of hard tissue.

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INFLUENCE OF PLATELET-RICH PLASMA ON BONE AND SOFT TISSUES HEALING: A COMPARATIVE STUDY

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Aim: Our objective is to evaluate the effectiveness of the autologous platelet-rich plasma (PRP) to enhance the bone density and soft tissues healing. **Materials and methods:** Thirty-eight patients who underwent a bone regeneration treatment were selected for a randomized study. The material was divided in two groups of 19 patients. In one of these groups, the bone defect was grafted with activated autogenous PRP (test group) while in the other group the use of PRP was avoided (control group). Panoramic radiographics were taken in all cases prior to surgery and 6 months postoperatively in order to determinate the percentage of newly bone formed within the grafted site. A soft tissue healing valoration was performed 7 days after the

surgery in three categories: complete healing, primary intention healing and secondary intention healing. **Results:** After 6 months the bone density increased in the grafted site. This increase was slightly higher in the test group showing a mean proportion of 9.74%. In the control group the mean proportion of newly formed bone was of 8.40%. A statistical analysis revealed a much better soft tissues healing in patients who received PRP than in control group. **Conclusion:** The use of PRP does not enhance significantly the bone density in bone regeneration treatments, but it promotes soft tissues healing by accelerating wound closure.

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PERICORONAL RADIOLUCENCY IN LOWER THIRD MOLAR: PERICORONAL PATHOSIS VERSUS DENTAL FOLLICLE

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Introduction: Removal of third molars impacted is one of the most common surgical procedures of oral and maxillofacial service. The presence of pericoronal pathology is a generally accepted reason for their extraction. Is accepted for the majority of dental community that pericoronal radiolucency of <2.5 mm in width is non-pathologic, but this evidence is limited. **Objectives:** The purpose of this study was the correlation between the facts obtained for radiography, histopathology, and clinical study to determine the prevalence of follicular cysts associated with pericoronal radiolucency in lower third molar impacted, and determine the relation with age, sex, position, location and analysis of radiographs with histopathologic evaluation. **Materials and methods:** Fifty pericoronal lesions were study on 46 patients that came to the service of Medicina Oral, Cirugía Oral e Implantología (USC) for removal of impacted third molar teeth. Information regarding the age and gender of the patient, site, and size (accompanying radiographs) of the pericoronal radiolucency, clinical symptoms, and clinical and microscopic diagnosis was entered into data base computer program for sorting and analysis. Specimens were fixed in 10% neutral buffered formalin, processed routinely, and stained with hematoxylin and eosin. **Conclusions:** On the basis of this study, the diagnosis of a dentigerous cyst should be based on: the presence of a pericoronal radiolucency histologically, fibrous tissue lined by non-keratinized stratified squamous epithelium 3, and surgically demonstrable cystic space between enamel and overlying tissue.

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FINE NEEDLE ASPIRATION (FNA) IN HEAD AND NECK PATHOLOGY. DIAGNOSTIC EFFICIENCY

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Introduction: The fine needle aspiration (FNA), is a rapid, simple technique with little risk for patients and of low costs that allows diagnosing benign and malignant lesions, as well as possible metastasis, suitable for pathologies of unknown origin. **Objective:** To verify the diagnostic efficiency of this technique in head and neck pathology. **Material and method:** A total of 310 punctions were analyzed from patients treated in the Maxillofacial Service of Complejo Hospitalario Universitario de Santiago de Compostela.

Results: The punctions were obtained from head and neck exofitic lesions. Most samples were taken from parotid glands. Within benign results, the most frequent process is reactive lymphadenitis. Concerning the malignant ones it is metastasis squamous cells carcinoma. In 135 cases, comparison between the obtained data in the FNA and the histological results obtained after biopsy was carried out, achieving a sensitivity and specificity ranging from 97 to 99%. **Conclusions:** The sensitivity, specificity and diagnostic accuracy obtained, change according to the anatomical area. FNA is especially effective in salivary glands related pathology. This is a reliable technique, but it is recommendable not to use it as the only diagnostic proof.

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FINE NEEDLE ASPIRATION BIOPSY OF SALIVARY GLANDS IN A BRAZILIAN POPULATION. A RETROSPECTIVE STUDY OF 273 CASES

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Introduction: Fine needle aspiration biopsy (FNAB) is an efficient diagnostic method frequently used for diagnosing neoplastic and non-neoplastic lesions in the head and neck region, including salivary glands. **Methods:** A retrospective study of salivary gland FNAB was carried out in the period from August 1999 to December 2002 at the Hospital das Clínicas, São Paulo University with analysis of aspects such as cytological diagnoses, gender and age. Histologic correlation was reviewed when available. **Results:** Two hundred and seventy-three FNABs were performed in neoplastic and nonneoplastic salivary gland lesions in 269 patients (153 (57%) women and 116 (43%) men), with an average age of 52 years. The epithelial tumors consisted of 162 (59.4%) cases in the most prevalent group. The pleomorphic adenoma and Warthin tumor were the most diagnosed tumors, accounting for 37% and 11% of the total, respectively. Acinic cell carcinoma was the malignant tumor most diagnosed by cytology and the mucoepidermoid carcinoma was the one that presented the most difficulty for a specific cytological diagnosis. One hundred and eighteen (44%) patients were operated on, 90 patients being histologically diagnosed as having epithelial neoplasia. For epithelial neoplasias, FNAB presented a sensitivity of 89.5%, specificity of 100%, and accuracy of 97.8%. Undetermined cystic lesions consisted of 9.8% of the cases and were shown to have great clinical importance, as 50% of the lesions operated on in this group were shown to be malignant. **Conclusions:** FNAB is an efficient pre-operative method for diagnosing neoplastic and nonneoplastic lesions in salivary glands, enabling a safer surgical approach. Surgical treatment is indicated for cystic lesions of indeterminate diagnosis.

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SOFT TISSUE REPAIR AFTER BIOPSIES AND THE USE OF PLATELET RICH PLASMA

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Some situations in oral diagnosis specially, when biopsies are conducted at the palate, represent an exposed wound, a second intention healing, and notably as slow process, bothering the patient. Given the advantages that a reduced healing period would entail, we selected 15

beagle dogs on which we simulated soft tissue biopsies on the palate, by two circular incisions, one side maintained only by clotting and the other treated with an autogenous platelet rich plasma (PRP) gel. A comparative histological study of the lesions, observed at intervals of two, four, seven, and 14 days, demonstrated that the wounds treated with the PRP achieved greater rates of healing; however, from the day 21, the results evidenced similar rates of healing for both. We may therefore conclude that the use of PRP significantly improved the lesions healing process during the initial 14 days period, time considered decisive to provide a better recovery to the patient.

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WHY ARE YELLOWISH LESIONS/CONDITIONS IN THE ORAL CAVITY YELLOW?

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Objective: To elaborate a classification of oral lesions and conditions of yellowish clinical appearance. **Methods and materials:** Lesions are grouped under the headings 'neoplasia', 'cyst', 'hyperplasia or reactive' and 'infectious' and conditions are classified as 'pigment deposit', 'protein deposit' and 'developmental disorders'. Each of these pathologies or pseudopathologies is described together with an explanation of its histological basis. **Results:** The lesions included in each group were: neoplasia: lipoma; cysts: epidermoid and dermoid cysts, lymphoepithelial cyst; hiperplasias: verruciform xanthoma; infectious: superficial abscess, pyostomatitis vegetans. The conditions were distributed as follows: pigment deposit: jaundice, carotenemia; protein deposit: amiloidosis, hialinosis cutis et mucosae; developmental disorders: accessory lymphoid aggregate, Fordyce's spots, yellow hairy tongue. **Conclusion:** A classification of clinically yellowish lesions by its nature and histological basis is suggested to ease the clinical diagnosis and to inform on the nature of this kind of lesions/conditions.

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THE QUALITY OF ORTHOPANTOMOGRAPHY IN THE CLINICAL PRACTICE

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Introduction: The radiographic exam contributes essentially to the diagnosis and planning of treatment in dentistry. The panoramic X-ray picture is one of the radiographic techniques most used nowadays. This demands from the professionals the practice of a careful technique, following some criteria of quality that permit to expose minimally the patient to ionizing radiations. **Objective:** To determine the quality of the orthopantomography in the clinical practice. **Material:** a random sample of 98 panoramic X-ray pictures, from the archives of the Dental School, University of Barcelona. **Methods:** The pictures were observed on a standard negatoscopy. The results of evaluation were classified as *excellent*, *acceptable* or *unacceptable*. The evaluation criteria were: both condyles visible; bottom of mentonian border visible; the occlusal flat should show a light curve, corresponding to the smile's line; anterior teeth not magnified, neither minimized; if the spinal column is present on the picture, it has not to be overlapped; the inferior orbital border has to be visible; symmetric position; lack of ghost images; no marks of pressure, scratches or emulsion remains on the

film; no evidence of bad revealing; good density and an adequate contrast. **Results:** None of the pictures (0%) was classified as excellent; 42 (41.16%) were considered acceptable and 56 (54.88%) were considered unacceptable. **Conclusions:** The quality of the 98 X-ray evaluated pictures was low, according to the standard criteria. However, the information can be useful, depending on the clinical situation and the precise aim of diagnosis or treatment, in each case.

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ETIOPATHOGENESIS OF BURNING-MOUTH-SYNDROME: A REVIEW AND HYPOTHESIS

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Concept: Burning-mouth-syndrome comprises 'glossodynia or glosalgia' which means pain of the tongue and 'glosopyrosis', burning sensation. Dyesthesia or paresthesia is a discomfort experience in some place of the mouth. Glosodynia is used when the entire oral cavity is involved and as overall term for practical reason. It is not an uncommon complain. **Epidemiology:** According to some authors [1] about 80% of women suffer or once have suffered from glosodynia. With a range of 40-49 years old, to male corresponded 2.9% and female 15.7% [2]. About localization: borders of the tongue 46%, dorsum of tongue 46%, lips 50% and palate 46% [3]. Another study refers male/female ratio about 1:4; ages ranged from 36 to 81 years old and mean age 60 years old. The etiology remains unknown. **Etiopathogenesis:** We establish the hypothesis that this syndrome has a psychoneuroimmunoendocrinological background, relevant in the field of autoimmune diseases. **Clinical picture:** In the present review we are centered in describing many immunologic, endocrinology, and neurologic pathways involved in the genesis of the manifestations. **Complementary explorations:** Adrenalin, nor-adrenalin, serotonin, amyelin fibers, beta receptors, histamin, brad-iquinin, prostaglandins, linfoquins, CRH and ACTH, IL-1, IL-6, IL-8, IL-10, IL-2, TNFalfa, PAF and Serotonin, TGF-B, GHRH, PRL, Adrenocorticoids, mast cells, NK. Local factors and systemic factors. **Diagnosis:** Its will be made through analyses of all factors and parameters. **Prognosis and Treatment:** We believe that in the absence of local, systemic neuroendocrinologic causative factors, we can suspect of a serious underlying psychogenic disorder and patient must be referred to the appropriated specialist.

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56 CASES OF BURNING MOUTH SYNDROME IN RELATION TO PARAFUNCTIONAL SELF-ENFLICTED DAMAGE. A PATHOGENIC THEORY

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Objective: To clinically study a group of patients with burning mouth syndrome (BMS). **Material and method:** BMS is defined as a persistent burning sensation of the mucose tissue when there is no illness present. Fifty-six cases of BMS were analyzed, studying associated illness, main symptom (length, site, profile of influence), other symptoms, parafunctional habits and recognized by the patient or observed, signs of parafunction. In both soft and hard tissue, visual analog scale, Hospital Anxiety and Depression Scale, saliva count, photographs, panoramic X-rays, and blood analysis for folic acid, B6, B12 vitamins, and iron. **Results:** BMS was more predominant in females, 42 women (75%) and 14 men (25%), as was a history of psychoemotional disorders in 26 cases

(46.4%) and parafunctional habits of the tongue or lips in 42 cases (75%). The fact that self-damage was found suggests we should develop the pathogenic theory of BMS: Predisposition (patients are predominantly female between the ages of 50–80 years with a case history of pschoemotional disorders), stress, plus precipitating factor increase of dopaminergic system motor parafunction parafunctional self-damage production of mediators irritational of the amielinical endings burning sensation parafunctional self damage burning sensation. Remodelling of the Central Nervous Systems decrease of thresholds alodinia burning sensation. **Conclusions:** The parafunctional self-damage should be taken into consideration in the pathogenesis of BMS to open up new therapeutic methods.

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ORAL REPERCUSSIONS OF SJÖGREN'S SYNDROME (SS): UPDATE IN DIAGNOSIS AND TREATMENT

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Introduction: Sjögren's syndrome (SS) describes xerophthalmia and xerostomia due to lymphocytic infiltrates of a lacrimal and salivary glands. SS may occur alone (primary SS) or in association with several other autoimmune diseases (secondary SS). The clinical features involve a wide variety of organs, including skin, eyes, oral cavity and salivary glands, and systems. Sicca symptoms can be found in a number of other disorders including rheumatoid arthritis, systemic lupus erythematosus, scleroderma and other rheumatic disorders. There is no cure for SS at present. Treatment is, therefore, directed at relief of symptoms. Muscarinic agonists (pilocarpine) may be used for treatment of dry mouth and eyes. **Objectives:** To review the latest advances in SS and its relationship with the oral cavity. To evaluate the results obtained from the study of a group of patients affected by SS. **Literature review and clinical study:** The concepts and oral implications of SS are reviewed. Therapeutic possibilities and possible risks are studied from the odontological point of view. The literature published in the last ten years, concerning SS and its influence on oral health, is systematically reviewed. The results reported in the literature are compared with the results obtained in a group of 50 patients diagnosed with SS, controlled by the Unit of Rheumatology of the Hospital de la Santa Creu i de Sant Pau, in Barcelona. These patients are submitted to an oral exploration and a study protocol. **Conclusions:** The patients with SS need continuous dental control to avoid the oral complications of the illness. One of the most important elements to consider is the stimulation treatment of the salivary secretion.

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MALIGNANT MIXED TUMOR OF THE PAROTID GLAND (CARCINOMA IN PLEOMORPHIC ADENOMA)

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The pleomorphic adenoma is the most frequent salivary neoplastic lesion being predominately located in the parotid gland. Usually is an asymptomatic during a long period of time, its growth is slow and the diagnostics is possible after few years of its start. The carcinoma in pleomorphic adenoma develops in 3–4% due to malignization of its epithelial component. **Case Report:** Caucasian male, 66 of age, was attended for presenting right side facial palsy lasting 3 months. At the clinical examination we discover a small node in the right preauricular region that was 12 years of evolution. Recently it started with pain.

The CAT, ultrasound and sialography were performed confirming the existence of parotid gland tumor. After surgical intervention which consisted from radical parotidectomy and radical neck dissection, histological study revealed presence of carcinoma in the pleomorphic adenoma and metastatic changes in 21 lymph nodes, vascular thrombi and perineural infiltration. Six months after the intervention appeared generalized pruritus due to subcutaneous metastasis. Three months later pleural infiltration with cancer occurred and patient died.

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CASE REPORT OF UNUSUAL APPEARANCE OF PALATE PLEOMORPHIC ADENOMA WITH PERINEURAL INVASION AND FOCAL ATYPIA

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Introduction: Pleomorphic adenoma is most frequent salivary gland neoplasia although its appearance in minor salivary glands is unusual.

Material and method: We present a case of female patient that have had a palatal mass with sinus occupation, lesion very compatible with pleomorphic adenoma. **Clinical case:** Woman from 42 years of age remitted to our Clinic due to presence of palatal tumor that at CAT and NMR revealed possible bone invasion and sinus infiltration. She was operated using transmaxillary approach through Le Fort I osteotomy. Tumor extirpation and posterior maxillary reposition were performed. The histological examination revealed presence of pleomorphic adenoma with atypical focal signs and invasion perineural. **Discussion and conclusions:** Although it is described that only 3–5% of pleomorphic adenomas produces malignization toward carcinoma, the presence of sinus occupation, extension of tumor mass and changes in histological nature of tumor, indicate a strong progression to malignant lesion and should be considered strongly at the time of choice of treatment.

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A CASE OF MARKED ONCOCYTIC METAPLASIA IN ADENOID CYSTIC CARCINOMA

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Introduction: Focal or marked oncocytic metaplasia has been noted in some salivary gland conditions (oncocyctosis, oncocytic myoepithelioma, oncocytic acinic cell carcinoma, oncocytic mucoepidermoid carcinoma, etc.). However, no case reports have previously described marked oncocytic metaplasia in adenoid cystic carcinoma. We present the first case of marked oncocytic metaplasia in adenoid cystic carcinoma. **Case report:** A 56-year-old Japanese female was admitted with swelling in the left submandibular region. A submandibular tumor measuring 35 × 30 × 10 mm in size was resected. Histologically, most tumor nests displayed typical features of adenoid cystic carcinoma arranged in tubular – cribriform patterns without fibrous capsule. Tumor nests displayed marked invasion into normal salivary gland tissues and surrounding connective tissues with stromal hyalinization. Substantial perineural and perivascular infiltration was apparent. Some markedly eosinophilic areas were apparent in this tumor. Eosinophilic nests comprised oncocytic cells with abundant, finely granular cytoplasm. However, morphological nuclear changes of oncocytic cells were not observed. Oncocytic tumor cells were strongly positive for mitochondria, pan-cytokeratin immunoreactivity and phosphotungstic acid-

hematoxylin (PTAH) staining. The present case displayed partial oncocyctic changes in the tumor. Although we have to carefully diagnose with other oncocyctic lesion on sampling specimen. The present case suggests the existence of oncocyctic adenoid cystic carcinoma cases totally or almost totally comprising oncocyctic tumor cells.

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PLEOMORPHIC ADENOMA: A CASE REPORT

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The pleomorphic adenoma is a benign neoplasm of salivary glands in which the epithelial element is neoplastic and the other histologic components represent stroma metaplastic with mucoide tissue areas, myxoid or chondroid appearance. It represents 70% of all neoplasm of benign salivary glands and 90% of neoplasms of salivary glands. One appears mainly in parotid gland (53–77%), submaxillar gland (44–68%), sublingual gland (0.3–1%), and in the minor salivary Glands (38–43%). A clinical case of a masculine sex patient, 48 years of age was referred to the Dentistry Department UAT. The extraoral clinical examination showed an increase of billowed volume and a soft slightly firm swelling was observed in the right side of 12 × 6 cm. The intraoral examination revealed that the patient had an increase of asymptomatic volume in the cheek of firm consistency of approximately 25 years of evolution. Routinary X-rays were taken AP and an ortopantomographic, which did not show without any changes being observed radiographically. The presumptive clinical diagnosis was lipoma. The patient was put under conservative surgery and underneath regional anesthesia, approaching the injury by the cheek mucosa eliminating the neoplastic weave. The neoplasm tissue was processed with routinary histological techniques for microscopic interpretation. The histopathology diagnosis was of Pleomorphic Adenoma. After surgery, and keeping track of the patient for a period of 6 months there was no recurrence and normal evolution persisted. The pleomorphic adenoma is not too frequent in minor salivary glands, it does not present a high degree recurrence and the risk of malignant transformation happens in 5% of all the cases. The patient is kept under clinical control every third month.

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SUBLINGUAL SALIVARY GLAND IDIOPATHIC HYPERPLASIA IN TOTAL OR PARTIAL EDENTULOUS PATIENTS

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Sublingual salivary gland idiopathic hyperplasia (SSGIH) is characterized by a unilateral or bilateral symptomless enlargement, which occurs at the floor of the mouth of patients with total or partial absence of lower molars. We conducted a comparative study in order to evaluate the possible factors associated to its development. A number of 58 patients, total or partially mandible edentulous, from the Service of Oral Diagnosis at the University of São Paulo were selected and divided into study group, composed by 28 patients who presented SSGIH and 30 patients, control group, without this alteration, assembled according to gender and age. The etiological features analyzed were: medication, systemic diseases, tobacco, alcohol, xerostomia, functional alteration and a possible prosthesis wear. Data were analyzed through chi-squared and Fisher test, and the statistic significance established to $P < 0.05$. Six patients with SSGIH, randomly selected, were submitted to punch biopsy and mandible occlusal

radiographs; three were diagnosed as chronic sialadenitis, one as sclerosant sialadenitis and two revealed normal characteristics; radiographs did not present any significant event. We concluded that the features analyzed were not statistically associated to SSGIH occurrence and histopathological examinations revealed that such hyperplasias are non-tumoral, where surgery is not required. Nevertheless all professionals must be aware since SSGIH may clinically resemble neoplastic processes.

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DRUG METABOLIZING CYTOCHROME P450-ENZYMES IN LABIAL SALIVARY GLANDS. AN IMMUNOHISTOCHEMICAL STUDY

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We are currently investigating the interplay between saliva and oral mucosal health. The cytochrome P450 (CYP) enzymes are involved in the metabolism of drugs and other xenobiotics. CYP3A4 is the major hepatic CYP-enzyme whereas CYP2C predominantly is an extra-hepatic enzyme. Several extra-hepatic tissues express these enzymes and are believed to participate in drug metabolism. The expression of CYP-enzymes in the labial salivary glands (LSG) has not yet been investigated. **Method:** Tissue sections of LSG with or without inflammation were used from 21 white individuals; 14 females and seven males with unknown genotypes for CYP2C9 and 2C19. Deparaffinized sections were heated in microwave oven for antigen retrieval and incubated with primary polyclonal antibodies; CYP3A4 (Chemicon, 1:1600) and CYP2C8/9/19 (Chemicon, 1: 1600). Envision + system (Dako) (CYP3A4) and Powervision + T (Immunovision technologies) (CYP2C8/9/19) were used as detection systems. Substitution of primary antibodies with buffer served as negative controls. Human liver sections served as positive controls. Three oral pathologists evaluated the sections for absence or presence of immunohistochemical reactions in the tissue components. **Results:** The cytoplasm of all segments of the ductal system showed consistently positive reactions for both enzymes in all individuals. No immunoreactions were observed in acini. No difference was detected between glands with or without inflammation. Thus, LSG from healthy, unmedicated volunteers also had positive reaction for both enzymes. **Conclusion:** The ductal system of the LSG express CYP3A4 and CYP2C and may participate in the extra-hepatic metabolism of xenobiotics. *In situ* Hybridization, RT-PCR or Western blots will be performed to verify the results.

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SIALOLITHIASIS: AN UNUSUALLY LARGE NUMBER OF SALIVARY STONES IN MINOR SALIVARY GLANDS

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Introduction: Salivary gland calculi (sialolithiasis) is the most common disease of salivary glands. It is estimated that it affects 12 in 1000 of the adult population. Males are affected twice as much as females, children are rarely affected. Sialolithiasis accounts for more than 50% of diseases of the large salivary glands and is thus the most common cause of acute and chronic infections. More than 80% occur in the submandibular gland or its duct, 6% in the

parotid gland, and 2% in the sublingual gland or minor salivary glands. When minor salivary glands are involved they are usually in the buccal mucosa or upper lip, forming a firm nodule that may mimic tumour. **Case report:** This case report describes a patient, a 67-year-old man presented at the Servicio de Estomatología del Hospital General Universitario Gregorio Marañón following referral by his general dental practitioner, presenting with an unusually large number of salivary stones in minor salivary glands, in the upper lip. An upper occlusal radiograph showed the mass to be radiopaque. A diagnosis of bilateral salivary calculus in minor salivary glands was made and at a subsequent appointment the calculus was removed under local anaesthetic with sharp dissection. This numerous calculus were measured to be 2 mm long along its greatest length, and 1 mm long in the smaller length. Clinically they are round or ovoid, some are rough and some are smooth, and of a yellowish colour. **Discussion:** The exact aetiology and pathogenesis of salivary calculi is largely unknown. Genesis of calculi lies in the relative stagnation of calcium rich saliva. They are thought to occur as a result of deposition of calcium salts around an initial organic nidus consisting of altered salivary mucins, bacteria and desquamated epithelial cells. Sialography is thus useful in patients showing signs of sialadenitis related to radiolucent stones or deep submandibular/parotid stones. Sialography is, however, contraindicated in acute infection, in significant patient contrast allergy, and is not useful in minor salivary glands. There are various treatment modalities available for management of salivary gland calculi depending on their site and size. If the gland has been damaged by recurrent infection and fibrosis, or calculi have formed within the gland, it may require removal.

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PLEOMORPHIC AND MYOEPIThELIAL ADENOMAS IN THE PALATE: A COMPARATIVE STUDY

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Introduction: Pleomorphic adenoma was described by William in 1984 to be a tumour comprising both epithelial and connective tissue. Myoepithelial adenoma was described by Sheldon in 1943 as a type of mixed tumour in which myoepithelial cells prevail. The frequency and main characteristics of the two types of tumour are determined in this study, which focuses on palatal locations where their clinical appearance is similar. **Case reports:** *Pleomorphic adenoma:* A 20-year-old woman presented with a slow-growing palatal tumour that had been forming for a full year without causing particular discomfort, other than the sensation of having something on her palate. Treatment consisted in surgical removal of the lesion. No relapses were observed in follow-up examinations. *Myoepithelial adenoma:* A 25-year-old woman presented with a slow-growing palatal tumour that had been forming over a 6-month period without causing particular discomfort. The tumour was surgically removed and no recurrence was observed 18 months after the intervention. **Results:** From 9 to 23% of the tumours of the salivary glands, which account for 3–5% of all head and neck tumours, are found in the minor salivary glands. Over 50% are located in the palate, 15% on the lips, 12% on the buccal mucosa, 5% on the tongue and 5% on the bottom of the mouth. Pleomorphic adenoma accounts for 42.9% and myoepithelial adenoma for 1% of all tumours of the major and minor salivary glands, and 26% of these adenomas are located on the palate. Myoepithelial adenoma is regarded to be more aggressive and may mutate to a malignant myoepithelioma, in particular where plasmacytoid tissue prevails, a circumstance which is, moreover, more common in the minor salivary glands.

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NECROTIZING SIALOMETAPLASIA. CLINICO-PATHOLOGICAL CASE REPORT

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Necrotizing sialometaplasia is an uncommon, benign, self-limiting destructive inflammatory lesion of the minor and major salivary glands. The commonest site of occurrence is the hard palate. Usually begins as a palatal swelling which rapidly becomes a deep ulcer. A great number of potential predisposing factors have been described, including local trauma, anesthetic injections, upper respiratory tract infections, previous surgery, adjacent tumors and bulimia. It has been suggested that these factors may compromise the blood supply to the affected glands. However many cases occur in the absence of known predisposing factors. **Case report:** A 21-year-old woman was admitted to our Department with two deep ulcers (3 × 1 cm and 2 × 1 cm) located on both sides of the midline of the hard palate. The patient related that the process began like a painful swelling in the palate that in three days developed the ulcers. Neither hematologic nor radiographic examinations showed pathological features. An incisional biopsy was performed and the histopathological findings were consistent with the diagnosis of necrotizing sialometaplasia. The lesion healed spontaneously without treatment in 8 weeks. The clinicopathological features of this condition are discussed, emphasizing that the importance of this lesion rests in its similarity, both clinically and microscopically, with malignant lesions that can arise in the palate. The biopsy is mandatory in order to rule out these neoplasms.

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CLINICAL AND ANTIMICROBIAL ASSESSMENT OF A TREATMENT FOR XEROSTOMIA

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Introduction and objectives: Saliva plays a major role in the maintenance of oral structures and functions. Decreased saliva secretion leads to the emergence of clinical symptoms causing a loss of patient's quality of life (dry mouth, discomfort, speech and swallowing difficulties, etc.). Concomitantly appearance of several disorders involving infectious agents also increases (dental caries, periodontal disease, candidiasis, etc.). The aim of this study was to evaluate the effectiveness of Xerolácer® (triclosan, fluoride, vitamin E, dipotassium glycerinate and excipient for xerostomia) in improving the quality of life of patients with xerostomia, and its antimicrobial action. Biotène® (salivary enzymes substitute) was used for comparison purposes. **Materials and methods:** A total of 30 patients suffering xerostomia for over three months and a low salivary flow rate (unstimulated sialometry < 0.2 ml/min and stimulated sialometry > 0 and < 1 ml/min) were included. The patients were randomized into two groups for associated treatment (toothpaste and mouthrinse) on a double-blind, cross-over basis for 2 weeks with Xerolácer® and Biotène®. The primary endpoint was the symptom dry mouth. Secondary endpoints comprised: oral comfort, nocturnal dry mouth, speech difficulties, swallowing difficulties and taste alterations. All symptoms were rated by visual analogue scales (VAS). Simultaneously a microbiological study was performed in order to determine the antimicrobial action of both products on microorganisms involved in dental caries and periodontal disease as well as on *Candida albicans*. This was performed by determining both the minimal biocidal and minimal inhibitory concentrations (MBC and MIC). **Results:** Both treatments significantly improved dry mouth and the rest of xerostomia symptoms considered globally. No significant differences between treatments were detected. Concerning the antimicrobial action, Xerolácer® exhibited higher antimicrobial activities (MBC, MIC) than

Biotène®. **Conclusion:** Xerolácer® improves the oral symptoms in patients with xerostomia, and moreover acts against the main microbial pathogens commonly involved in the oral diseases characteristic of such kind of patients.

128 RADIOINDUCED XEROSTOMY. PROTOCOL TO FOLLOW

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To show the changes that happens in the buccal cavity by consequences of the radiotherapy. **Method:** We realize an evaluation previous to the radiotherapy treatment in those patients that present head and neck cancer. **Results:** One of the immediate effects of the radiotherapy is the reduction of the production of saliva. The xerostomy is a quantitative and quality alteration produced by the effect of the radiation on the saliva gland. The amount of the saliva fluid without stimulus that is under 0.1 ml/min is considered as a xerostomy indicator (normal amount of saliva fluid is 0.3–0.5 ml/min). The symptoms and signs of xerostomy are: dryness, ardour sensation, fissures in the mouth, changes in the surface of the tongue, difficulty to use dentures and increase of liquid consume. It appears 2 weeks after the treatment and it decrease progressively with the progress of the treatment. With dose up to 30 Gy is practically impossible to produce saliva post-stimulation. The damages occur at a histological and biochemical level. The level of dysfunction is in relation with the radiation dose and with the volume of glandular tissue included in the irradiated area. **Conclusions:** We need working with a multidisciplinary team to treat this kind of patients. All the patients with cancer should be analyzed orally before starting with the radiotherapy treatment. The dental treatment of the lesion localized in the oral cavity is primordial to minimize the oral complications.

129 ESTABLISHMENT OF HUMAN PLEOMORPHIC ADENOMA CELL LINES BY HTERT GENE TRANSFECTION

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Objective: To obtain immortalized cell lines of pleomorphic adenoma (PA) for studying histodifferentiation of this unique salivary gland tumor. **Methods:** Cultured cells (four PDLs) from a PA occurred in parotid of a 74-year-old female were infected with hTERT gene, which encodes a catalytic subunit of the telomerase holoenzyme, using a retrovirus vector, pLXIN-hTERT. After the selection with puromycin, the cells were subcultivated and prepared for morphological, immunohistochemical and molecular analyses. **Results:** The PA cells transfected with hTERT gene were maintained over 200 PDLs, while parent cells entered the crisis state between passage 6 and 10. TRAP assay showed no telomerase activity in the parent cells but high activity in the hTERT transfected immortalized cells. Immunohistochemically, the immortalized PA cells were positive for cytokeratin, vimentin, lactoferrin, lysozyme and S-100 protein. Additionally, the immortalized PA cells expressed mRNA of pleomorphic adenoma gene 1 (PLAG1), which is known to be expressed in PA. **Conclusions:** The immortalized PA cells with both epithelial and myoepithelial characteristics may present a novel in vitro cell model for the studies of the regulatory mechanism of cellular differentiation of PA.

130 PREVALENCE OF ORAL MUCOSA PATHOLOGY IN PATIENTS OF A HEALTH CENTRE OF BARCELONA

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Patients who ask for dentistry service usually complaint about toothache or caries, few times they complaint about a lesion on their oral mucosa. It will be interesting to know the prevalence of oral mucosa pathology in patients of a health centre of Barcelona. **Objectives:** To determine the prevalence of oral mucosa lesions and their relationship with tobacco, alcohol, medical treatments and dentures. (2) To analyse whether to wear a denture is a risk factor for oral lesions, in order to establish preventive measures and treatment. **Study design:** The study was carried out in patients of a health centre of Barcelona. We examined 200 patients from November 2003 to March 2004. The patients were asked to answer a clinical protocol (anamnesis and oral mucosa exploration). **Results:** A 60% were women and the rest were men. The percentage of tobacco smokers was 32.1% and 19.2% was denture wearers. The latter had higher prevalence of oral mucosa lesions. The data were similar to other bibliographic reference. **Conclusions:** The prevalence of oral mucosa lesions in our patients shows the importance of examination periodically the oral cavity and dentures to establish a correct diagnosis and treatment.

131 SCREENING OF ORAL PATHOLOGIES IN INHABILITATED PATIENTS

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Better socio-economic conditions, great progress in prevention and care of human health have increased life expectancy of inhabilitated population. Nowadays oral health is improved in inhabilitated people also for diffusion of prevention techniques. Besides inhabilitated people frequently show mucosal lesions in the oral cavity: candidiasis, vesiculo-bullous diseases, oral mucositis, precancer lesions and stomatopyrosis. Our study had the aim to value incidence and prevalence of oral pathologies in inhabilitated patients. Our aim was to define prevention of oral health programs also. In our group of patients edentulous people account for 43.8%, and we have observed reduced oral hygiene, even though women tend to take better care of their teeth. Results of our work confirm that old people will require greater attention and skilled management via multiple specialist treatment and medical problems.

132 ORAL PEMPHIGUS VULGARIS. ABOUT TWO CASES

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Introduction: Oral pemphigus is an autoimmune bullous mucocutaneous disease that affects both genders equally, and usually appears at 5th–7th decades of life. The most common type is Pemphigus Vulgaris. More than a half of patients initially presents lesions involving the oral cavity preceding the skin lesions. We present two cases in which the diagnostic was based on their incipient oral lesions. **Case 1:** A 51-year-old woman was sent by her dentist complaining of oral erosions, which does not respond to periodontal treatment. She had anaemia and proteins in urine, but no other systemic disease. A diagnosis of *Desquamative Gingivitis* was done on the basis of the evolution and the aspect of the mild erosive lesions at the gingiva. Traumatic brushing

cause was rejected. We decided to take an incisional biopsy and direct immunofluorescence. The definitive diagnosis is oral pemphigus, actually under periodic control. **Case 2:** A 37-year-old man was sent to us presenting oral bleeding and painful ulcers in the oral cavity since last month. He presents other lesions in armpit, scalp, neck and penis. Our clinical diagnosis was *Blistering disease*, and the biopsy and direct immunofluorescence confirms an oral pemphigus diagnosis. The treatment elected was topical and systemic corticosteroids. One month later the episode was controlled, and the corticotherapy was gradually reduced. Actually is under periodic control. **Conclusion:** When a patient presents oral blisters or desquamative gingivitis, is important thinking about an oral pemphigus as a differential diagnosis, even when no skin lesions are present. We can confirm or exclude this diagnosis with a biopsy and a direct immunofluorescence. If we establish early the correct management of this disease, the prognosis is quite better.

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THE GRANULAR CELL MYOBLASTOMA. REPORT OF TWO CASES

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Objective: The granular cell myoblastoma (granular cell tumor) is a fairly common soft tissue lesion and more than one half of the reported cases are described on head and neck region. Within the mouth, the tongue is the most common site. Must be distinguished from squamous cell carcinoma. **Method:** Two cases of granular cell tumor in the tongue are reported. Two males of 29 and 58 years old with elevated, painless and indurated lesions on the tongue dorsum. The evolution of both lesions was different, being one case six month and ten years the other one. **Result:** Histopathology of both cases was of a poorly circumscribed and unencapsulated tumor. The lesion was composed of large cells with distinctive granular, eosinophilic cytoplasm with S-100 protein immunoreactivity. Both diagnoses were myoblastoma or granular cell tumor with marked pseudoepitheliomatous hyperplasia of the overlying epithelium in one of them. **Conclusion:** The myoblastoma was described in 1926 by Abrikossoff. Since then, its histogenesis has been controversial, suggesting derivation from muscle fibers, fibroblasts, undifferentiated mesenchymal cells and peripheral nerves. This last hypothesis was suggested after finding frequently close association between granular cell tumors and peripheral nerves. In addition electron microscopy and immunohistochemistry showed that the granular cell tumor had schwannian features. It can be remarked that the pseudoepitheliomatous hyperplasia is very frequent and it has lead to wrong diagnosis of squamous cell carcinoma.

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DETECTION OF CANDIDA Sp IN ORAL LEUKOPLAKIA

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Yeasts have been isolated in a high proportion of cases of oral leukoplakia (OL). The purpose of this study was to identify the prevalence of *Candida* sp. in OL lesions in a group of venezuelan patients. Thirty cases clinically diagnosed as OL and histopathological as hyperorthokeratosis, hyperparakeratosis, acanthosis and mild epithelial dysplasia were selected for the present study. For *Candida* sp. detection, histochemical study (PAS, Grocott) was

performed. The microbiological analysis was carried out using two clinical samples: oral concentrated rinsing with 10 ml of sterile water and swabbings from the lesions. These were placed in Sabouraud dextrose agar plates with chloramphenicol. Afterwards, these were incubated at 37°C for 48 h. In the positive cultures macro and microscopic examination was conducted for yeast evaluation and the prompt tests to identify filamentous and chlamydospores for the detection of *C. albicans*. The API 20AUX (Biomerieux) was used for non-*albicans* sp. identification. From 20 OL evaluated patients, 14 samples were positive to *Candida* by histochemical analysis. In addition, *Candida* was present in the saliva of all studied patients, however, it was isolated in only seven cases. *Candida albicans* was the predominant sp. in the scraping samples, while other sp. were identified from the oral rinsing concentration (*guilliermondii*, *parapsilopsis*). OL can be associated with chronic infection of the oral mucosa by *Candida* sp.

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GRANULOMATOUS FOREIGN BODY REACTION OF OROFACIAL TISSUES IN PATIENTS TREATED WITH SYNTHETIC POLYMERS IMPLANT MATERIALS

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Numerous implant materials have been developed for cosmetic enhancement; therefore, biological, natural, autologous fat, silicone and biopolymers have been used for facial soft tissue augmentation. Although, the effect could be temporary for natural materials (collagen, autologous fat), several side adverse effects have been documented after silicone or polymers injections. The aim of the present study is to describe the clinical and histopathological findings in four cases of granulomatous reaction after injections with biopolymers in facial tissues. Four female patients, age ranging from 30 to 54 were clinically assessed. Surgical removal and histopathologic examination was also carried out for definitive diagnosis. Clinically, all exhibited swelling, erythema and nodules or papules in the affected area. All patients referred a recent injection or implant with biopolymers for cosmetic reasons. Surgical excision was then planned in all patients. Histopathologically, all the cases showed a granulomatous formation and inflammatory reaction. We may conclude that the use of polymer injections for lip and facial augmentation induces a variable granulomatous inflammatory foreign body reaction, causing disfigurement or extensive surgical removal in severe cases.

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A RETROSPECTIVE STUDY OF ORAL LEUKOPLAKIA ASSOCIATED TO TOBACCO CONSUMPTION

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Aim: The purpose of this study was to retrospectively analyze the OL diagnosed cases and to correlate them with tobacco use in a Venezuelan population. **Materials and methods:** A total of 139 patients were selected with the clinical diagnosis of OL. We analysed histopathologically 50 cases ($n = 37$ patients) with epithelial dysplasia (ED), classified as mild (MLD), moderated (MD) and severe (SD). Data from gender, age group, anatomical location and tobacco consump-

tion was recorded. **Results:** A total of 139 patients with clinical diagnosis of OL were diagnosed (139/1056 = 13.16%). Oral epithelial dysplasia was histopathological diagnosed in 37 patients (37/139 = 27%) and 15% of these presented ED (21/139) related to tobacco use. Twenty-one (57%) of them exhibited MLD, 14 (38%) were MD and 2 (5%) were SD. Patients with MLD (38%), were associated to tobacco use. According to the anatomical location, the most common site was the alveolar mucosa: 13/37 (35%) in patients with ED. No statistical significant differences were observed between anatomical site and tobacco use, in patients histopathologically diagnosed with ED ($P = 0.2721$). The predominant age group was between 51 and 60 years old. No statistical differences between gender and tobacco use were observed, however, a slight predilection for males was noted. **Conclusions:** From this study, we may conclude that MLD was the most histopathological diagnosis correlated with OL. There was a slight male predilection, among 51–60 years of age. The most common anatomical site was alveolar mucosa and tobacco consumption was strongly associated to OL and MD.

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PROTHESIC ESTOMATITIS. ACTUALIZACIÓN

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Introduction: Prothesic estomatitis is a disease that is difficult to control in edentulous patients. Its pathology involves different predisposing factors, of which the presence of *Candida* is seen in a higher degree. We describe the *treatment* of the patient and the difficulties of the current treatments to remove fungic residues from the prothesis and oral mucosa. **Material and method:** We analyze the predisposing factors for prothesic estomatitis and the methods to control them. The update data are created through the review of indexed articles, whether statistic, *in vivo* or *in vitro* studies, presenting the most updated studies regarding this issue. **Conclusions:** Oral and personal hygiene habits in patients who wear removable prosthesis are the main methods to avoid this pathology. Once it appears, we can control the patient with hygienic means and anti-fungal agents, but we must be aware of the therapeutic limitations in the *Candida* reservoirs in the prosthesis.

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PYOGENIC GRANULOMA VERSUS PERIPHERAL GRANULOMA OF GIANT CELLS

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Introduction: Pyogenic granuloma is a very common lesion, mostly located on the gum, although it can be also be found in lips, tongue and cheek mucosa. Its growth tends to be limited and usually affects the anterior maxillary area. The peripheral granuloma of giant cells is a tumor, generally asymptomatic, which emerges from the gum or the alveolar crest. It is predominantly situated on the lower jaw and specifically on the molar area. Phenomena of bone metaplasia can be found in its histopathology. The aim of the current paper is to review the most relevant diagnosis criteria to differentiate these two entities. **Clinical study:** The authors present a patient with a clinical diagnosis of pyogenic granuloma, which after removal and later anatomopathological study, was labeled as a peripheral granuloma of giant cells. **Conclusions:** It is possible to misdiagnose the two entities. Consequently, it is necessary to do a systematic histological exam of each tumor and lesion, in order to get an accurate diagnosis.

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CHRONIC ULCERATION OF THE ORAL MUCOSA. CLINIC CASE

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We review etiopathogenesis of chronic ulcers of the oral mucosa and the different treatment options and prognosis. The patient is a 60-year-old woman with a clinic history of depression of long time of evolution treated with antidepressives, arthrosis, and stomach herniation. The oral symptoms began 3 years ago with a burning sensation localized in the borders and the top of the tongue. The exploration showed a whitish spot in the right margin of the tongue and mild erythema in the top. The clinical diagnosis was oral burning syndrome versus a possible lichenoid reaction and for the moment she only received psychologic support and oral rinse with an alcalin solution. Next visit, 15 days later, showed an ulcer on the right border of the tongue, so a biopsy was performed in order to have an histopathologic diagnosis which result: chronic inflammatory infiltrate with parakeratosis. She was treated with topical corticosteroids. In posteriors controls, the lesion suffer cyclic exacerbation and pain and did not solve at all with topical, systemic and intralesional corticosteroids, so we performed a second biopsy which include the hole lesion and the histology showed moderate-severe dysplasia. We would like to emphasize the possibility of a histologic dysplasia in chronic ulcers of the oral mucosa that did not solve with common/empiric treatment.

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WHITE SPONGY NEVUS: CASE REPORT AND DIFFERENTIAL DIAGNOSTICS WITH OTHER ORAL LESIONS

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White lesions of oral mucous routinely are diagnosed as Candidiasis, lichen planus or leucoplakia; however the other entities although occur very infrequent, that have similar clinical signs, should be taken to consideration. White spongy nevus is a rare genodermatosis, autosomic dominant, belonging to the group of 'keratin change diseases'. It is benign disease that manifests itself as white plaques, localized throughout the oral mucous and less frequently in the esophageal and genital mucous. We present a new case of this rare lesion discussing the differential diagnostics and treatment possibilities considering its benign nature and small chances of malignization.

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PREVALENCE OF ORAL MUCOSAL LESIONS OF PATIENTS DIAGNOSED IN THE CENTRAL LABORATORY OF ORAL HISTOPATHOLOGY 'DR PEDRO TINOCO' OF THE FACULTY OF DENTISTRY, CENTRAL UNIVERSITY OF VENEZUELA DURING THE PERIOD 1968–2004. PRELIMINARY RESULTS

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This research is intended to assess the prevalence of lesions affecting the oral mucosal, through a retrospective study of case diagnosed in the Central Lab of Oral Histopathology 'Dr Pedro Tinoco, Faculty of Dentistry, Central University of Venezuela, during the period

1968–2004. A cross and descriptive retrospective study was made (Prevalence) reviewing a total of 7000 micro-histories to obtain the information stated during the period 1968–1987, being able to determine that 2251 (32.1%) of these corresponded to the pathology to study. This data was analyzed according to a histopathology diagnose, age, sex, and anatomic location. The most frequently diagnosed pathology was leucoplakia ($n = 343$; 15.2%), followed by denture-induced fibrous hyperplasia ($n = 290$; 12.8%) and fibroma ($n = 238$; 10.5%). The greatest prevalence of age in the group between 20 and 29 years ($n = 417$; 18.5%). The female sex was the most predilect ($n = 1545$; 68.6%). The most frequently affected anatomic location was the maxilar gingiva ($n = 319$; 14.1%). Twenty-four cases of paracoccidioidomycosis were reported (1.0%) of which all of them affected the male sex. Our results evidence the need to assess from time patients with leucoplakia lesions, given the potential of malignant transformation of the same and patients bearing prosthetics.

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DISEASES OF HANDS, FOOT AND MOUTH. COXSACKIE VIRUS

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Diseases of hands, foot and mouth occur generally in children between 6 months and 5 years, is related to virus Cocksackie 16. Is a benign disease with a develop period from 3 to 7 days, occur with light fever, general uneasy, stomach ache, vomit, exantems and diarrhea, after that comes the oral vesicle that quickly get ulcerated and then appears the vesicles in hands and foot. The diagnostic is generally clinic.

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CELL CYCLE TARGET BY LED IRRADIATION IN HUMAN PRIMARY GINGIVAL FIBROBLAST

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It has been reported that light-emitting diodes (LED) can be used in the treatment of oral diseases. Although bio-stimulatory effects of LED irradiation such as promotes stimulation of wound healing has been well known, there is a few reports about molecular mechanism associated with cell cycle by LED irradiation. The purpose of the present study was to examine the molecular events in cell cycle of LED irradiation on primary human gingival fibroblast (hGF) *in vitro*. The source of light for irradiation was a continuous-wave LED emitting at a wavelength of 635 nm, and manufactured that energy density was 5 mW/cm² on sample surface. The hGF were irradiated for 1 h at 37°C; in 5% CO₂ humidified chamber. 1 h irradiation was performed once a day after plating. Experimental samples were acquired at 0, 8 and 24 h after irradiation. To investigate the molecular mechanisms associated with cell cycle, growth phase was determined by flow cytometry and mRNA expressions of cyclin A, cyclin B, cyclin D1, cyclin E, CDC2, PCNA, p18, p27, p21, and p53 were determined by real-time RT-PCR. Flow cytometry demonstrated that cells irradiated by LED were transitioned at S to G2. For mRNA expression, cyclin B, CDC2 and PCNA were increased at 0 h after irradiation, and cyclin B, cyclin A and PCNA were increased at 8 h after irradiation. At

24 h after irradiation, cyclin B and A were increased. Taken together, cells were irradiated by LED to proliferation via S to G2 transition.

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TREATMENT OF SEVERE PHYSIOLOGIC GINGIVAL PIGMENTATION WITH CO₂ LASER

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Gingival melanin pigmentation occurs in all races of man. Although physiologic and ethnic melanin hyperpigmentation is not a medical problem, demand for cosmetic therapy is commonly made by patients with a gummy smile. The present study was undertaken to test the effectiveness of the CO₂ laser for gingival depigmentation. Four female patients with 21, 22, 22 and 43 years old, presented with the same chief complaint of unesthetic gingival caused by melanin hyperpigmentation. The CO₂ laser was set at 3 watts in pulse mode (0.1 sec). Ablation of the gingival hyperpigmented areas were accomplished without any bleeding complications or significant postoperative pain. Three to 4 weeks after the procedures, the hyperpigmented gingiva appeared healthy, pink and firm. Recurrence of hyperpigmentation had been found in one of four patients, probably because cigarette smoking habit was present. It is concluded that the CO₂ laser may prove to be a simple, versatile and relatively non-invasive technique for treating unsightly racial pigmentation of the oral mucosa especially in non-tobacco smokers.

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ORAL PATHOLOGY RELATED TO PIERCING AND ORAL CAVITY

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Intra-oral piercing are increasing its popularity in the last years, the insertion of metal objects in the intra and peri-oral soft tissues has gotten a great spread in the adolescent and young-adult population in developing countries like Venezuela. This article, describe three piercing cases in adolescent which are about 14 and 16 years old. It describe oral lesions which are consequent of use it in tongue and inferior lip, that are the places where these were put, also it is emphasized the damages that this practice cause in oral and dental soft tissues. **Key-words:** piercing, oral pathology related to piercing, oral cavity, metal objects, tongue, lips.

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ASPERGILLUS FACIAL INFECTION

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Eighty years old patient comes to the Oral and Maxillofacial surgery Service 'La Zarzuela' Hospital, as an emergency, referring an intense pain on left zygomatic region, since 5 months ago. Chronic sinusitis is diagnosed, and endoscopic surgery is performed to achieve an histopathological analysis, being non especific. Two weeks later, gamma scintigraphy is performed in craniofacial region, and we find an increased uptake of radioactive isotope on the left malar bone, zygomatic arch and orbital floor, so we decide to carry out an intra-operative biopsy from the uptake radioactive isotope area. Histopathological diagnosis was aspergillus infection. Treatment planning is established, itraconazol administration and exhaustive clinical and radiological control. As a result of the large disease

extension, therapeutical decision is modified, performing radical surgery, with hemimaxillectomy, including left malar bone and zygomatic arch.

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BEHÇET SYNDROME: CLINICAL CASE REPORT

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Female patient, 35 years old, leukoderma, looked for assistance due to recurrent oral ulceration. The lesions appeared in the posterior palate region and on the lower lip mucosa. The patient presented skin lesions in different stages of development such as micropapules and ulcers on the fingers and lower limbs. Conjunctival hyperemia in the left eye was also present thus the Behçet Syndrome diagnosis was reached through interdisciplinary care. The Behçet Syndrome is a chronic inflammatory disorder, multisystemic with unknown etiology. It is characterized by recurrent genital and oral ulcerations, ocular and skin lesions, alterations in the central nervous system, involvement of the joints and cardiovascular alterations. One of the first signs of the Syndrome is the mouth manifestation, thus the great significance of the Dentist in the Behçet Syndrome diagnosis. The diagnosis is based on clinical criteria and its treatment depends on individual clinical manifestations.

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SOLITARY FIBROUS TUMOR OF THE TONGUE: REPORT OF A CASE WITH IMMUNOHISTOCHEMICAL STUDIES

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A case of solitary fibrous tumor occurring in the tongue of an 80-year-old female is described. The tumor was a submucosal well-demarcated mass of two centimeters in diameter. Microscopically, spindle-shaped tumor cells were haphazardly arranged in sheets, fascicles or whirling with thick collagen bundles and marked capillary proliferation. Immunohistochemically, tumor cells were positive for vimentin, CD34 and Bcl-2, but negative for EMA, CD99 and S-100. Some tumor cells were positive for smooth muscle actin, and also for angiogenic factors such as VEGF, bFGF and their receptors, suggesting that the present case is a SFT with inclination to angiogenic differentiation. The tumor showed few signs of malignancy, but high labeling index of p53 was noted, implying its potential of malignant transformation.

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INTRAORAL BLUE NEVUS: COMMON AND COMBINED

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Introduction: Blue nevus, also known as melanofibroma or Jadassohn-Tiechê nevus, is a benign, melanin-producing tumour comprising melanocytes and is usually located in the deep connective tissue of the mucosa. Regarded to be a rare lesion when the first case was reported in 1959, 40 years later it is still considered to be infrequent but certainly not rare. Clinically it is an asymptomatic, small lesion with a blue hue. **Case reports:** Common blue nevus:

39-year-old man, a smoker with no relevant medical history except for an occlusive trauma in the palate 3 or 4 years ago. He presented with a pigmented, asymptomatic lesion on the palate, discovered accidentally by his wife. Combined blue nevus: 75-year-old man, with a history of surgery to treat a gastric ulcer 46 years ago and a vesicle carcinoma 10 years ago, perianal fistulae and a decline in folic acid levels, all treated and under control at the time of the referral. He presented with a painless pigmented lesion that had appeared on the upper left gingiva of the jaw 6 years prior, and had since spread to the vestibular and palatal aspects of the incisors. **Results:** According to Buchner and Hansen, blue nevus affects men and women to approximately the same degree (48 and 52%, respectively); it is found most frequently on the hard palate (69%), followed by the labial mucosa (11.5%), labial vermilion (11.5%), soft palate (3.5%) and buccal mucosa (3.5%). Of the 61 cases of blue nevus reviewed, only one was found on the gingiva. Ficarra, in turn, reports a case of two combined gingival nevus tumours: one on the maxilla over the left central incisor and another on the jaw near the left cuspid. Although the aetiology is unknown, recent studies show that blue nevus is generated by cells migrating from the neural crest. The treatment consists in the complete excision of the lesion, which should be followed by a biopsy and respective diagnosis.

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OROFACIAL HERPES-ZOSTER IN IMMUNOCOMPETENT AND IMMUNOCOMPROMISED PATIENTS

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Introduction: The varicella-zoster virus causes chickenpox in childhood and shingles in adults. Onset comes in the form of chickenpox, with children between the ages of 5 and 9 accounting for 50% of the cases. After a first contact, the virus remains latent in ganglionated nerve cells. Re-activation is generally prompted by endogenous factors (lymphomas, leukaemia, age, radiation, immunosuppressive treatments, etc.), producing shingles or herpes-zoster in adults. **Case reports:** Immunocompetent patients: 45-year-old female nurse with injuries located in the right hemipalate. A 56-year-old businessman with injuries on the left hemitongue. Patients with hemodialysis treatment: 65-year-old woman with cutaneous injuries in right hemiface. A 50-year-old man with cutaneous injuries in the area around the right mental nerve. **Results:** Shingles affects 10–20% of the population and rarely occurs in young, healthy people; on the contrary, it is much more common among immunocompromised and elderly patients, with the highest incidence among people between the ages of 60 and 80 (5–10 cases per thousand). Herpes zoster is diagnosed primarily from clinical symptoms, although supplementary laboratory studies may prove to be helpful. As the cure tends to be spontaneous, it suffices to treat the symptoms. In severe cases, advanced age or where the immune system is not competent to suitably control the infection, drugs such as acyclovir, famcyclovir and the like should be administered. Fifty percent of patients over the age of 50 may suffer residual pain – post-herpetic neuralgia – for a variable length of time after the active stage recedes, there being no preventive protocol for this sequela at present.

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PERIPHERAL GIANT CELL GRANULOMA

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Introduction: Peripheral giant cell granuloma (PGCG) is a benign, exophytic lesion of vascular origin, confined to the alveolar bone and gingival mucosa. Its pathogenesis remains obscure. It accounts for 7% of all benign maxillary tumours. **Case reports:** *Case 1:* A 13-year-old female, with no relevant medical or dental history, presented with a hard, painless hyperplastic lesion on the left side of the upper maxilla, which had developed over a period of 3 months. No sores or bleeding were observed. The lesion was completely excised and a histopathologic diagnosis was made. *Case 2:* A 10-year-old male, with no relevant medical or dental history, presented with a hard, painless exophytic lesion on the left side of the upper maxilla. The lesion was completely excised and histopathologically diagnosed. Recurrence was observed, but proved to be minimal. **Results:** Giant cell lesions are a group of entities with a similar histopathological pattern, although their clinical behaviour differs. PGCG account for from 5.1 to 43.6% of all reactive exophytic lesions. These lesions have been described in a wide range of age groups: some authors find the highest incidence to be in patients under the age of 30, whilst others report the 40–60 age group to be the most highly affected. The lesion appears twice as often in females as in males. Although no evidence has been forthcoming in this regard, hormonal factors may play a role in the aetiology.

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GINGIVAL HYPERPLASIA, SIGN OF MYELODYSPLASIC/MYELOPROLIFERATIVE SYNDROME IN THE ABSENCE OF ANY WORSENING IN LEUKAEMIC CONDITION

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Introduction: Myelodysplastic syndromes are clonal diseases of hematopoietic stem cell origin in which the bone marrow is normal or hypercellular, but where the cell maturity process is affected by abnormalities and morphological dysmyelopoiesis. Cytopenia is detected in the peripheral bloodstream, developing on occasion to acute leukaemia (in other words, when the blastic – or leukaemic – cells in the bone marrow account for 20% of the total). Chronic myeloproliferative syndromes are clonal diseases of hematopoietic stem cell origin whose expression is a rise in one or several of the blood counts. There are also mixed states, however, in which the morphological anomalies characteristic of myelodysplastic syndromes co-exist with a rise in some one of the blood counts. **Case report:** A 63-year-old woman presented with a history of moderate asthenia and blood counts on the order of 3700 leukocytes, 9.9 g/dl of haemoglobin and 71 000/mm³ of platelets. Additional testing, including a bone marrow biopsy, led to a diagnosis of refractory anaemia type myelodysplastic syndrome with an excess of blasts. After 7 months in which the patient required no treatment, gingival alterations developed, for which reason she was referred to the Stomatology Ward. **Results:** Oral abnormalities in the better-known hematological diseases are the ones that appear in conjunction with acute myelomonocytic leukemia (AML FAB-M4), but they are more and more frequently being described in association with chronic blood disease. Although gingival hyperplasia is better known as a clinical and therefore diagnostic symptom of acute myelomonocytic leukaemia, its presence in myelodysplastic syndromes often concurs with stages of rapid advance or transformation of these

haematological symptoms. The sole case history discussed can be so characterized, i.e. the gingival expression was an indicator that revealed a change for the worse in a process that had remained stable and untreated for seven months.

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INTRAORAL AND EXTRAORAL LEUKAEMIC INFILTRATES

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Introduction: Intraoral and extraoral leukemic infiltrates are symptoms of chronic lymphoproliferative and myeloproliferative lymphoid syndromes. The evaluation, incidence, prognosis and diagnosis of these processes are reviewed in this paper. **Case report:** A 74-year-old (in 2001) male was referred to the Stomatology Ward for an exophytic lesion, 1 cm in diameter, on his palate. The patient reported having noted the lesion around 20 years earlier, which had never caused him any discomfort, but that had grown in the last year prior to referral. Infiltrates were also observed in the ear. He had been diagnosed 6 years earlier (in 1995) for chronic lymphocytic leukaemia (RAI stage 0). Although he had presented leukocytosis since 1990, no treatment had been required. **Results:** Oral manifestations are less common in chronic than in acute leukaemia, and tend to appear as paleness, sores or exophytic masses (leukaemic infiltrates). Intraoral leukaemic infiltrates may appear in many locations, including the gingiva and palate, and in some cases may be the first signs of leukaemia, although they may also occur during the course of the disease and recede after treatment. Recurrence is a sign of relapse and it is regarded to be indicative of a poor prognosis. No definitive diagnosis should be made without a histopathological study.

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GINGIVAL HYPERPLASIA AS AN EARLY SIGN OF LEUKAEMIC TRANSFORMATION IN A CASE OF MYELODYSPLASIA

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Introduction: Myeloproliferative–myelodysplastic syndromes (MPS MDS) are entities representing a mix of chronic MPS and MDS, in other words, chronic diseases with myeloid differentiation which, after months or years of evolution, often develop into acute leukaemia, with a high mortality rate. Gingival hyperplasia due to leukaemic cell infiltrates is a well-established development in acute myeloid leukaemias. **Case report:** A 62-year-old female, with no relevant medical history, presented with severe weight loss and asthenia. Her haemogram showed pancytopenia with 8.3 g/dl haemoglobin, 18 000 platelets and 3500 leucocytes. The diagnosis returned from a biopsy of the bone marrow was MPS-MDS with medullar fibrosis. The patient was referred to the Stomatology Ward due to a severe, rapidly growing gingival process that prevented her from ingesting food. **Results:** In MPS and MDS, or mixed, syndromes, the advent of progressive gingival hyperplasia generally signals a worsening of the disease, in other words, transformation to acute leukaemia and secondary infiltration of the gingiva by leukaemic cells. In a very few cases, however, such as in this

patient, leukaemic cell infiltration appears prior to any evidence in the bone marrow that the disease is becoming more acute, perhaps translating the changed circumstances into a local worsening in the gingiva or simply preceding the actual accelerated advance of the disease in the marrow by a matter of weeks or months, as reported in a short number of published cases. Generally speaking, the appearance of gingival infiltrate also seems to be favoured by local irritation and the minor traumatism associated with the use of dentures. Cavities and poor buccal hygiene are not regarded to be risk factors, although they do create optimum conditions for superinfection.

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PHEMPHIGUS VULGARIS – A CASE REPORT

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Phemphigus vulgaris is a rare autoimmune blistering disease of the skin and mucous membranes, where buccal lesions use to antecede the skin lesions. In this way, the dentist have an important paper in identify this lesions, must realize the diagnosis through the clinical history and complementary exams. This article relates a case of pemphigus vulgaris in a masculine patient, 47 years old, with buccal and skin lesions.

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COWDEN'S DISEASE. A RARE DISEASE

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Introduction: Cowden's syndrome is a rare disease autosomal dominant inherited, which is characterized by multiple hamartomas and neoplasms of ectodermal, mesodermal and endodermal origin. It was described in 1963, by Lloyd and Dennis in a 20-year-old woman called Cowden. We present a case of this disease in a woman with multiple popular lesions on the oral mucosa. **Clinical case:** A 56-year-old woman with multiple papules lesion on the tongue with a microgranulomatous appearance. The mucosa of lip had a corrugated aspect. In the buccal mucosa there was a polypoid lesion, which was removed. Also we realized a biopsy of the gingival mucosa. In the anamnesis the woman said that she was treated in two occasions of tiroids and the same times of bilateral breast cyst. She has polypoid lesions in stomach and colon. Some times cutaneous lesions were removed from the arms and legs. **Discussion:** This case presents the criteria of the Cowden's Syndrome Committee. The lesions of her mouth had no been previously studied. No member of her family has this rare disease.

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ERYTHROPLAKIA OF THE ORAL CAVITY. AN AGGRESSIVE PREMALIGNANT LESION: A CASE REPORT

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Introduction: As leukoplakia, erythroplakia is defined as a red patch that cannot be clinically or pathologically diagnosed as any other condition. Almost all 'true' erythroplakias demonstrate significant dysplasia, carcinoma *in situ*, or invasive squamous cell carcinoma (SCC). The etiology and prevalence of erythroplakia are still unknown, but it is presumed to be the same to SCC and it is observed 77 times less often than leukoplakia. **Case report:** A 51-year-old woman with smoking and alcohol drinking habits, had had a wide erythematous lesion affecting almost all the palate surface, including the middle line, for 6 months, before attending our Department. There were no associated pain, and antimycotic and antibacterial treatments had failed. The radiological exploration did not show any problem but cervicofacial TAC suggested bone infiltration. Toluidine blue test and biopsy were performed from the positive site. The final diagnosis was OSC well differentiated and microinvasive, and the surgical treatment consisted on left hemipalate resection and a fragment on the right palate. **Conclusion:** It may be concluded that oral erythroplakia is an aggressive premalignant lesion that must be always biopsied in order to do a differential diagnosis with other red lesions (erythematous candidiasis, oral lichen planus, discoid erythematous lupus...). Treatment must be surgical and any possible causative agents should be removed. It is an alarm signal because of the high probability of developing a SCC.

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DRUG-INDUCED ORAL MELANOSIS

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Background: Melanotic macules are not very common in the oral cavity, but when they are found it is very important to make a correct differential diagnosis with other serious pathologies like melanoma or adrenocortical insufficiency. **Method:** We report a case from a 72-year-old woman with several pigmented macules distributed among oral cavity: buccal mucosa, lower lip, vermillion, palatal mucosa and lateral borders of the tongue. These lesions have different diameters and none of them alter the normal architecture of the mucosa. Patient referees a surgical intervention because a breast cancer in 1995. After then she was treated with chemotherapy (cyclophosphamide, methotrexate and fluoracile). **Results:** A biopsy was made taking different pieces of oral mucosa from different macules. The histopathological diagnosis is 'melanotic macula' with an increase in melanotic pigment in chorion but without an increase in number of melanocytes. **Conclusions:** We make a review of the aetiology of melanotic lesions in oral mucosa, especially those induced by drug intake.

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GINGIVAL HYPERPLASIA

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Objective: Hyperplastic lesions have a significant frequency among the general population. Etiology is diverse and it is necessary to establish a definitive diagnosis before indicating therapy and establishing prognosis. The objective is differential diagnosis among pyogenic granuloma, traumatic fibroma and giant cell peripheral granuloma. **Method:** Diagnosis of this lesion with anatomo-pathological study. **Results:** In our clinical case one lesion presented similar clinical characteristics with the lesions mentioned above. One female patient presented with an exophytic gingival lesion in the anterior mandibular gingiva. The lesion was ulcerated and presented

suppurative exudate. During surgery an intralveolar origin is established. This suggests a giant cell peripheral granuloma. Biopsy reports an 'ulcerated fibroma, with peripheral angiogenesis and granulomatous tissue'. All the cases needed analgesic and anti-inflammatory medication. **Conclusions:** Anatomic pathological diagnosis is considered definitive, concerning diagnosis of exophytic gingival lesions.

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ABRIKOSOFF'S TUMOR: A CASE REPORT

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We present the case of a 50-year-old woman who presents a lump in the tongue since one and a half year. The growth's lump was slow and asymptomatic. During the exploration we appreciate a round nodular lesion of about 1 cm of diameter, located around the half of the tongue's middle-line. The lesion shows hard during the palpation, its consistence is elastic and it is not adhered to the adjacent tissues or depth planes. The mucous membrane which overlays it presents a normal colour. It is made a biopsy-extirpation of the harm at the dorsum lingual. A histologic study is carried out to the extirpation getting as result a granular cells tumor called or Abrikosoff's tumor. There was no evidence of relapse of the injury posterior to the extirpation. The Abrikosoff's tumor, called myoblastoma or granular cells tumor as well, was described by Abrikosoff in 1926. The myoblastoma is a benign injury in the soft tissues, uncommon and with a controverted origin and nature. During decades the skeletal muscle was considered as its origin though actually it has been demonstrated its neurological origin. The tumor is shown as a firm, elevated, circumscribed and asymptomatic subcutaneous or submucous nodular lesion, located frequently in head and neck though located preferently at the back of the tongue or in its borders. The only examination that can confirm the clinical diagnosis is the histological examination. Its treatment is the complete extirpation, with very unusual relapse.

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MULTIPLE HOBNAIL HAEMANGIOMA OF THE TONGUE

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Objective: To present an unusual case of multiple hobnail haemangioma of the tongue. **Observation:** A 65-year-old woman was referred for multiple nodules of the tongue, which had appeared 1 year before. She told a story of persisting ductus arteriosus operated at the age of 19, of a small electrodesiccated nodule of the intestine wall of 5 mm in diameter clinically diagnosed 'venous dysplasia', and of sideropenic anaemia due to metrorrhagias. Nine slightly raised, red and purpuric angiomatous nodules measuring 2–9 mm in diameter were disseminated on the dorsum of the tongue, one near the right side, seven along the left border, and one on the tip. The largest nodule was deeply ulcerated and painful. Other parts of the oral mucosa and skin were normal. Cherry angiomas and bacillary angiomatosis were discussed. Two nodules including the largest one were removed and processed for histopathological examination. The other ones were removed in a second time, and did not recur (4 years follow-up). **Histopathology:** The upper part of the lesion in the corium featured large tortuous thin-walled vascular spaces with numerous intraluminal papillary projections. Some of them resembled lymphatic vessels. The lower

corium and underlying muscle were occupied by a network of intercommunicating slender branched vessels dissecting through collagen bundles and muscle fibres. All these vessels were lined by a simple layer of flat endothelial cells with hyperchromatic rounded nuclei protruding into the lumen (hobnail cells). No clear correlation could be established with the past vascular lesions and haemorrhagic troubles. The histological features evoked hobnail haemangioma, a rare benign vascular lesion, usually involving the skin as a solitary nodule. Hobnail haemangioma appears to be clinically identical to the targetoid haemosiderotic haemangioma. Only two cases on the oral mucosa have been reported as a single lesion, one located on the tongue and one on the gingiva. **Conclusion:** The importance to be aware of this rare entity rests on the differential diagnosis, which includes benign lymphangioendothelioma, retiform haemangio-endothelioma, well-differentiated angiosarcoma, and patch-stage Kaposi sarcoma.

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RECURRENT ORAL ULCERATION IN RELATION TO SENSITIVITY TO GLUTEN: REPORT OF A CASE

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Oral ulcers occur in several conditions, including gastrointestinal disorders such as inflammatory bowel disease and gluten sensitive enteropathy or coeliac disease. Recent epidemiological studies document that adult celiac disease often lacks the classic presentation. The mechanisms responsible for bowel disturbances and for recurrent oral ulcers in celiac disease have yet to be defined. Treatment of gluten sensitivity with a diet that is free of gluten results in resolution of small intestinal lesions and often also oral ulcers. **Case report:** We report on a 26-year-old patient with recurrent oral ulcers for many years. They are painful and prevent her from eating. To the exploration she was presenting erosions badly delimited of rugose and whitish surface, with zones of erythematous oral mucousal. Haematological and immunological investigations were normal. The biopsy of the injuries and the duodenal biopsy showed no abnormality. **Discussion:** Recurrent oral ulcers may be associated with gluten sensitivity both in people with classic coeliac disease and in those with no intestinal abnormalities. While some patients present with gluten sensitivity and recurrent oral ulcers without gastrointestinal abnormalities, the possibility that some of these patients may subsequently develop enteropathy has not been confirmed. We suggest that all patients with recurrent oral ulceration should be tested for coeliac disease and given the importance of keeping to a diet free of gluten to minimise the risk of complications, patients need to be identified early and appropriate treatment must be started.

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ADVERSE ORAL REACTIONS ASSOCIATED WITH THE COX-2 INHIBITOR ROFECOXIB

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Rofecoxib is a new generation non-steroidal anti-inflammatory agent, an inhibitor of the enzyme cyclo-oxygenase 2 (COX-2) used as an analgesic and anti-inflammatory agent especially in rheumatoid arthritis and osteoarthritis. The adverse effects are generally less than with other anti-inflammatory drugs (NSAID), and no oral adverse reactions have been reported in the literature. We present two cases of oral lesions caused by Rofecoxib. Extensive erosions appeared, which in both cases resolved on withdrawal of the drug.

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A STUDY OF IRRITATION FIBROMA WITH REFERENCE TO CLINICOPATHOLOGICAL AND IMMUNOHISTOCHEMICAL FEATURES

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Objective: The oral irritation fibromas are benign fibroblastic proliferations. We aimed to determine the origin of the stromal component. **Methods:** The study consisted of 494 cases diagnosed as irritation fibroma in our department from 1971 to 2003. Immunohistochemically, mesenchymal, neurogenic and proliferative activities related antigens were performed. Histochemically, using alcian blue (pH 2.5) PAS double-staining method. **Results and conclusion:** Four types of fibroma were diagnosed as so-called 'fibroma' (80%), denture fibroma (18%), pedunculated, and soft fibroma. These lesions were mostly found in the cheek and gingiva, and a higher occurrence rate in the forties and fifties, and female (67%) predominance. Immunohistologically, three types of stromal components were observed: myxoid (S-100 β +), densely cellular and mature collagenous (actin +, S-100 +) stromal type. The stromal components shared features of different origins and the transformations of collagenous fibroma from early to mature stages are considered. The roles of myofibroblasts are discussed in the proliferation of oral fibromas.

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CLINICAL AND DIAGNOSTIC FEATURES OF MUCOUS MEMBRANE PEMPHIGOID

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Objective: Mucous membrane pemphigoid (MMP) is one of a group of autoimmune, subepithelial blistering diseases that predominantly affect mucous membranes. Early recognition and treatment can improve the prognosis. The aim of this study was to characterize the clinical and diagnostic features of MMP. **Methods:** Over a 3-year period (2001–2003), five patients (one male and four females with an average age of 69.2 years) who were diagnosed with MMP were evaluated. Clinical symptoms and sites of onset were analyzed. Biopsies were obtained for routine histopathology and direct immunofluorescence (DIF). Circulating autoantibodies in the serum were verified by indirect immunofluorescence (IIF) with use of guinea pig esophagus as substrate. Circulating IgG specific for BP180 was evaluated by ELISA. **Results:** All five patients complained of painful, easily bleeding, erythematous gingiva. Additionally, blister formation was found in the buccal mucosa of one patient while two had extraoral lesions involving the nasal mucosa (two cases), eye (one case), and skin (one case). Histopathologic confirmation was established in four cases, while DIF findings were positive in all five cases. Circulating autoantibodies were not identified by IIF in any of the five patients, while the BP180 ELISA was positive in three cases. **Conclusion:** The gingiva was the most commonly affected site although other mucosal tissues were occasionally involved. Both histopathological examination and DIF testing are essential to establish a definitive diagnosis. To date, however, evaluating circulating autoantibodies may not be of diagnostic benefit. Identification of circulating BP 180 specific autoantibody shows promise.

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IMMUNOHISTOCHEMICAL ANALYSIS (p53 AND Ki67) OF THE PROGRESSION OF EPITHELIAL DYSPLASIA IN ORAL LEUKOPLAKIA

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Leukoplakia is the most frequent precancerous lesion in the oral cavity. Nevertheless, its potential for malignant transformation is unpredictable. Epithelial dysplasia is the main important data in the prognosis of this lesion, but is a subjective characteristic with different interobserver reliability. The aim of this study was to provide immunohistochemical data about the process of progression of the epithelial dysplasia in sequential biopsies in patients with oral leukoplakia. **Materials and methods:** Consecutive biopsies of oral leukoplakia of six patients from the Department of Oral and Maxilofacial Pathology, Medicine and Surgery of University Cayetano Heredia and Department of Stomatology of the University of the Basque Country, were studied by histological and immunohistochemical methods. The biopsies were processed by conventional paraffin method. Hematoxylin and eosin staining and immunohistochemical reactions for ki67 and p53 were applied. The severity of epithelial dysplasia and the expression of ki67 and p53 were examined and compared by two pathologists. **Results:** The expression of ki67 and p53 increased significantly with the severity of epithelial dysplasia. **Conclusion:** The increased expression of ki67 and p53 is related to oral leukoplakia progression and the severity of epithelial dysplasia. *This investigation was supported by Grant 9/UPV00095.327–12086/200 from Universidad del País Vasco/EHU.

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CHRONIC ERYTHEMATOUS CANDIDOSIS IN OLDER PEOPLE WEARING DENTAL PROSTHESIS IN MEXICO CITY POPULATION

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Introduction: The prevalence of oral fungal infections in elder people wearing dental prosthesis is very high and data in Mexican population is scarce. Therefore, it is necessary to know the prevalence and risk factors in our population. **Objective:** To determine the prevalence, and risk factors of chronic erythematous candidosis (CEC) in older people of Mexico City. **Method:** This study was carried out in a sample of 65 elder people from 55 to 95 years old living in Mexico City. Patients were reviewed in a dental chair with artificial light and all red lesions associated to the area covered by the prosthesis were considered CEC lesions. Data were analysed by the Student's *T*-test, $P < 0.05$ was considered significant. **Results:** Of the 65 patients, 45 were females and 20 males. Of them, 27 (41.5%) presented CEC and 2 (3.4%) showed pseudomembranous candidosis. This lesion was more prevalent in the 55–64 years old group (57%), followed by the 65–70 year-old (45%), females were more commonly affected (44%). Associated risk factors encountered were deficient hygiene, prolonged use of the prosthesis (used during day and night) and inadequate adjustment of the device. Deficient hygiene was statistically significant, day and night use of the prosthesis and poor fitting of the prosthesis all were statistically significant ($P < 0.05$). Pseudomembranous candidosis was not associated with the time of use of the prosthesis. **Conclusion:** The frequency of CEC in the studied population is higher compared with previous reports. It is necessary to inform the people wearing dental prosthesis on the risk factors for CEC.

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ORAL PSORIASIS: AN UNUSUAL PALATAL PRESENTATION

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Objective: Oral involvement of psoriasis is rare and the incidence of oral manifestations is considered to be <2% of psoriatic patients. Here we report a case of psoriasis with involvement of the palate.

Methods: A clinical and histopathological evaluation was made.

Results: A 31-year-old Spanish female was referred to our department complaining of erythema on the hard palate, and 3 years of follow-up without any changes of shape and size. Partial response to topical corticosteroids has been observed. The medical history only revealed psoriasis in neck (without skin lesions at the moment), irritable colon and breast fibroadenoma. Histological examination showed acanthosis with parakeratosis, dilated capillary vessels between elongated rete ridges and mild perivascular infiltrates of mononuclear cells. However, microabscess was absent. **Conclusions:** In spite of the absence of Monro's microabscesses we suspect that this lesion is related to psoriasis and has been treated with corticosteroids topic solution with a total remission of the primary palatal lesion in a month.

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ACTINIC CHEILITIS IS A PRECANCEROUS LESION. CASE REPORT

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Introduction: Actinic cheilitis is a precancerous lesion basically related to the extended and chronic exposure to solar radiations. From a clinical point of view, it presents erasure of the cutaneous-mucous lip limit, loss of turgency and unflakiness. It appears mainly in people who have been exposed to sun for work reasons (fishermen, ploughmen, and other people who work primarily outside). The evidence that it is a cancerous lesion is based on the fact that the majority of lower lip carcinomas appear in lips with a previous actinic lesion. Previous actinic lesions resolving into carcinomas are calculated between 1 and 3%. We review in this research, from a meta-analytic point of view, the concept, therapeutic possibilities and malignancy degree of this lesion, in a case report. **Case report:** An 88-year-old male, without pathological history of interest and agricultural worker. He presents two asymptomatic lesions in the lower lip, with several months of evolution. We perform a diagnosis of leukoplakia and actinic cheilitis and we follow conservative treatment and hygienic measures. After an initial improvement of the lesions, there is recidivism in the case, for which we decided the exeresis of the lesions. The AP report indicates that there is a leukoplakia and an actinic cheilitis. The patient is controlled after one month, and new lesions are evident.

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HERPES SIMPLEX VIRUS TYPE 1 SHEDDING IN THE ORAL CAVITY OF SEROPOSITIVE PATIENTS

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Objective: In the present case-control study the frequency of HSV-1 reactivation in the oral cavity of seropositive patients with previous history of recurrent herpes labialis (recrudescent group) was compared with healthy seropositive volunteers without any history of recrudescent lesions (asymptomatic HSV-1 infection). In addition, the relation between recrudescent and the presence of the virus in the oral mucosa was assessed as well. **Methods:** Fourteen individuals with previous history of herpes labialis (recrudescent group) and 11 volunteers HSV-1 seropositive without any previous history of herpetic lesions (asymptomatic group) were included in the study. Swabs were performed periodically in all subjects in the buccal mucosa, lower lip and dorsum of the tongue over a period between 8 and 11.5 months. The presence of HSV-1 DNA was identified by nested PCR. **Results:** All the 25 subjects enrolled in the study, including the group with recrudescent herpes labialis and the group with asymptomatic HSV-1 infection, revealed at least one positive swab for HSV-1. The frequency of positive exams for HSV-1 in the group with recrudescent herpes labialis was not statistically different from the group with asymptomatic HSV-1 infection. Ten subjects of the recrudescent group presented herpes labialis at least once during the study. Positive swabs for HSV-1 occurred before or after labial blisters. **Conclusion:** The results show that HSV-1 shedding in the oral cavity occurs independently of herpes labialis recrudescent.

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ORAL PATHOLOGY FOR ORTHODONTIC PATIENTS

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In the last few years, dentists have been registering a significant increase in the demand for orthodontic treatment for children as well as for adult patients. This increase in orthodontic treatment is mainly due to personal cosmetic reasons and also by the present usage of modern invisible orthodontic techniques like the ones, in particular used by lingual orthodontics, that utilize concealed braces. As a result of that increase a large number of patients of varying ages present different oral pathologies. **Objectives:** To analyse the most prevalent oral pathology experienced by the orthodontic patient. To evaluate the prevailing traumatic damage due to bad appliance usage and how the treatment could affect groups of patients of different ages and sex. To detect infectious pathologies, specially gingivitis, ulcers or mycotic infection. To show the relationship between class II skeletal with the incisors trauma. Enamel damage after de-bonding brackets. **Methods:** (i) Patients under orthodontic treatment. (ii) X-rays (apical-orthopantomography-teleradiography). (iii) Scanning electronic microscopy. (iv) Digital photography. (v) Chromogenic identification for candida albicans. **Conclusions:** The children present more sore and lacerations in the gums and on the oral tissue than the adults patients. The most frequent lesion occurs in the zygomatic membrane due to the constant rubbing of the braces. The orthodontic device that presents more mycosis are the permanent fixed appliance during the treatment (Nance-Expanders).

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AN IMMUNOHISTOCHEMICAL STUDY OF ORAL LICHEN PLANUS, WITH SPECIAL REFERENCE TO INFLAMMATORY CHARACTERISTICS

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Objective: Oral lichen planus (OLP) is a chronic inflammatory lesion with keratosis. However, the details of pathogenesis have not been clarified yet. Therefore, the purpose of this study was to investigate the inflammatory characteristics of OLP from immunohistochemical points of view. **Methods:** A total of 29 cases of OLP were analyzed. In the clinical findings, OLP tended to occur in middle-aged females (average, 59.5 years). The most commonly affected site was the buccal mucosa (16 cases). **Results:** Histopathologically, zonal inflammatory cell infiltration was observed subjacent to the atrophic and acanthotic squamous epithelium with keratosis. Although the majority of the inflammatory infiltrated cells was CD45RO-positive T cells, CD68- or HLA-DR-positive macrophages and mast cells showed metachromasia by toluidine blue stain (pH 2.5) and IgE-positive plasma cells were also identified. Some macrophages contained melanin granules (so-called 'melanophage'). S-100 and S-100 β proteins or HLA-DR positive dendritic cells were observed in the epithelium. **Conclusion:** These results suggested that the pathogenesis of OLP was associated with not only T-cell-mediated local immune mechanism but also IgE-mediated immune response. In addition, intramucosal dendritic cells and melanin pigmentation had a unique role of the pathogenesis in OLP.

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COX 2 AND GROUP OF PHOLIPASE A2 PREFERENTIALLY EXPRESSED IN ORAL LICHEN PLANUS

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The white lace-like lesion appeared at mucosal surface of oral lichen planus (OLP). This significant clinical feature may relate to the defense mechanism of oral mucosa. We have focused on a prostanoïd synthesis to clarify the involving cells and molecules in OLP. Phospholipase A2 (type IIa, V, X) and cyclooxygenase (COX1 and COX2) are enzymes essential for a prostaglandin biosynthesis. We investigated the localization of proteins and mRNAs expression of PLA2s and COX2 on 40 cases of OLP and epithelial dysplasia. Immunohistochemistry and *in situ* hybridization respectively indicated that the COX2 protein and its mRNA expressed mainly within the prickle cell layer of the mucosal epithelium. The COX2 positive reaction was parallel to thickness of the epithelium. Much less intense expression was observed in the epithelial dysplasia. Phospholipase A2 mRNA expression of each subtype showed distinct localization pattern in the lesion. The type V mRNA was clearly detected at basal cells of epithelium and the macrophages in submucosa. The type X mRNA was mainly detected at the basal cells. On the contrary, the type IIa mRNA was under detectable level in the lesion. Prostanoid synthesis of the epithelial cells may be important in progress of oral lichen planus, which is in cooperate with the dendritic cells, CD8 cells, and NK cells.

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ASSOCIATION OF HEPATITIS C VIRUS INFECTION AND ORAL LICHEN PLANUS IN A VENEZUELAN POPULATION

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Lichen planus is a chronic inflammatory mucocutaneous disease that frequently involves the oral mucosa. Recent studies have confirmed a significant association between oral lichen planus (OLP) and liver diseases, in particular with hepatitis C virus (HCV) infection. The aim of this study was to evaluate the association of OLP in patients with HCV infection. Patients with HCV infection associated with OLP were compared with patients with OLP without HCV infection. We eval-

uated 94 patients with HCV infection detected for anti-HCV by immunosorbent assay ELISA (third generation) confirmed by reverse transcription polymerase chain reaction (RT-PCR) HCV-RNA and 22 patients with the histopathological diagnosis of OLP. Only one of 94 HCV-positive patients was clinically and histologically positive for OLP. None of 22 patients with OLP had positivity for Hepatitis C virus screened by ELISA and PCR. We concluded that although cases of oral lichen planus associated with hepatitis C virus (HCV) infection have been described, the association between the two diseases has not been established in the Venezuelan population, because the geographic origin of patients could play an important role in HCV prevalence in patients with oral lichen planus.

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AGGRESSIVE PERIODONTAL DISEASE AND LICHEN PLANUS. CASE REPORT

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Lichen planus is a chronic, autoimmune disease, of unknown cause from the skin and mucosa; the prevalence is between 0.2 and 4% (Salem 1989, Borghelli et al. 1990), and the typical onset age is between 30 and 70 years (Conte et al. 1990) and a predominance in females has been described (Silverman et al. 1991, Brown et al. 1993). Periodontal disease is a chronic infection process where the immune system has an important role. In this diseases, aggressive periodontitis, and lichen planus, the immune system does not work, as it should; some body cells on lichen disease are not recognized like own, and provide immune reaction. In aggressive periodontal disease, some cells have normal functions altered, like phagocytosis or quimiotaxis, and small quantity of plaque is enough to get high periodontal disease index before 30–35 years old. In places with heavy load plaque it is induced the mean severity subjective symptoms, scores and extension of lesions initially decreased. We tried to study the relationship between an aggressive periodontal disease and erosive lichen in a patient who suffers both diseases, and its bad response to the treatment.

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INTEGRAL EVALUATION OF THE PATIENTS WITH ORAL LICHEN PLANUS (OLP). A PRELIMINARY STUDY OF 73 CASES

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Objectives: To know the most important oral features of OLP in our environment. **Material and methods:** A prospective study of 73 OLP patients, 53 females and 20 males, with an average age of 56.8 years (range 21–86) was made. These patients had been diagnosed OLP with a histological confirmation by the means of a biopsy (50) and immunofluorescence (28). **Results:** A 93% of the patients presented at least one generally associated disease, there was high incidence of depressed patients (22 cases) and there was low incidence of patients with diabetes (13 cases) and hepatitis (11 cases). Five patients presented lesions on others mucous, 14 patients on skin and three patients on nails. Forty-nine cases presented symptoms, the most frequent ones were pain (27 cases) and burning (26 cases), and three cases of a feeling of ruggedness, with an average of 16.87 months of evolution. The clinical presentation consisted of reticular lesions or in plaque (37), like atrophic-erosive lesions (11) and atrophic-erosive lesions plus other (27), located in the buccal mucous (76.71%), tongue (35.61%), palate (10.95%) and retrocomisural mucous (9.58%). A 16.4% presented chronic desquamative gingivitis. **Conclusions:** OLP patients in our environment are mainly postmenopausal woman, with

great psycoemotional affections that they search council due to pain or burning caused by atrophic-erosive clinical forms.

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CLINIC STUDY OVER 20 PATIENTS WITH DESQUAMATIVE GINGIVITIS

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Objective: The purpose of this study was to analyze clinical and pathologic findings of patients with desquamative gingivitis. **Method:** Twenty patients with desquamative gingivitis were assessed. In 18 of them we practiced a biopsy (HE) and direct immunofluorescence study. **Results:** We reviewed 18 women and two men among 28–74 years old (average 57.8). Results showed 12 patients (60%) were hypertensives, seven (35%) suffered depression and anxiety, and two (10%) viral hepatitis. Half of the patients presented only desquamative gingivitis and the other half presented desquamative gingivitis and others lessions in diferent oral localitations. The diagnosis was: oral lichen planus (OLP) in 15 patients (75%), cicatricial pemphigoid in two patients (10%), pemphigus in one patient (5%), and unspecific chronic desquamative gingivitis in two patients (10%). **Conclusions:** These findings indicate the desquamative gingivitis is more frequent in women older than 55 years old, being the main cause OLP and less frequent pemphigus and cicatricial pemphigoid. It is important to rule the last ones out with direct immunofluorescence study because of a systemic implication.

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LICHENOID REACTION IN RELATION WITH ACRYLIC MONOMER

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The case of a 72-year-old patient who is remitted by her dentist with an inflammatory reaction in the lower lip and commissural cheilitis. Also, she has white injuries with lichenoid morphology in labial mucosa, floor of the mouth and softly in lower gingiva with 4 months of evolution and recently she feels dry in the tongue spike. The illness started with an implementation in a lower full mouth denture. In relation with her personal antecedents, she suffers hypertension, allergy to acetylsalicylic acid (ASA), and also she is treated with diuretics. We retired the prothesis, and gave her the prescription with topic corticosteroid (triamcinolone acetone 0.3% watery solution), antifungal ointment for the cheilitis, and thisone remitted in a week and also the lichenoids injures. The suspected diagnosis was hipersensibility to any prothesis component, specially a contact allergy caused by the acrylic monomer. Although these kinds of allergies are so strange, sometimes a bad polimeritation can give high levels of residual monomer, which can produce hipersensibility. An important aspect, is how thisone appears like lichenoid reaction, although is not normal this kind of expression. The fact that the injuries reappeared when the patient used the prothesis once more supports clinically our diagnosis.

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INTRAORAL LICHEN PLANUS. THREE CASE REPORTS

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Objective: Three clinical cases of oral lichen planus (OLP) are presented. Our aim is to discuss and evaluate the evolution of OLP. Etiology is

incompletely understood, some studies cite the presence of virus or the exposition to drugs and prosthetic components as risk factors. Patients with diagnosed diabetes, hypertension, hypothyroidism, psychological alterations and atopia are also reported to present a higher incidence. An exaggerated neutrophilic response has also been found. The final stimulation for immune response is unknown. OLP has a chronic evolution and a clinical presentation characterized by hyperkeratotic or atrophic lesions of the mucosa with chronic inflammatory infiltrate. The potential for malignant transformation of OLP is still subject of controversy. **Method:** Evaluation and treatment of these cases. **Results:** Three clinical cases of OLP in middle-aged female patients are presented. In case 1 OLP presented as white macular, quiescent lesions with previous episodes of exacerbation and burning pain, worsened by clorhexidine. These lesions had been present for 2 years. Case 2 presented erosive, atrophic and vesicular lesions, very painful. Case 3 presented only vesicular lesions in the buccal mucosa and lateral tongue. All the cases needed analgesic and anti-inflammatory medication. **Conclusions:** OLP is a systemic pathology with significant oral manifestations. The diagnosis is made mainly by biopsy. Treatment is only palliative.

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LICHEN PLANUS PEMPHIGOIDES: REPORT OF A VENEZUELAN CASE

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Lichen planus pemphigoides (LPP) is a rare cutaneous disease, which etiology remains controversial. It is still unknown whether LPP is an independent disease or if is determined by the presence of lichen planus and bullous pemphigoides in the same patient. LPP is characterized by bullous on skin and oral mucosa. Frequently, oral bullous and ulcers appears over white striae. The diagnosis of LPP requires the use of clinical examination as well as histopathological and immunological studies. **Aims:** The aim of this study was to report a case of LPP with oral lesions, in a patient that was evaluated in the Service of Oral Medicine Dra. Magdalena Mata Caracas, Venezuela. **Materials and methods:** A 63-year-old Venezuelan woman with a 1-year history of widespread oral lichenoid eruption and disseminated skin blisters was evaluated in the consult. A microscopic examination of incisional biopsy specimens of oral mucosa and skin revealed lichen planus with linear IgG and C3 deposits at the basement membrane zone detected with direct immunofluorescence, resulting a diagnosis of LPP. **Results and conclusions:** LPP is an unusual disease that appears in oral mucosa. A precise diagnosis is required to apply a correct treatment.

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ORAL LICHEN PLANUS AND DENTAL MATERIALS: A CASE-CONTROL STUDY

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Objectives: The purpose of our study was to determine clinical and histopathological differences in patients with Oral Lichen Planus (OLP) in relation to existing dental materials. **Material and methods:** We studied 38 patients with OLP in the Oral Medicine Unit of the University of Murcia. The inclusion criteria were that patients had been clinically diagnosed with Oral Lichen Planus and that this diagnosis had been confirmed with a biopsy according to the criteria of the WHO. Patients taking drugs, which could cause lichenoid reaction, were excluded. Two groups were constituted: the control group A of 19 patients (seven men and 12 women with OLP) in which we included

patients with OLP but without amalgam fillings or metal in the mouth. Group B was made up of 19 patients (one man, 18 women) with OLP and amalgam fillings or metal in the mouth. To study the possible differences, a protocol was elaborated in which the lesions were classified according to the presence of white forms, red forms or both. Holmstrup's association criteria between mucosal lesions and amalgam restorations were followed. **Results:** The average age of group A patients was 52.6 years and of group B patients 51 years. The predominant clinical form in both groups was the reticular white form. Of the patients with OLP and metals, 36.8% had a weak association and 13.2% a strong association. The studied histopathological variables were: subepithelial lymphoid infiltrate (19/19 in both groups), hydropic degeneration (19/19 in A and B), erosion (2/17 in group A and 8/11 in group B), atrophy (4/15 in group A and 7/12 in group B), acantosis (13/6 in both groups), ortokeratosis (4/15 in group A and 3/16 in group B), parakeratosis (18/1 in group A and 17/2 in group B) and Civatte bodies (5/14 in group A and 8/11 in group B). **Conclusions:** The LPO patients with metal presented greater erosion than the LPO patients without metal, and this difference was statistically significant ($P = 0.007$).

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IMMUNOHISTOCHEMICAL AND POLYMERASE CHAIN REACTION STUDIES APPLIED TO KAPOSI SARCOMA SPECIMENES

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Human herpes virus 8 DNA has been demonstrated in almost all tissue specimens from HIV+ patients with Kaposi Sarcoma. They can show once or more oral measurable lesions, sometimes its the first manifestation. **Objectives:** (1) To establish the nature of lesions by immunohistochemical markers. (2) To investigate if there could be another associated viral influence. **Methods:** Six histological specimens from HIV+ patients with oral Kaposi Sarcoma and six (control group) (HIV+KS-) were analyzed. Markers, Vimentina, CD34, CD31, CD8 were measured. PCR was used for CMV and HPV determination and LIS-SSPC with primers My09/11 and Gp05/06 for HPV typing. **Results:** Immunohistochemistry results were: Vimentin and CD34, CD31, CD8 positive in the first group and negative in control group. PCR was analyzed in five cases. CMV+: 1/5; HPV16+: 1/5; CMV/HPV6: 1/5. **Conclusions:** (1) Immunomarcation allowed us to prove in our short serie the epithelio-mesenchimatous displastic disorders in oral Kaposi Sarcoma. (2) Positivity of CD34 and CD31 could corroborate its vascular nature. (3) With our results we cannot assure that HPV and CMV presences could influence in neoplastic proliferation.

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EVOLUTION OF THE ORAL MANIFESTADONS OF HIV+ PATIENTS, DEPEND ON THE ANTIRETROVIRAL THERAPY

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Objectives: The aim of the present study is to analyze the effect of the antiretroviral treatment in HIV patients in a population in the Infectious Diseases Service of the Vall d'Hebron Hospital in Barcelona. **Material and methods:** Ninety patients were visited, 51 men (56.7%) and 39 women 43.3%), the mean age of the patients was 36.2 with a deviation of ± 17.8 years. The visits were accomplished

from January to December in the year 1999. These patients were receiving antiretroviral treatment of one or more drugs and some of them (32.2%) were submitted to a high activity antiretroviral treatment (HAART); moreover, in these patients the recount of CD4 and viral load was evaluated in a bimodal way at the beginning of the process and at the moment of the visit. **Results:** The most prevalent pathology found in this study was the dry mouth sensation or xerostomia, in a 47.8% of the patients, followed by order of frequency, by polycaries (34.4%) and erythematous candidiasis (31.1%). **Conclusion:** The results of this study cannot be superposed with the results obtained by other authors, due to the different dates and collectives of patients, before and after the utilization of the HART: this kind of therapy has modified the expression of oral pathology in order to suspect HIV seropositivity.

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GINGIVAL CRYPTOCOCCOSIS IN A PATIENT WITH AIDS

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Cryptococcosis is a fungal infection that affects normal as well as immunosuppressed individuals. The disease is primarily a pulmonary chronic infection. The majority of oral cases have been reported in AIDS patients who had the disseminated form of disease. We present a 36-year-old male AIDS patient in which the diagnosis of cryptococcosis was established by gum biopsies. Oral cryptococcosis in this case was characterized by enlargement of the anterior upper and lower gingival, and the presence of a tumor-like lesion in the left tuberosity. The involved gingiva appeared erythematous with a granular texture, and micro-ulcerations covered with serous secretion. The lesions mimicked reactive gingival hyperplasia. Microscopic evaluation revealed a chronic inflammatory reaction with abundant histiocytes and the presence of numerous rounded structures with a clear halo. No giant cells were identified. PAS and mucicarmine stains disclosed cryptococcus. After the oral diagnosis, additional studies were performed, and the antibodies against *Cryptococcus neoformans* in spinal fluid were positive. This established the diagnosis of both meningeal and gum cryptococcosis. Fluconazole was prescribed as treatment. After 18 months the biopsies of the gums were negative for cryptococcus, and on inspection displayed only reactive hyperplasia. AIDS patients developed many infections that involve the oral mucosa, therefore biopsies with use of special stains are mandatory to establish a correct diagnosis.

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SPONTANEOUS BONE NECROSIS SECONDARY TO HERPES ZOSTER IN THE SETTING OF HIV – A REPORT OF FOUR CASES

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This paper reports on four clinical cases presenting with a history of spontaneous bone necrosis of the mandible, occurring during an acute attack of herpes zoster. Three of the patients gave a history of complete loss of the alveolar process including teeth over a 1-week period. One patient presented with ulceration on the lingual aspect of the mandible with exposed necrotic bone, and spontaneous loss of anterior teeth. The remaining teeth were all non vital. In all patients, the skin on the involved side of the mandible, showed distinct scarring along the distribution of the mandibular division of the trigeminal nerve. All lesions were unilateral ceasing abruptly at the midline. In all patients

there had been no previous history of herpes zoster. Two of the four patients had sustained pathological fractures, due to the thin rim of inferior cortical bone remaining in the mandible. All patients were HIV positive. The CD4 count was available for three of the patients, which was <200 . These cases are presented to highlight some of the potential complications of latent viral infections in the setting of HIV, and to hypothesize the pathogenesis of spontaneous bone necrosis in the setting of a viral infection.

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A PREVALENCE STUDY OF PERIODONTAL PATHOGENS DETECTED BY MULTIPLEX PCR AMONG HIV VENEZUELAN PATIENTS

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Objective: The purpose of this study was to evaluate the relation between clinical periodontal parameters, lymphocytes T CD4+ cells, viral load and the occurrence of selected putative periodontopathic bacteria) in these lesions in infected patients by human immunodeficiency virus. **Methods:** Thirty-two HIV+ patients that assisted at the Infectocontagious Disease Service at the Dentistry Faculty of the Central University of Venezuela and a 16-control group, were examined to determine the status of their periodontal health. Gingival index, plaque index, pocket depths, and attachment loss were determined using standard indices, the counting up of the lymphocytes CD4+ subpopulations by low cytometry, viral load by reaction chain polymerase (PCR) and *Porphyromonas gingivalis*, *Prevotella intermedia* and *Actinobacillus actinomycetemcomitans* by multiplex PCR. **Results:** The 34% of the patients presented an amount of lymphocytes CD4+ <200 cells/mm³. Index probe depth showed that the HIV positive had significantly lower scores than control groups. Differences in GI, CAL and PI scores between HIV+ and control group not were statistically significant. No difference in microbiological profile in the bacterial groups monitored was found between HIV+ and HIV-. *Prevotella intermedia* (72%) were found to be more abundant than *Actinobacillus actinomycetemcomitans* (25%) and *P. gingivalis* (3%) in patients HIV infected. Control group was observed *Prevotella intermedia* (100%), *Actinobacillus actinomycetemcomitans* (69%) and *P. gingivalis* (19%). **Conclusion:** The reported results in this study show that, although we had a population of immunosuppressed patients there was no periodontal advanced disease observed.

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ORAL LESIONS IN A PATIENT COINFECTED WITH HIV-HCV: EXFOLIATIVE CHEILITIS VERSUS EEM

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Objectives: A variety of oral lesions such as exfoliative cheilitis has been observed in reactive HIV-1 patients subjected to antiretroviral therapy (ART). Sometimes the lesions are similar to exudative erythema multiforme (EEM). We describe the oral lesions of a patient coinfectd with HIV and HCV under ART and interferon (IFN-PEG). **Methods:** A clinical case referred to the Oral Medicine Clinic at School of Dentistry (UCM) is described. A clinical and pathological evaluation was made. **Results:** A 45-year-old male patient, ex-intravenous drug user with HIV since 1998, in A2 stage disease, presented an erosive lesion in the lower lip and multiple erosives lesions in tongue. The history revealed HCV virus chronic hepatopathy, and oral ulcers secondary to ddC. CD4 count was

659 cells/mm³ and HIV viral load was 11 400 copies/ml. The actual medication consisted of ddI, d4T, ABC, and IFN-PEG. Histological study was unespecific and PCR for human herpes virus (HHV) family were negative. **Conclusion:** We consider this lesion may be explained as a EEM secondary to IFN-PEG treatment more than due to ART. It is very difficult to confirm this, because at the moment the patient cannot stop the medical treatment with interferon.

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ORAL LYMPHOMA: FIRST OCCURRENCE IN A PATIENT WITH AIDS

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Introduction: Extranodal lymphomas in the oral cavity account for 2–5% of all such lymphomas and are frequently associated with HIV infection. Both primary and secondary immunodeficiency plays an essential role in the origin of lymphatic neoplasias. The aim of the study is to analyse the incidence and prognosis of lymphomas in HIV-infected patients. **Case report:** A 41-year-old male presented with an 8-month history of a non-ulcerative lesion located on the soft and hard palate. The panoramic X-ray radiograph revealed a lithic defect in the palate. The patient was unaware of his HIV-infection. After 1 year of treatment, the lesions disappeared. **Results:** Extranodal lymphomas in the oral cavity, which account for 2–5% of all such lymphomas, are frequently associated with HIV infection. Around 2–4% of patients are diagnosed for B-cell lymphoma in the course of their disease; most are young homosexual males whose mean age is about 37, in striking contrast to the rest of the population of patients, whose average age is 63. The incidence of lymphomas directly related to HIV infection tends to decline with triple and quadruple therapy, which stabilises CD4+ lymphocyte blood counts and suppresses the plasma-HIV viral load to below detectable limits.

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SULFONAMIDES AND THE STEVENS-JOHNSON SYNDROME

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Introduction: Most cases of Stevens-Johnson syndrome are closely related to the intake of medication. The clinical symptoms are characterised by a pre-eruptive period very similar to a pseudo-influenza process, which lasts, in 50% of the cases, from 1 to 13 days. This is followed by the appearance throughout the mouth of large blister-like lesions that rupture to form ulcers. The most conspicuous sores appear on the lips where painful ulcers form serohaematic scabs. Other mucous tissue, the skin and viscera may also be affected. **Case report:** A 39-year-old black male diagnosed in 1994 for heterosexually transmitted stage C3 HIV infection. Antiretroviral treatment had been administered on occasion, but was interrupted by the patient. He also presented with cerebral toxoplasmosis that was treated with sulfadiazine and pyrimethamine. One of the complications of this ailment was a series of sores throughout the oral cavity, including labial synechias, which virtually prevented him from eating. The Nutrition Ward prescribed

parenteral support to palliate the problem. Treatment consisted of surgically separating and antiseptically dressing the lips under infiltrative anesthesia administered through the cutaneous area around the commissurae near the upper lip. He was able to ingest food through the mouth 24 h later. The symptoms receded with the administration of sulfadiazine and pyrimethamine. **Results:** The most common cause of Stevens-Johnson syndrome is the intake of medication, primarily penicillin and sulfonamides, although it may also be set off by salicylates, barbiturics, anovulatory species, pyroxyam or digitalin-based preparations. It primarily affects males (60%), children and teenagers (20%) and young people between the ages of 20 and 40. Very intense general symptoms may appear, in addition to the lesions on the mucosa. The mortality rate, from 5 to 15%, is associated with pulmonary complications. Whilst most patients heal in 4 weeks, there may be sequelae. For this reason, in-patient treatment is recommended.

190 RAPID GROWING METASTATIC PRIMITIVE NEUROECTODERMAL TUMOUR (PNET) IN SUBMANDIBULAR AREA

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Primitive neuroectodermal tumor (PNET) in head and neck is a rare, highly aggressive, poor prognostic neoplasm. We present a case of metastatic primitive neuroectodermal tumor of the left submandibular region. A 67-year-old man who was diagnosed as PNET in left maxilla, received partial maxillectomy. After surgery, a single course of chemotherapy was administered. Magnetic resonance imaging showed no tumor metastasis in submandibular space or neck area. For 3 months, the treatment and follow-up was stopped by patient's poor general condition. After 3 months, the patient re-visited hospitals by newly developed mass in submandibular space. Magnetic resonance imaging revealed 6 × 4 cm sized metastatic soft tissue tumor within the submandibular space. After excisional surgery, the mass was proven to be the metastatic PNET. To our knowledge, this is the first PNET case in head and neck area that shows very fast growing to such size just for 3 months. It is a good example that shows PNET's rapid growing and metastatic tendency.

191 MUTATION ANALYSIS OF TRANSFORMATION GROWTH FACTOR-BETA TYPE II RECEPTOR BASED ON MULTISTEP PROCESS OF ORAL SQUAMOUS CELL CARCINOMA

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The role of transforming growth factor β (TGF β) family members in carcinogenesis is complex. A widely accepted concept suggests that a critical step of carcinogenesis is the deregulation of TGF β action and its signaling function. We have previously observed mutation of TGF β type II receptor (T β RII) gene in oral squamous cell carcinoma (OSCC) cell lines. In this present study, 18 cases of OSCC were used for gene mutation analysis of T β RII. Focused on multistep process, each area was selected by normal surgical margin, dysplastic lesion, carcinoma and metastatic cancer cells by laser capture microdissection (LCM). Exon-specific spanning primers of exon 1, 2, 3, 4, 5, 6, 7 were used for PCR amplification of the genomic DNA and each of the amplified sequences were analyzed

for their mutation sites. The results do indicate several evidences for their roles in disrupting receptor functions: (1) one case, in dysplastic cells, we found exon3 (extracellular domain) mutation at codon 135[Met-to-Thr] which induced the structural change in extracellular domain of the receptor; (2) the most common site of gene mutation was codon 191 (Val-to-Ile) of exon4 which was found in seven cases throughout normal surgical margin, dysplastic lesion, carcinoma and metastatic cancer cells; (3) seven types of missense mutations found in exon4 (intracellular domain) from all of the cancer development stages may influence physico-chemical properties of amino acids, thus protein structure; These results suggest that TGF-betaRII mutations may be one of the cause in early stage development and progression to OSCC. **Acknowledgements:** This study was supported by the Korean Ministry of Health & Wealth Grant: no. 02-PJI-PG3-20801-0015.

192 ASSOCIATION BETWEEN VEGF AND P53 IN ORAL CANCER

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Vascular endothelial growth factor (VEGF) is a protein, which plays an important role in the angiogenesis and in the proliferation of the endothelial cells, enhancing with this the tissue vasculogenesis. It is known that tumour cells are able to increase the expression of VEGF to develop the intratumour microvessel density. Besides, the tumour suppressor gene p53 produces a protein called p53, which its role is to stop the development of mutant cells by two ways; the first, stop the cells cycle to repair this cell, and if it is not possible, induces the cell apoptosis by the second way. In tumours p53 gene is mutated and it is not able to play its roles. Because of this, the aim of this study is to assess the association between VEGF and p53 in human oral squamous cell carcinoma. Tumour specimens from 51 patients with oral squamous cell carcinomas were examined. Expression of VEGF and p53 was determined using an immunohistochemical method. The results indicate that there is a major VEGF expression when p53 is overexpressed. Moreover, when p53 expression appears in the cytoplasm VEGF has a tendency to locate in hypoxic areas. We can conclude that p53 plays an important role in tumour vasculogenesis and the tumours with better differentiation have more VEGF expression in hypoxic areas, where it is necessary to develop new blood vessels.

193 THE RELATIONSHIP OF NITRIC OXIDE AND HEME-OXYGENASE-1 IN IMMORTALIZED AND MALIGNANT HUMAN ORAL KERATINOCYTES

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In order to investigate the effect of NO donor, S-nitroso-N-acetyl-DL-penicillamine (SNAP) on growth and heme oxygenase-1 (HO-1) expression in human oral immortalized (HaCaT, IHOK) and malignant keratinocytes (HN4, HN12), MTT assay and Western blot analysis was performed. Oral keratinocyte growth inhibitory or anti-proliferative effects were exerted by SNAP and hemin treatment in a dose- and cultivation time-dependent manner. The level of HO-1 protein increased in all cell types after hemin treatment, displaying the maximum expression of HO-1 protein in 12 h. Oral keratinocyte cell death can be stimulated by both hemin and SNAP in immortalized and malignant keratinocytes. The pretreatment of cells with 0.2 mM SNAP reduced 1.0 mM SNAP-induced death in IHOK and HN4 cells. These

cytoprotective effects on high dose of NO induced HO-1 expression and cellular toxicity were blocked by low dose of SNAP, HCB, and ZnPP IX. A low dose of NO-mediated cytoprotection against high dose NO cytotoxicity was noted in IHOK, while HCB NO priming effect was found in all immortalized and malignant keratinocytes. These data suggest that the NO donor increases HO-1 expression in human keratinocytes through heme oxygenase/NO pathway for cell death, and also indicates that HO-1 is involved in the cytoprotection by NO priming against high dose NO induced cytotoxicity in the immortalized and malignant oral keratinocytes.

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N-MYRISTOYLTRANSFERASE ACTIVITY IN ORAL CARCINOMAS

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Myristoylated proteins in the cell have diverse biological functions such as signal transduction, cellular transformation and oncogenesis. Previous studies have shown that N-Myristoyltransferase (NMT) is more active in colon epithelial neoplasms than in normal appearing colon tissue and an increase in NMT activity appeared at an early stage in colon carcinogenesis. To our knowledge, there are no studies regarding the expression of NMT in oral cancer. Therefore, the purpose of the present study was to investigate the activity of NMT in both oral carcinoma and normal oral mucosa tissues. Fresh surgical pathology specimens and normal oral mucosa specimens from each of five patients who had undergone resection of oral carcinomas were collected and then frozen. N-myristoyltransferase activity was assayed according to previously described procedure. An approximately 3.5 to 7.5-fold increase in NMT activity was observed in the tumors as opposed to normal tissue using a pp60src derived peptide. These findings represent the first description of NMT activity in oral carcinomas and suggest that overexpression of NMT is not specific for colon cancer. Further studies are warranted to assess NMT localization by immunohistochemistry analysis. **Acknowledgements:** The study was supported by the Head and Neck Cancer Foundation of Toronto, Ontario, Canada.

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MOLECULAR DETECTION OF HAEMATOGENOUS AND LYMPHATIC SPREAD OF TUMOUR CELLS IN HEAD AND NECK CANCER

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A reverse-transcriptase polymerase chain reaction (RT-PCR) for keratin 5 mRNA spliced transcripts was used to detect tumour cells in venous blood in 50 patients and in cervical lymph nodes in 28 of these patients. Arm vein blood samples were positive in 15 (30%) of 50 patients before treatment, two (4%) of 46 patients after treatment and in neck vein samples preoperatively in eight (22%) of 35 patients tested. Interestingly, all 19 pre-treatment or preoperative positive patients, reacted negatively post-treatment ($P = 0.001$). In four (8%) of patients, neck vein blood provided the only positive sample. Of the 28 patients whose lymph nodes were also tested, nine (32%) patients had K5 mRNA positive blood and nodes (B+/LN+), two (7%)

patients had positive blood samples and negative nodes (B+/LN-), 15 (54%) patients had negative blood and positive nodes (B-/LN+), and in two (7%) patients both blood and nodes were negative (B-/LN-). Of 197 lymph nodes suitable for analysis, 21 (11%) lymph nodes were positive for metastatic tumour detected both by light microscopy and K5 RT-PCR, 36 (18%) nodes were histologically negative but K5 RT-PCR positive and 140 (71%) nodes were negative with both tests. K5 mRNA positive blood and lymph nodes were more frequent in TNM stage II, III and IV disease compared with stage I and with higher grade tumours. Positive tests on blood but not lymph nodes were more frequent in recurrent compared with primary cancer. None of these differences were statistically significant. At 8 months median follow-up all the six (12%) patients who have died of the disease or developed recurrences, had K5 mRNA positive blood and lymph nodes. K5 mRNA testing of blood and lymph nodes may therefore identify a more aggressive type of head and neck cancer.

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GSTT-1 GENE DELETION AND SUSCEPTIBILITY TO ORAL SQUAMOUS CELL CARCINOMA IN CIGARETTE-SMOKING SUBJECTS

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Objective: Oral squamous cell carcinoma (OSCC) is related to tobacco use and alcohol consumption and the individual susceptibility for development of this tumor has been associated with xenobiotic-metabolizing enzymes polymorphisms. Glutathione S-transferase theta-1 (GSTT1) is a phase II metabolic enzyme that catalyses detoxification reactions of carcinogenic compounds. The GSTT1 gene is characterized by a genetic polymorphism causing a complete gene deletion and consequent absence of the enzyme. The null genotype (gene deleted) of GSTT1 has a decreased capacity in detoxifying carcinogens present in tobacco smoke, leading the formation of DNA-adducts and DNA damage. The purpose of the present study was to evaluate the association between GSTT1 polymorphism and risk for OSCC development in a Brazilian population. **Methods:** We investigated the GSTT1 polymorphism in 87 patients with OSCC and 81 age-sex matched controls. The genotypes were studied by PCR-based methods. Individuals homozygous for the wild-type GSTT1 (+/+) and heterozygous (+/0) were grouped together. **Results:** The frequency of GSTT1 deletion in the group with OSCC (83.9%) was statistically different from the control group (42.0%) (O.R. = 7.2, $P < 0.05$). The prevalence of GSTT1 deficiency (null) was significantly higher for patients with oral cancer of the floor of the mouth (O.R. = 13.82, $P < 0.05$). **Conclusion:** The results suggest that GSTT1 polymorphism may increase the risk for OSCC development.

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A COMPARATIVE STUDY OF SQUAMOUS CELL CARCINOMA OF THE ORAL MUCOSA

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Squamous cells carcinoma is the most common oral malignant tumor. The aim of the present study was to compare the epidemiology of the squamous cell carcinoma during the periods 1980–1989 and 1990–1999. Clinical histories were revised with diagnosis of malignant tumor of the oral cavity during the periods 1980–1989 and 1990–1999. The histories belong to patients who attended to the service of Head and Neck of the Instituto de Enfermedades Neoplásicas 'Dr Eduardo Caceres Graziani'. The following clinical parameters were analyzed: age, distribution

according to sex and localization. We performed the statistical analysis of the clinical parameters assessed. The squamous cell carcinoma represents 66% of all neoplasias of the oral cavity. We thus performed comparative analysis of the following dates: 369 cases over the period 1980–1989 and 579 cases over the period 1990–1999. The squamous cell carcinoma was frequent in patients over 40 years old (94.3% during 1980–1989, 92% during 1990–1999). The seventh and octave decade of life were the more affected. The distribution according to sex showed a larger incidence for man: 1.5:1 for the period 1980–1989, while it was more frequent for women in a relationship: 1.2:1 for the period 1990–1999. The most frequent localization was the tongue 36% in 1980–1989 and 41.3% in 1990–1999. The analysis shows that the prevalence of squamous cell carcinoma in women has increased progressively.

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DNA VACCINES AGAINST HAMSTER ORAL PAPILLOMAVIRUS-INDUCED ORAL CANCER

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In a previous investigation, we developed a highly reproducible carcinogenesis model by combining DMBA application with physical wounding of the hamster lingual mucosa. Using this animal model, we demonstrated the presence of a novel hamster oral papillomavirus (HOPV) by the molecular cloning and sequencing of this viral genome. In this study, we used the HOPV hamster model to test whether vaccination with either the L1, E6 or E7 genes alone could prevent oral carcinoma development. An immunization protocol using intramuscular injection of DNA plasmids encoding the L1, E6 or the E7 gene or vector only, respectively was initiated to 40 hamsters. The lingual tips of hamsters were painted three times a week with DMBA for 8 weeks. The middle portion of the lingual tip, 2 mm in longitudinal thickness, was then excised under anesthesia. Thereafter, the tips were painted daily with DMBA until the animals were sacrificed. The all vector-injected hamsters showed lingual carcinoma. Some delay in cancer development in the L1, E6 and E7-vaccinated hamsters was observed. In particular, L1 vaccinated 6 hamsters and E6-vaccinated 7 hamsters showed no lesions. These results suggested that immunization with L1, E6 and E7 DNA vaccines delayed carcinoma development of papillomavirus-induced oral cancer.

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PSEUDOANGIOSARCOMATOUS SQUAMOUS CELL CARCINOMA: DISEASE PROGRESSION AND MULTIDISCIPLINARY APPROACH

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Skin squamous cell carcinoma is relatively frequent disease today. However its spread through lymphatic pathways are not such frequent and the other forms of disease progression, such as perineural invasion and subjacent structure affectation, are even less known. We present the case of the patient diagnosed as multiple queratosis in the malar region, which was treated surgically previously. Posterior to this treatment he presented multiples recurrence in the scar region in spite that all histological analysis showed margins free of tumor. The patient was remitted to our Clinic due to existence of an insidious ulcer lesion in the parotid region. He was treated again surgically with parotidectomy and radiotherapy. During application of radiotherapy the patient presented certain symptoms which indicated urgent hospitalization due to infratemporal and pterygomaxillar tumor spread. We present a case with very rare dissemination of this type of

tumor, causing the problems of diagnostics and tumor extension verification, in an anatomic region that suffered destruction by application of various types of treatment.

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SECONDARY ORIGIN OF INITIAL SQUAMOUS CELL CARCINOMA IN ORAL CAVITY REGION

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Caucasian male from 56 years of age was remitted to our Clinic as a T₄ N₂ M₀ poorly differentiated squamous cell carcinoma. After all clinical and radiological examinations he was operated performing mandibulotomy, glossectomy, laryngectomy and bilateral neck dissection as well as pectoral arterial island flap reconstruction, resulting in a complete removing of tumor. Three months later he underwent radiotherapy applying maximal dose of 70 Gy. Two years later an ulcer appeared in the central part of lower lip. We performed biopsy receiving result as moderate differentiated squamous cell carcinoma. Posterior he was submit to surgical intervention were the tumor was extirpated completely and reconstruction with arterial flaps of lower lip was done satisfactory.

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SQUAMOUS CELL CARCINOMA INITIALLY TREATED AS AN OSTEOMYELITIS OF MANDIBLE

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Male patient, 46 years of age was remitted to our Clinic after teeth extraction 46 and 47, presenting a wound that was not healing. An ulcer from 2 cm in diameter was present at local site. We performed biopsy twice always with result negative for malignancy, indicating inflammation which lead us to the diagnosis of an osteomyelitis confirmed also by gammagraphy of mandible. Waiting for the surgical intervention we applied huge antibiotic therapy following culture result obtained. Meanwhile pathological fracture of mandible occurred. We performed than hemimandibulectomy and for surprise we got the result as well differentiated squamous cell carcinoma of the mandible. As soon as possible we performed second intervention in which we extended intraoral mucous zone, radical neck dissection with submandibular skin excision and pectoral muscle arterial flap reconstruction. Extirpation of tumor was total. Patient was remitted to the radiotherapy.

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BASALOID SQUAMOUS CARCINOMA OF THE ORAL CAVITY. A CLINICOPATHOLOGICAL STUDY OF SIX CASES

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Objective: Basaloid squamous carcinoma (BSC) of the upper aerodigestive tract seldomly involves the oral cavity. This study has been designed to define the clinicopathological characteristics of this tumor in this area. **Methods:** We have retrospectively reviewed the histological slides and clinical data of primary carcinomas of the oral cavity collected in our files during a 87 month period (Jan 97 – March 04). **Results:** An amount of 469 carcinomas of the oral

cavity were diagnosed 6 of them being BSCs. All the patients were males between 54 and 72 years old (mean: 64 years). Three of the cases were palatal ulcero-infiltrating tumors (stages, I, II, and IVA). Two cases were located in the floor of mouth (stages I and II). One case grew in the anterior tongue (stage IVA). In five cases the basaloid component predominated in primary tumors, recurrences, as well as in their metastases. Two cases showed perineurial invasion. All the cases displayed positive immunoreaction with keratins. Myoepithelial and neuroendocrine phenotype were not demonstrated. Five cases were treated with radical surgery and radiochemotherapy. Three cases recurred and metastasized. Four patients died of tumor between 11 and 46 months of follow-up. **Conclusions:** BSC is an aggressive clinicopathological entity. It has a worse prognosis than high-grade conventional squamous cell carcinoma at the same stage.

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EVALUATION OF SCREENING STRATEGIES FOR IMPROVING ORAL CANCER MORTALITY: A COCHRANE SYSTEMATIC REVIEW

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Objectives: The aim of this paper was to systematically review the literature relating to the effectiveness of specific screening techniques for oral cancer in asymptomatic individuals with a view to informing current practice. A secondary objective was to assess the effectiveness of early stage detection and morbidity. **Methods:** A developed search strategy was used to scrutinise all publications in MEDLINE, CANCERLIT, EMBASE and Cochrane CCTR between 1966 and September 2002 on the effectiveness of screening of oral cancer. The evidence was evaluated using the standardized methodology of the Cochrane Collaboration. **Results:** The search found 1389 citations from which 100 papers were selected for review. Only one randomized controlled study using visual examination as the method for screening fulfilled the selection criteria. Given the limitation of evidence and the potential methodological weakness in the included study, it is valid to say that there is no evidence to recommend inclusion or exclusion of screening programmes for oral cancer using visual examination in the general population. In addition, no robust evidence exists for other methods of screening: toluidine blue, fluorescence imaging or brush biopsy, to be either beneficial or harmful. **Conclusions:** Further high quality studies to assess the efficacy and effectiveness of screening are required. Additional research aimed at elucidation of the natural history of oral cancer, and the effectiveness of prevention and opportunistic screening in high-risk groups are needed. A greater understanding of the genetic basis of oral cancer is an essential prerequisite to the development of molecular markers for screening.

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ROLE OF CSMD1 IN HEAD AND NECK CARCINOGENESIS

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Hemizygous deletions at chromosome band 8p23 are a relatively common occurrence in oral and oropharyngeal squamous cell carcinomas (OSCC) and many other cancer types, suggesting the presence of a tumor suppressor gene (TSG) in this region. We and others have also identified a number of homozygous deletions in OSCC and other head and neck squamous cell carcinomas (HNSCC). Recently, a putative TSG, CUB and sushi multiple domains-1 (CSMD1) has been identified at this locus

based on a single region of homozygous deletion in HNSCC. This is a very large gene of unknown function, spanning over 2 Mb of the genome and consisting of up to 71 exons. A number of alternatively spliced transcripts are described and it is weakly expressed in most tissues except the brain expression where higher levels of expression are observed. In order to elucidate the role of this gene in OSCC, we have mapped our previously described homozygous deletions in three OSCC cell lines at a high resolution onto a detailed physical map that covers a wider region than that used in previous studies. Our results revealed an unusual pattern of homozygous deletions involving multiple regions within a small interval on chromosome band 8p23. To investigate this deletion pattern further we generated a panel of 34 sequence tagged site (STS) markers spanning the region. Altogether we tested these three cell lines and an additional 34 OSCC cell lines and identified homozygous deletions in a further four cell lines. Combining the results from all the seven cell lines identified three non-overlapping regions of homozygous deletions. There are several possible explanations for this complex pattern of deletion. It could be consistent with the presence of multiple TSGs or one very large TSG in this region, and/or specific chromosomal instability. CSMD1 spans two of the three deleted regions and, therefore, would appear to be an excellent candidate for a TSG. However, deletion mapping with STSs corresponding to the exons of CSMD1 show that in some of the cell lines the coding region is interrupted by two discontinuous homozygous deletions, possibly suggesting the presence of redundant deletions. However, this pattern could also result from complex rearrangement of 8p23.2 (such as deletion with inversion). A final possibility is that the deletions play no causal role in tumorigenesis but that this region is specifically unstable in tumors. Further studies are in progress to characterise the gene and its product, examine the nature of the chromosomal breakage in this region and identify other possible inactivating events.

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RETINOBLASTOMA STAINING IS A PREDICTOR OF RESPONSE TO INTENSIVE CHEMORADIATION FOR HYPOPHARYNGEAL CANCER

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Objective: The EORTC organ preservation trial 24981 was pivotal in demonstrating that intensive chemoradiation regimens could achieve results equal to surgery for hypopharyngeal squamous cell carcinoma. The objective of the present study was to determine whether tumour markers could predict lack of response to chemoradiation. **Method:** A retrospective study of paraffin blocks from the chemoradiation arm ($n = 100$) was undertaken using immunohistochemistry for pRb, p16INK, p21 and p53. TP53 mutations in exons 5–9 were determined using high throughput technology. Complete data could be obtained from only 41 blocks. **Results:** Multivariate analysis showed that loss of pRb staining correlated with time to loco-regional progression using a 2-tailed test ($P = 0.028$). No other markers showed significant correlation with regard to time to loco-regional failure and none of the markers correlated with clinical outcome at 3 years. **Conclusion:** Loss of pRb staining is a predictive marker for lack of response to chemoradiation for hypopharyngeal squamous cell carcinoma but is not a prognostic marker. The study power was limited by tissue availability. Future chemoradiation trials of head and neck cancer should include prospective collection of tissue with layered consent for translational research.

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PREVALENCE OF LYMPHOMAS IN UAT

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Introduction: Lymphomas are a variety of neoplasms that origin of the lymphatic system and endothelial reticulum which clinically can appear in located or scattered form. In lymphomas, some of the cells of the lymphatic system are multiplied without control and they convert into solid tumors that appear particularly in peripheral tissues of the lymphatic nodules, the skin, the pharynx, and other sites. The main kinds of lymphomas are the lymphoma Hodgkin, the lymphoma non-Hodgkin, and between the rare forms are the Lymphoma Burkitt and the Mycosis Fungoides. **Objective:** To describe the clinical characteristics of the lymphomas Hodgkin, presenting three specific clinical cases with oral manifestations. **Method:** A total of 74 files of the service of Oral Pathology and Histopathology were reviewed of the Dentistry Department UAT, during the period of January, 2000 to December, 2001. Of the five cases (6.7%) of neoplasms three clinical cases were selected (4.0%) with lymphomas non-Hodgkin in subjects with a rank of age of 11–43 years in average 26 years. **Results:** The obtained histopathology diagnosis of the three cases was of lymphoma non-Hodgkin of small cells, lymphoma non-Hodgkin of mixed cell and lymphoma lymphoblast non-Hodgkin respectively. **Discussion and conclusions:** The early diagnosis of this type of neoplasms is of extreme importance for the clinical handling and its prognosis. The time of evolution of the injuries varies in each patient and with each type of lymphoma, as well as the treatment. Unfortunately this type of neoplasms is lethal in the short term for most patients.

207 BRACHYTHERAPY VERSUS EXTERNAL BEAM RADIATION THERAPY: TISSUE RESPONSE

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Treatment of oral carcinoma must be multidisciplinary, surgical and based on radiation therapy. Physicians use different techniques to irradiate tissue attending tumor volume, location and organs at risk near radiation field. The main objective of this poster is to analyze the tissue response depending on radiation technique used to treat oral cancer, and its medical implications. This will allow the clinician to do a better approach of that patient's management, with a consequent improvement of quality of life.

208 SPONTANEOUS REMISSION IN NON-HODGKIN'S LYMPHOMA OF B CELLS

M. R. da Silva

Lymphomas are malignant neoplasms that attack the lymphatic system. They appear in several ways, are considered tumors of difficult diagnosis and treatment and of unfavorable prognosis. The aim of this research paper is to report the case of a patient who came to the Stomatology Unit with a mouth lesion, diagnosed as non-Hodgkin's Lymphoma (LNH) of the B cells. The lesion presented spontaneous remission without any sort of treatment.

209 A CASE OF ORAL LYMPHOMA FOLLOWING A HEART TRANSPLANT

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Post-transplantation lymphoproliferative disorders (PTLD) are a frequently fatal complication occurring after transplant and eventually it occurs in approximately 5% of all organ transplant recipients. Most cases are B-cell proliferations. T-cell (PTLD) is relatively rare; although some estimates show that up to 14% of post-transplantation malignant lymphomas are T-cell lymphomas. The etiology of these disorders is unclear, however, EBV (Epstein-Barr virus) in the context of immunosuppression is thought to play a role, particularly in B-cell PTLD. These lymphomas have a particularly bad prognosis when they develop at the site of the allograft. In this report, we describe a 53-year-old male who developed an oral B-cell lymphoma in the palate after a period of 10 years following cardiac transplant. He also presented a chronic erythematous candidosis in the dorsum of the tongue.

210 OVER-EXPRESSION OF TRANSFORMING GROWTH FACTOR- β 1 IN SMAD4-DEFICIENT HUMAN ORAL CARCINOMA CELLS CAUSES TUMOUR REGRESSION *IN VIVO* BY AUTOCRINE AND PARACRINE MECHANISMS THAT INDUCE APOPTOSIS

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This study examined the effect of over-expressing transforming growth factor- β 1 (TGF- β 1) in Smad4-deficient human oral carcinoma-derived cells. Cells were transfected with latent TGF- β 1 cDNA and cells over-expressing the ligand showed a marked reduction in primary tumour formation at 60 days following orthotopic transplantation to athymic mice compared to controls with normal TGF- β 1 production. Expression of dominant-negative type II receptor (dn-T β R-II) in cells over-expressing TGF- β 1 partially attenuated the tumour suppressor effect of the ligand. Grafts of cells over-expressing TGF- β 1 showed viable tumours in all animals up to 21 days following transplantation. However, by 42 days primary tumours consisted of degenerative epithelium surrounded by mature fibrous tissue and no tumours were evident in 25% of animals. By contrast, 100% of animals transplanted with control cells showed infiltrative tumours, absence of epithelial degeneration and little peri-tumour fibrosis. Furthermore, grafts of tumour cells that over-expressed TGF- β 1 had significantly more apoptotic cells than controls. Grafts of cells over-expressing TGF- β 1 and dn-T β R-II demonstrated significantly less apoptosis than cells that over-expressed the ligand alone, thereby confirming that autocrine effects played a role, at least in part, in the regression of primary tumours. By contrast, the mitotic index remained unchanged irrespective of whether the cells over-expressed TGF- β 1 or expressed dn-T β R-II. These results demonstrate that TGF- β 1 causes tumour regression by Smad4-independent autocrine and paracrine mechanisms that induce apoptosis without altering cell proliferation.

211 THE EFFECT OF BLOCKING THE EXPRESSION OF TGF- β 1 AND MMP-2 MRNA ON ORAL SQUAMOUS CELL CARCINOMA CELL LINE

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Purpose: TGF- β 1 and MMP-2 are expressed in oral cancer, but the definite correlation has not been made of their expression patterns. The presence or the absence of one may alter the effect, production, and/or

expression of another. Thus, suppressed expression of TGF- β_1 or MMP-2 in oral SCC cell line would influence the expression of genes related to TGF- β_1 or MMP-2. **Materials and methods:** SCC-9 cell line was used for this experiment. Oligonucleotides were designed on the base of two-dimensional structure of TGF- β_1 and MMP-2 and synthesized using phosphorothioate. The antisense blocking was confirmed with RT-PCR, SDS-PAGE, and western blotting. The cDNA from samples were analyzed with the cDNA microarray technique. **Results:** The effects of antisense treatment were confirmed by RT-PCR and western blotting. The FAT tumor suppressor homolog 2, natural killer cell receptor, tumor necrosis factor receptor superfamily, BMP-5, collagen (type IV, alpha 1), and FGFR3 were up-regulated and the BarH-like homeobox 2, DEK oncogene, FGFR2, and TGF- α were down-regulated after TGF- β_1 antisense treatment. The mitogen-activated protein kinase kinase 4, transcription factor AP-2 alpha, IL-11R α , MHC (class II, DP beta 1), CD53 antigen, CD5 antigen, and complement component 4B were up-regulated and the integrin α_6 , caspase 6, caspase 5, and EGFR were down-regulated after MMP-2 antisense treatment. **Conclusion:** The blocking of TGF- β_1 and MMP-2 altered the expression of the genes that are potentially implicated in carcinogenesis as well as others not previously linked to the expression of TGF- β_1 and MMP-2. Further investigation of these genes are needed to determine the clinical relevance and possible therapeutic modality.

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ROLE OF Cks1 OVEREXPRESSION IN ORAL SQUAMOUS CELL CARCINOMAS: COOPERATION WITH Skp2 IN PROMOTING p27 DEGRADATION

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Down-regulation of p27, a Cdk inhibitor, is frequently observed in about 90% of oral squamous cell carcinoma (OSCC) due to its enhanced degradation. Skp2, an F-box protein, is required for the ubiquitination and consequent degradation of p27 protein. We previously reported that Skp2 overexpression is well correlated with p27 down-regulation in OSCC. Cks1 is also required for the ubiquitination of p27 by acting as an accessory protein in the SCF^{Skp2} ubiquitinating machinery. In the present study, we examined the Cks1 expression and its correlation with p27 in OSCC. High expression of Cks1 was present in 63% of OSCCs and was well correlated with Skp2 expression. To study the role of Cks1 overexpression in p27 down-regulation, we transfected Cks1 with or without Skp2 into OSCC cells. Ectopic Cks1 expression could not induce p27 down-regulation by itself, but ectopic expression of both Cks1 and Skp2 strongly induced p27 down-regulation. Moreover, we inhibited Cks1 expression by siRNA. Cks1 siRNA transfection induced p27 accumulation and inhibited the growth of OSCC cells. These findings suggest that Cks1 overexpression may play an important role for OSCC development through Skp2-mediated p27 degradation, and that transfection of Cks1 siRNA can be a novel modality of the gene therapy for OSCC.

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EXTRACAPSULAR SPREAD (ECS) IN HEAD AND NECK CANCER, MICROSCOPIC AND MACROSCOPIC

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Objective: To examine both macroscopic (macro) and microscopic (micro) ECS in head and neck squamous cell carcinoma (HNSCC) with

regard to stage, primary site, pattern of invasion and stromal reaction. **Methods:** We reviewed sequential cases of node positive HNSCC, documenting stage, primary site, pattern of invasion of the primary, extent of ECS, both macro and micro and presence of a stromal reaction to ECS. The Pearson Chi square and Fisher's exact tests were used. **Results:** Of 80 cases, 28 had macro ECS and 35 micro ECS, and of the latter, 20 had micro ECS only. Although ECS was overall more common in T4 tumours, there was no correlation between ECS and stage in T1, 2 and 3 tumours, with 8 of 12 T1 tumours (66%) showing ECS. Of these 8, 4 had micro ECS involving a single node. In micro ECS-only cases, ECS was identified in a single node in 45%. A non-cohesive invasion pattern was associated with micro ECS, but not macro ECS. A stromal reaction was almost always present although sometimes focal, with some areas of tumour eliciting no stromal response. In a single case (1/63) stromal reaction was absent. ECS did not correlate with primary site. **Conclusion:** Microscopic ECS is more common than macroscopic ECS. ECS is common in node positive T1 tumours (66%). Unexpectedly, microscopic ECS does not correlate with T stage.

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DIFFERENTIAL EXPRESSION OF EXTRACELLULAR MATRIX MOLECULES IN CO-CULTURE OF SQUAMOUS CELL CARCINOMA CELLS AND FIBROBLASTS

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Objectives: Extracellular matrix (ECM) molecules play an important role in proliferation, invasion, and metastasis of tumor cells. However, it is poorly understood which cells, tumor cells or stromal cells, are responsible for the production of ECM molecules in the neoplastic stroma. To understand how these two cell types participate each other in it, the expression level of ECM molecules was examined in two kinds of co-culture system of oral squamous cell carcinoma cells and fibroblasts. **Methods:** Co-culture experiments were performed in direct and indirect (transwells) contacts of ZK-1, a human squamous cell carcinoma cell system of tongue origin and OF1, a human fibroblast cell system of mandibular bone origin. The production levels of ECM molecules, perlecan, tenascin, fibronectin, and laminin were compared between single cell culture and co-culture by immunofluorescence and RT-PCR in the time course until their confluency. When co-cultured in direct contacts, carcinoma cells and fibroblasts were distinguished by immunofluorescence for keratin and vimentin, and microdissected separately by laser capturing. **Results and conclusion:** In indirect co-cultures by using Transwell systems, total expressions, both at mRNA and protein levels, for perlecan and tenascin were higher than those in single cultures. Those by OF1 were significantly higher than ZK-1 in co-cultures. Similar tendencies were obtained in direct co-cultures. In addition, immunofluorescence for keratin in ZK-1 was enhanced in co-cultures. The results indicate that carcinoma cells are able to produce ECM molecules in the absence of stromal fibroblasts but that they decrease in the production of ECM and are more differentiated in the presence of fibroblasts. Since total amounts of ECM expression levels were enhanced in the co-cultures, fibroblasts seem to be activated by carcinoma cells. Therefore, it is suggested that activated fibroblasts are more responsible in forming neoplastic stromata.

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TONGUE CARCINOMA INVASION IS REDUCED BY GELATINASE INHIBITING SMALL PEPTIDES

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Oral squamous cell carcinoma is the sixth most common solid tumour, representing about 5% of all malignancies. The cyclic CTHWGFLLC (CTT)-peptide inhibits the activities of gelatinases MMP-2 and MMP-9. The CTT-peptide inhibits the growth and *in vitro* invasion of endothelial and cancer cells, and improves the survival of mice bearing human cancers (Koivunen et al. Nature Biotechnol. 1999). Since gelatinases are important for tongue SCC progression the CTT-peptide and its derivatives could provide potential therapeutic tools for the treatment of tongue SCC. The CTT-peptide and its new derivative CTT2-peptide were used to analyze the gelatinolytic activity of tongue SCC cell line HSC-3 using iodinated gelatine degradation assay and β -casein zymography. The effects of the peptides were compared using *in vitro* Transwell cell migration and Matrigel invasion assays. *In situ* gelatine zymography of tongue SCC frozen tissue sections and the spreading of HSC-3 in mice were used to assess the *in vivo* effect of the peptides. Dynal immunomagnetic analysis and immunocytochemical staining techniques were used for the detection of the micrometastasis in peripheral blood cell suspension. The CTT2-peptide was slightly more effective than the CTT-peptide in dose dependently inhibiting *in vitro* invasion and migration of HSC-3 cells. Both peptides inhibited the degradation of the 21-kDa β -casein and the gelatinolytic activity of HSC-3 cells. *In situ* zymography revealed the inhibition of the gelatinolytic activity in tongue SCC tissue sections by both peptides. The immunomagnetic method was suitable for the detection of MMP-9 containing HSC-3 cells in the blood cell suspension. CTT- and CTT2-peptides being selective inhibitors for gelatinases and inhibiting the invasion of tongue SCCs might be useful for the treatment of tongue carcinomas in patients with high gelatinolytic activity in primary tumours and micrometastases.

216 EXPRESSION OF Nup88 IN EARLY ORAL SQUAMOUS CELL CARCINOMA

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Objective: The aim of this study was investigate if Nup88 is over-expressed in early squamous cell carcinoma and if this expression has a prognosis value. **Materials and methods:** A monoclonal antibody showing cross-reactivity between the yeast *Candida albicans* and Nup88, a nuclear pore complex protein expressed by human tumors, was used to investigate the expression of Nup88 in 34 early oral squamous cell carcinomas (EOSCC). **Results:** The expression of Nup88 was mostly located in the cytoplasm and extracts from EOSCC showed specific bands of 47–40 and 70 kDa that were not observed in normal oral mucosa. Highest levels of Nup88 expression were observed in 13 (38.2%) tumors. The Kaplan-Meier test showed median survival time to be shorter in EOSCC cases with the highest expression of Nup88. **Conclusion:** Overexpression of Nup88 by EOSCC is associated with a poor prognosis. *This investigation was supported by grant 9/UPV00095.327–12086/2000 from Universidad del País Vasco EHU.

217 MISTLETOE EXTRACT-INDUCED APOPTOSIS IN ORAL SQUAMOUS CELL CARCINOMA

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Mistletoe extract-induced apoptosis in various carcinomas has been controversial. This study was performed to investigate mistletoe extract-induced apoptosis in the induced oral squamous cell carcinoma. After tumor mass was experimentally induced in nude mice by oral squamous carcinoma cell line (HN22), mistletoe extract was directly injected on the tumor mass. The specimens were morphologically evaluated using light and transmission electron microscope. These cell lines were cultured and exposed to mistletoe extract. The cells were evaluated by transmission electron microscope and flow cytometric analysis for evaluating apoptotic cells. Mistletoe extract induced necrosis and apoptosis in the tumor mass induced by cell line, and also showed early and late stage of apoptosis *in vitro* study. It suggested that Mistletoe extract should play an important role in apoptosis of the induced oral squamous cell carcinoma.

218 EXPRESSION OF CHEMOKINE RECEPTORS IN ORAL SQUAMOUS CELL CARCINOMAS

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Chemokines represent a large family of polypeptide signaling molecules that are notable for their role in chemotaxis, leukocyte homing, directional migration, and G protein coupled receptor activation. Recently, chemokines have been implicated in tumor progression and metastasis. The findings indicate that the chemokine receptors are found on cancer cells and their ligands are highly expressed at the sites associated with cancer metastasis. To determine whether chemokine receptors are expressed in oral squamous cell carcinoma (OSCC), four oral cancer cell lines (SCC-4, 9, 15, and KB) and normal human oral keratinocytes (NHOK) were examined by RT-PCR for the expression of the chemokine receptors such as fractalkine, CCR1–11, and CXCR1–5. The expression of CXCR4 of OSCC cell lines was examined by flow cytometry, and CXCR4 expression of 20 OSCC was also explored using immunohistochemistry. The results were as follows: (1) CCR10 and CCR11 mRNA were detected in all the OSCC cell lines examined. (2) CXCR1 mRNA was expressed in the SCC-15 and the KB cell line, CXCR4 mRNA was expressed in the KB cell line, and CXCR5 mRNA was consistently detected in SCC-9 cell line. (3) CCR10 mRNA was detected in NHOK, but CCR11 mRNA was not expressed in NHOK. (4) Cell surface expression of CXCR4 protein was evidently detected in the KB cell line by flow cytometry. (5) Thirteen of the 20 OSCCs showed positive immunohistochemical expression of CXCR4. To summarize these above results, the expression pattern of chemokine receptors was different between OSCC cell lines, but CCR11 mRNA was distinctively expressed in all the OSCC cell lines. CCR10 mRNA was detected in the cells originated from both normal and neoplastic epithelial cells. The expression pattern of mRNA was identical to that of protein. Further studies as to the role of their expression in OSCC should be undertaken.

219 PLOIDY HETEROGENEITY IN ORAL SQUAMOUS CELL CARCINOMAS

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Some oral squamous cell carcinomas appear heterogeneous when DNA ploidy (large scale genomic status) is assessed in multiple samples and this has implications for the pathogenesis of malignancy. The objective was to assess heterogeneity in oral carcinomas by image-based ploidy analysis. **Methods:** Multiple areas

5 mm × 2 mm from diverse parts of carcinomas. Nuclei were extracted by enzyme digestion from corresponding samples from the paraffin block, monolayers of nuclei prepared by cytospin and stained by the Feulgen technique. Ploidy was determined on an automated Fairfield ploidy analyser using the criteria of Sudbo et al. (NEJM 344:1270) and histological features scored on subjective scales. **Results:** Twenty-two of 45 carcinomas were uniformly aneuploid, 2 uniformly tetraploid and 5 uniformly diploid. 16 appeared heterogeneous but histograms revealed sub-threshold ploidy changes in all samples from 10 cases, suggesting that sampling error accounted for the apparent heterogeneity. The remaining 6 cases appeared genuinely heterogeneous. Ploidy was closely linked to nuclear pleomorphism ($P < 0.000$) but not to keratinisation on analysis by biplot and Somers D, suggesting that failure to detect infrequent aneuploid cells in heavily keratinised carcinomas does not account for heterogeneity. We conclude that most oral carcinomas are aneuploid (82%). Sampling error accounts for apparent heterogeneity in some lesions. 13% appear truly heterogeneous. Ploidy correlates with nuclear pleomorphism but not keratinisation.

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EFFECTS OF NICOTINE ON PROLIFERATION, CELL CYCLE, AND DIFFERENTIATION IN HPV IMMORTALIZED AND MALIGNANT ORAL KERATINOCYTES

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In order to investigate the effect of nicotine on the growth, cell cycle and differentiation of immortalized human oral keratinocytes (IHOK), primary oral cancer cell (HN4), and metastatic oral cancer cells (HN12), human skin keratinocytes (HaCaT), the three-dimensional raft culture was performed and followed by MTT assay, Western blotting, and cell cycle analysis. In MTT assay, nicotine inhibited that all kind of immortalized and malignant keratinocytes proliferation dose and time dependently. The nicotine treatment usually increased the p21 expression but decreased the Rb and p53 expression. After the high dose nicotine treatment the CK13 and CK16 expression markedly decreased in HN4 and HN12 cells, and the CK19 expression rapidly decreased in IHOK cells, while involucrin and transglutaminase II expression increased in IHOK cells. In flow cytometry, nicotine inhibit cell cycle progression by not causing apoptosis or cell death, but does induce arrest at the G0/G1 arrest of HaCaT, IHOK, HN4 and HN12 cells. 3-dimensional organotypic culture revealed that nicotine treated cells showed less epithelial maturation, surface keratinization and decreased epithelial thickness. Therefore, we have demonstrated that nicotine inhibit proliferation, change epithelial differentiation in immortalized and malignant oral keratinocytes cells, and show a preferential effects on precancerous cells.

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AN IMMUNOHISTOCHEMICAL STUDY OF p53 IN ORAL EPITHELIUM DYSPLASIA AND SQUAMOUS CELL CARCINOMA

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Squamous cell carcinoma (SCC) is the commonest cancer in the mouth. Multiple risk factors, such as smoking, alcohol consumption, irradiation, viruses infection and chronic irritation are thought to be responsible for the formation of oral squamous cell carcinoma. Although SCC can develop through a series of precancerous stages

manifested as various degrees of epithelial dysplasia, this is not always the case. p53 is the commonest mutated gene in human cancers. Mis-sense mutation of the gene or complexing of the protein with viral or cellular proteins prolongs its half-life and leads to its detection by immunohistochemistry. This study was designed with the aim of demonstrating any possible relationship between p53 and oral squamous cell carcinoma by immunohistochemical staining techniques. A total of 66 specimens from the oral cavity (10 normal mucosa, 11 hyperkeratosis without dysplasia, 11 mild dysplasia, 11 moderate dysplasia, 10 severe dysplasia and 13 SCC) were examined for the presence of p53. The results show p53 was not expressed in normal mucosa, but was found with increasing frequency in increasingly severe dysplasia and SCC. In conclusion, this study shows p53 mutation is common in oral squamous cell carcinoma and probably occurs early in the multisteps of oral carcinogenesis.

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EXPRESSION OF L-TYPE AMINO ACID TRANSPORTER 1 (LAT1) AND 4F2 HEAVY CHAIN (4F2hc) IS ASSOCIATED WITH THE PROGRESSION OF ORAL SQUAMOUS CELL CARCINOMA

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Objectives: Amino acid transporters play an important role in supplying organic nutrient to cells. The expression of L-type amino acid transporter 1 (LAT1) and its subunit 4F2 heavy chain (4F2hc) was evaluated to determine the alterations to these transporters in oral normal mucosa (ONM), oral precancerous lesion (OPL) and oral squamous cell carcinoma (OSCC). **Materials and methods:** Sections from formalin-fixed, paraffin-embedded samples of ONM, OPL or OSCC were examined using immunohistochemical staining to detect LAT1 and 4F2hc proteins. **Results:** The LAT1 and 4F2hc expression increased progressively from ONM to hyperplastic and to dysplastic lesions and OSCC. In particular, LAT1 may be a more specific indicator of tumor progression than 4F2hc. **Conclusions:** The gradually increasing LAT1 and 4F2hc expression detected during the multistep progressive change shows that the protein may have an important role in the early stages of multistep oral carcinogenesis. In addition, the specific inhibition of LAT1 and 4F2hc might be a new rationale to suppress oral cancer progression. **Acknowledgements:** This work was supported by grant No. (R01-2002-000-00165-0 (2003)) from the Basic Science Research Program of the Korea Science & Engineering Foundation.

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SQUAMOUS CELL CARCINOMA (SCC) OF THE ORAL CAVITY AND OROPHARYNX. A CLINICO-PATHOLOGICAL STUDY OF 185 PATIENTS

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Introduction: The most common type of oral cancer is squamous cell carcinoma, which accounts for approximately 90% of all oral malignancies. Therefore the oral cancer problem primarily concerns the diagnosis, biology and management of squamous cell carcinoma (SCC). The frequency, location, gender, age and clinical diagnosis of the lesions were recorded. **Methods:** We have reviewed the clinical and histopathological records of patients from the 'Hospital Principe de Asturias' who were diagnosed with SCC by histopathology between 1 January

1988 and 31 December 1998. **Results:** We found 186 primary tumors from 185 patients (94% males, 6% females). The mean age was 58 years. The ages for men ranged from 22–90 years (mean age 59) and for women 42–78 years (mean age 68). The 46% of lesions were located in the lower lip. Other locations were: 13% base of the tongue, 11% tonsillar area and 9% floor of the mouth. The patients were treated in the Dermatology, Maxillofacial Surgery, General Surgery and ORL Departments. The mean waiting list time was 1 month. **Conclusions:** Despite the fact that the prevalence of SCC in males is well documented, our findings go further than expected. Additional studies are required to establish other etiopathogenic factors sex related that still remain unknown.

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SNAIL EXPRESSION IN A SPINDLE CELL CARCINOMA CELL LINE

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Spindle cell carcinoma is an extremely rare variant of squamous cell carcinoma (SCC), comprising up to 3% of SCC. It is recognized as a morphologically biphasic tumour showing a carcinoma that has surface epithelial changes (dysplasia to invasive carcinoma) and an underlying spindle-shaped neoplastic proliferation. The tumour we experienced was obtained from the mandible arising in a 35-year-old male patient. Histologically, the biopsy tissue showed areas of invasive poorly differentiated squamous carcinoma. Mucosal surface showed dysplastic change with ulceration. The tumor was mainly composed of atypical pleomorphic spindle cells proliferating in fasciculated patterns. In this study we established a cell line (YD-32), which was cultured with DMEM and F12 mixed medium and was grown more than 100 passages. We examined cytokeratin and vimentin expression by immunohistochemically. E-cadherin and snail mRNA expression was examined by RT-PCR. As Results, the biopsy tissue showed positive reaction for both anti-keratin (AE1/AE3) and anti-vimentin antibodies, while in YD32 cell line most cells showed positive reactions only for vimentin and a few cells positive for both vimentin and keratin (AE1/AE3). The YD32 cell line disclosed mRNA expression of Snail with no detectable E-cadherin mRNA. The result indicates that Snail expression in YD32 may be a driving event to a mesenchymal transformation of carcinoma cells. **Acknowledgements:** This study was supported by the Korean Ministry of Health and Welfare Grant No. HMP-00-B-20507-0177.

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SQUAMOUS CELL CARCINOMA: REPORT OF TWO CASES

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The squamous cell carcinoma is a malignant neoplasm more frequent and of greater importance in the oral region, it derives from epithelium flat stratified and it can produce local destructive proliferation and metastasis at a distance. It represents 90–94% of neoplasms from epithelial origin of oral cavity, appearing with greater incidence in men than in women. It is more common on the lower lip (40%), lateral borders of the tongue (25%) and floor of the mouth (20%). Two clinical cases of squamous cell carcinoma in male patients of 72 and 78 years of age were reported, referred to the Dentistry Department UAT. The first case straightly presented an injury in the inferior alveolar border of rough surface, with whitened areas and erythematous, ulcerates and

hemorrhagic. The second case evidenced an injury in the lateral edge of the tongue of the left side, of fungus like aspect, with irregular borders of 3 × 5 cm of diameter. The extraoral clinical examination revealed an increase of billowed and sliding volume in the cheek of the right side of 12 × 6 cm. The presumptive clinical diagnosis in both cases was of squamous cell carcinoma. In both patients an incision biopsy was made with regional anesthesia. The prototypes were processed with histological techniques of routine for their microscopic interpretation. The histopathology diagnosis was corroborated in the first case: squamous cell carcinoma on gums was present and in the second case: squamous cell carcinoma of tongue was detected. Both patients were referred to the INCAN. This kind of malignant neoplasms must be under surgical treatment and chemotherapy. The prognostic of survival is up to 5 years with an index of recurrence of the 25%.

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FUNCTIONAL CLASSIFICATION OF THE GENES WITH ALTERED GENETIC EXPRESSION IN ORAL SQUAMOUS CELL CARCINOMA

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Objective: Study the function of the genes with altered genetic expression in oral squamous cell carcinoma (OSCC). **Method:** We study five patients with OSCC using the Atlas Glass Human 3.8 I microarray. Genes are divided in various categories considering their cellular function. Paired samples were obtained from tumour and normal oral mucosa in each patient. mRNA is extracted from human tissues, amplified, and reverse-transcribed in cDNA, labelled and hybridised on complementary DNA microarrays. Hybridization signals were read using a dual-laser fluorescent scanner. Data normalization and statistical analysis were performed using the S.O.L.A.R. system (ALMA Bioinformatics SL, Madrid, Spain). Statistical significance of deviations from 1:1 ratio were evaluated by t test, with $P < 0.05$. **Results:** Of the 3757 genes analysed, 426 (11.3%) showed statistically significant differences in expression between tumoural and normal tissue. 322 (75.6%) were significantly over-expressed in tumoural tissue with respect to normal tissue, while 104 (24.4%) were significantly under-expressed. The affected genes fell into a range of 24 functional categories. In the altered expression genes, 80 (18.8%) code metabolism proteins, 53 (12.4%) intracellular transducers, effectors or modulators. **Conclusions:** (i) Code metabolism proteins are the most significant group of the over-expressed genes in tumoural tissue. (ii) Code transcription factors are the most significant group of the under-expressed genes in tumoural tissue.

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ORAL CANCER: ATTITUDES AND DIAGNOSTIC ABILITIES ELICITED BY DENTISTS IN NORTHWESTERN SPAIN

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Objective: To evaluate the level of accuracy of the dentists working for the National Health Service in Northwestern Spain as examiners for opportunistic screening of oral cancer and precancer, as a baseline to ascertain educational needs in this area. **Methods and materials:** a descriptive, cross-sectional study. A mixed questionnaire (attitudes-clinical cases) that consisted of 12 items – eliciting experience with,

knowledge of, and opinions about oral cancer – and 50 clinical cases including 7 typical and non-typical oral cancers (SCCs) and 12 oral precancers together with 31 benign lesions selected according to its prevalence among Spanish general population was applied to 32 randomly selected dentists out of the 70 working at the Galician Health Service Primary Care Network. **Results:** Diagnostic sensitivity for oral cancer was 61.4 and specificity of 86.5. Diagnostic ability in terms of concordance was 82.8. Diagnostic sensitivity for oral precancer was 59.5, specificity of 73.2 and diagnostic ability in terms of concordance was 70.3. The index of wrong classifications was 29.6; however, the difference between the percentage of oral precancerous lesions/conditions misdiagnosed as benign lesions and oral precancerous lesions/conditions misdiagnosed as oral cancer did not reach statistical significance ($X_i - X_j = 1.56$; 95%CI = -8.49 to 5.36). **Conclusions:** There is a need for increasing diagnostic sensitivity by establishing interventions that make dentists 'experts in visual diagnosis' of oral cancer and precancer.

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INTERNAL ARCHITECTURE OF AMELOBLASTOMAS: A MACROSCOPIC-RADIOLOGIC CORRELATION

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Objective: Unilocular, multilocular, unicystic, multicystic, scalloped, pseudolocular and solid are used indiscriminately in Radiology. The purpose of this study was to clarify descriptive radiological terminology in relation to ameloblastomas. **Methods:** Radiographs of 15 ameloblastomas were correlated with the macroscopic appearances of sections through the resected specimen. **Results:** This study showed that it is not feasible to differentiate radiologically between complete cysts, locules and solid areas in ameloblastomas. Radiographic evidence of effacement of locularity with papillary change macroscopically corresponded with malignant change in 2 cases. **Conclusion:** Application of the terms unicystic, multicystic and solid in radiology is discouraged since they lead to misconceptions about the internal structure of ameloblastomas. Effacement of locularity is indicative of malignant change.

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COMPARATIVE STUDIES OF LIPOPOLYSACCHARIDES OF *PORPHYROMONAS GINGIVALIS* AND *ESCHERICHIA COLI* IN THE APOPTOSIS INDUCTION

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Objective: Lipopolysaccharide (LPS) of *P. gingivalis* is considered rather different from classical LPS in the biological activity. *P. gingivalis* is implicated in the etiology of adult periodontitis, and its LPS has been found to bind to the cementum in periodontitis lesion. The observations that macrophages accumulate and remain in the gingiva with periodontitis may relate to the chronicity in this disease. We assume that *P. gingivalis* LPS influences the accumulation of macrophages and we undertook to evaluate the effects of *P. gingivalis* LPS on the murine peritoneal macrophages. Simultaneously, the effects of *E. coli* LPS were examined as a reference of classical LPS. **Materials**

and methods: LPS of *P. gingivalis* ATCC 33277 was extracted by the methods of Rudbach. *E. coli* LPS was purchased from Sigma (L-3024). The intraperitoneal cells of 7 to 11-weeks old female BALB/c mice were harvested by washing the peritoneal cavity with RPMI 1640 medium. The cell proliferation was determined by MTT colorimetric assay with the commercially available assay kit (Boehringer Mannheim). Percentage of apoptosis were estimated by the methods of Wylie. Morphological observations using a light microscope were carried out with May-Grünwald-Giemsa staining. Images of apoptotic cells were analyzed using a laser scanning fluorescence microscope according to the methods of Mopke. **Results and Discussion:** A threshold dose for induction of apoptosis in intraperitoneal macrophages of *E. coli* LPS was seen between 10 µg and 100 µg per 10⁴ cells. While the ability of apoptosis induction of *P. gingivalis* LPS was weaker than by *E. coli* LPS; *P. gingivalis* LPS induced no significant apoptosis. However, morphology of the peritoneal macrophages treated by *P. gingivalis* LPS was obviously different from those of the unstimulated control cells. It is possible that the weak activity of *P. gingivalis* LPS caused the features of periodontitis and was related to the chronicity of periodontitis.

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AN INVESTIGATION OF THE RELATIONSHIP BETWEEN SYSTEMIC BONE DENSITY AND CLINICAL PERIODONTAL STATUS IN POST-MENOPAUSAL WOMEN

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Objectives: The relationship between osteoporosis and periodontal disease is not understood. The aim of this study was to examine the association between bone mineral density (BMD) and periodontal status in a population post-menopausal women. **Design:** Cross-sectional investigation of the association between systemic BMD and periodontal status. **Participants:** Eighty-seven post-menopausal, dentate, women who were screened for osteoporosis and chronic periodontitis. **Methods:** BMD of the lumbar vertebrae was assessed by DEXA scanning. Normal bone mineral density, osteopenia and osteoporosis was classified. The clinical examination included registration of the number of remaining teeth, dental plaque index, probing depths, and clinical attachment levels in six localisations. Correlation and regression analyses were conducted to determine the strength of associations between BMD and clinical parameters. **Results:** The results from this study showed no statistically significant differences between BMD of the lumbar spine and clinical attachment loss ($P < 0.05$) (probing pocket depths and gingival recession), neither BMD and tooth loss. Statistically significant negative correlations were found between BMD and dental plaque index, gingival bleeding, menopausal years and age. Statistically significant negative correlations between age and gingival recession. No correlation between tooth loss and periodontal disease. **Conclusions:** Although decreasing BMD was not associated with increased clinical attachment loss and tooth loss; we seem worse status in women with osteopenia. These data support some association between osteopenia and periodontal status. As periodontitis as well as osteoporosis are associated with age, our study of a well-defined age cohort is of interest, but the results should be interpreted with caution since the compared groups are small.

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AN EXPERIMENTAL STUDY OF JAW DEFORMITIES MODEL IN RAT WITH SPECIAL REFERENCE TO HISTOPATHOLOGICAL CHANGE OF ARTICULAR CARTILAGE BY UNILATERAL BITE RAISED

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Objective: The purpose of the study was to investigate the histopathological changes of the jaw modification aspect by the inharmonious growth between the right and left sides of the mandibular condyle in rats. **Materials and method:** The vertical dimension of occlusion in the experimental groups was raised by attaching with metal bracket on the left side of 3rd molar in 6-weeks-old male rats. The experimental periods were made into 1, 3, 7, 14 and 21 days. **Result:** In 1-day group, increase of thickness of differentiation layer and lack of the hypertrophy layer and nuclei, and osteoclasts were observed in the posterior area of the condyle in the right and left sides. In 3-day group, Sinking of the proliferation layer and loss of the hypertrophy layer disappeared in the left side. Modification of the condyle with loss of the hypertrophy layer and ossification were evident in the right side. In 7-days-group, osteoclasts and disappearance of the nuclei were found in the area of ossification in the left side. On the right side, disappearance of the hypertrophy layer, increasing of the differentiation layer, and the osteoclasts were observed. In 14- and 21-day groups, the condyles were almost close to the normal condition. Immunohistochemically, slight reactivity for VEGF was observed in the cartilage of the both sides at 1, 3 and 7 days, whereas negative reactivity was in the differentiation layer in 14- and 21-day groups. **Conclusion:** These results suggested that resorption of the cartilage were mainly associated with abnormal growth of the mandibular condyle.

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EFFECT OF ENU AND TGF- ON THE DEVELOPMENT OF TRANSPLANTED ORGAN-CULTURED MOUSE TOOTH-GERM

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The purpose of the present study was to investigate the effects of growth factor TGF- and carcinogenic nitroso compound ENU on the development of the transplanted organ-cultured tooth germs in ddY mice. The organ-cultured tooth-germs were divided into the following 5 groups according their cultured conditions, group A (control), group B (DMSO), group C (TGF-), group D (ENU), and group E (TGF- and ENU), and these organ-cultured tooth-germs were transplanted into the subcutaneous tissue of the nude mice. The transplanted organ-cultured tooth-germs (TOCTG) were examined histologically and immunohistochemically (stainings of keratin and PCNA) 2 weeks after transplantation. In both groups A and B, TOCTG showed similar findings. In group C, TOCTG was larger than those in groups A and B. Proliferation of odontogenic epithelial cells was observed in TOCTG. In group D, TOCTG was smaller than those in groups A and B. Many proliferated odontogenic epithelial cells were found in TOCTG. In group E, TOCTG was smaller than those in groups A and B, but larger than that in group E. Proliferation of odontogenic epithelial cells was observed in TOCTG. The result of the present study indicated that TGF-promoted markedly the proliferation of odontogenic epithelial cells in TOCTG, and ENU also promoted the proliferation of odontogenic epithelial cells in TOCTG.

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ATTACHMENT STRUCTURE OF THE DENTO-GINGIVAL JUNCTION IN RAT JUNCTIONAL EPITHELIUM

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Objects: It is believed that the junctional epithelium (JE) plays a significant role in homeostasis and in the maintenance of healthy gingiva to protect from occlusal forces, bacterial infection and marginal periodontitis by adhering and sealing the oral epithelium and the tooth with the internal basal lamina (IBL). So that reason, the marginal periodontitis is caused by disruption of the JE attachment, initially. The cells aligned in the most superficial layer facing the enamel in the JE have been termed as directly attached to the tooth (DAT) cells, and laminin-5 and alpha-6, beta-4 integrins plays an important role in the adherence of these cells. However, it is still an open question attachment structure of the DAT cells surface and constituent of the IBL extra cellular matrix. The aim of this study was to elucidate attachment structure and laminin-5 expression of the DAT cells in the rat molar JE for understanding of the initial events of the marginal periodontitis. **Methods:** Male Sprague-Dawley rats, weighing about 250 g were used in this experiment and, were sacrificed by transcardially perfusion-fixation. After decalcified surface enamel with 10% EDTA, gingival tissue at the M1 and M2 area were carefully resected from tooth surface. For cytoskeletal study, whole mount specimen without decalcification or sectioning, were incubated directly with both of the BODIPY FL conjugated phalloidin for cytoskeletal F-actin. For immuno-fluorescence and colloidal gold immuno-cyto chemical study, these sections were incubated and detected with anti laminin-5 rabbit polyclonal antiserum. For scanning electron microscopical (SEM) study, osmium maceration methods were used for the exposed DAT cell enamel faced surface. **Result and conclusions:** Laminin 5 was exclusively located in IBL and apical area of the external basal lamina (EBL), and also in the DAT cell cytoplasm. DAT cells possess stress fibers arranged vertically and horizontally in the cytoplasm, and microvilli-like structures on their inner surfaces. These results suggest that such structures may contribute to DAT cell migration and cell adhesion to the enamel surface.

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MEDICAL AND SURGICAL TREATMENT OF MANDIBULAR OSTEOMYELITIS

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Osteomyelitis continues to be a serious clinical problem even in this antibiotic era. The etiology and pathogenesis of the disease are not fully understood and the most important factors for the progression and development probably are the virulence of the causative microorganisms, the anatomic possibilities for the infection to spread, and the immunologic response. Osteomyelitis usually occurs in the mandible and is often associated with prolonged pain periods and activity and remission phases of the inflammatory process. Combined surgery and antibiotic therapy is the most effective treatment of choice; although meticulous surgical and medical protocol is performed, not always healing is achieved.

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PERIODONTAL DISEASES

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Periodontal diseases are caused by microbial population attempts are being made in the field of periodontal medicine for appropriate drug of choice to combat with the organisms. An attempt is being made

towards antimicrobial action of some of the mouth washes and antibiotics in inhibiting the microbial flora.

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NECROTIZING ULCERATIVE PERIODONTAL DISEASES IN CHILDREN AND YOUNG ADULTS IN MEDELLIN, COLOMBIA, BETWEEN 1965 AND 2000

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Previous findings that necrotizing ulcerative gingivitis (NUG) is a precursor to noma or Cancrum Oris were confirmed by the follow-up of these clinical conditions in an study of 45 Colombian patients: Twenty nine Necrotizing Ulcerative Gingivitis (NUG), seven necrotizing ulcerative periodontitis (NUP) and nine noma cases. Patients were diagnosed at the outpatient clinic of the School of Dentistry of the University of Antioquia, at the University Hospital Saint Vincent of Paul, at the Luz Castro de Gutierrez University Hospital, at the Red Cross Hospital and at the private office of one of the authors (Jiménez L., M) in Medellín, Colombia, from 1965 until 2000 and is the supporting evidence that shows how NUG may lead to NUP and even noma as an example of the natural history of the necrotizing periodontal diseases and not as a result of recurrent episodes. These findings haven't been reported yet in literature.

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EPIDEMIOLOGICAL STUDY OF PARALYSIS OF BELL OR IDIOPATHIC FACIAL PARALYSIS REALIZED BY THE SERVICE OF PHYSIATRY OF THE UNIVERSITY HOSPITAL. CENTRAL UNIVERSITY OF VENEZUELA. NOVEMBER, 2003–MARCH, 2004. PRELIMINARY RESULTS

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The facial paralysis of Bell has been described for the first in 1821 by Dr Charles Bell, as a dysfunction of the facial nerve, usually unilateral of undetermined etiology. It is considered a benign sickness of the infratemporal facial nerve, which consists in the temporary loss of the contractile function of the mimic muscles of the face, by unknown causes, but may be secondary to a traumatism, compression or a tumor. This is a self-limiting process, which does not threaten the life of the patient and usually disappears within 1 to 3 weeks. Its range of occurrence is 23 for 100 000 persons per year. There is no difference between sexes; in recent studies there is an occurrence between 20 and 35 years of age, with a higher frequency in patients with diabetes and high blood pressure than in the average population. The object of this investigation is to present preliminary results on the prevalence of patients with a diagnosis of paralysis of bell or idiopathic facial paralysis, in accordance with the International Classification of Illnesses applied to Dentistry and Estomatology (CIE – AO. 1985) and who approached The Service of Physiatry of the University Hospital between November, 2003 and March, 2004. There has been related: age, sex, ethnic group, the affected anatomic side, time of evolution, personal and familiar precedents,

customs, hypogeusia of the two thirds of the forepart of the tongue, hyperacusia, decrease of the salivary and nasal secretion, presence of Bell signs and occupation. 58 patients have been studied and it has been found that the second decade of life is the most frequently affected, with 20 patients, which is 34.4%. It is more frequent in women ($n = 40$; 68.9%), Caucasian ethnic group ($n = 32$; 55%), with 80% affected at the left side, 85% presented the sign of Bell at the moment of the consultation, 23 cases (40%) presented hypogeusia of the two thirds of the forepart of the tongue, 40% presented a decrease of the salivary and nasal secretion and 40% presented a moderate hyperacusia.

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ALVEOLAR CAVITATIONAL OSTEONECROSIS AND TRIGEMINAL FACIAL NEURALGIA. REPORT OF A CASE

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In the present study, a case of trigeminal nerve neuralgia associated to a chronic alveolar osteopathy developed after a surgical removal of an impacted maxillary canine removal was reported. The present case was diagnosed after excisional biopsy of the lesion and the treatment included surgical removal. After surgical treatment, total remission of the symptoms was observed. This unusual case may offer diagnostic difficulties, resulting in some cases in acute episodes.

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FACIAL TALON CUSP – A CASE REPORT

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Talon cusp is a dental anomaly that usually projects lingually/palatally from the singulum areas of maxillary or mandibular permanent incisor. Its etiology and pathogenesis are unknown. Only four cases of facial talon cusp, including one with facial and palatal talon cusp on the same tooth and the other in a child with incontinentia pigmenti achromian, have been reported in the English literature since 1960. This case report presents a rare facial talon cusp on the upper right lateral incisor of a 50 years old healthy Malay male without associated clinical problems that a talon cusp might cause. The treatment options of talon cusp are discussed. **Conclusion:** dentist should be able to diagnose, and manage talon cusp by using the available treatment modalities and know the associated clinical problems and complications it could cause.

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CYCLIC NEUTROPENIA AND PERIODONTITIS. A LITERATURE REVIEW AND MANAGEMENT OF AN AFFECTED FAMILY

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Introduction: Cyclic neutropenia is a haematologic disorder characterized by a reduction of neutrophilic recounts at cyclic intervals. This pathology is directly related to the presence of recurrent infections as pneumonia, otitis or periodontitis. **Aim:** The aim of this oral communication is to review the existing literature about the relationship between cyclic neutropenia and periodontitis. To illustrate this relationship, a case of a family affected by this condition and that has been treated for four years will be presented. **Case report:** Three members of a same family (father, son and daughter) were diagnosed of cyclic

neutropenia. Father and son were also diagnosed of different forms of periodontitis; the presence of important periodontal pathogens was revealed by microbiological cultures. The daughter presented a soft gingivitis due to plaque accumulation. The mother, sistemically healthy, also presented a hazardous periodontal pathogen (*Porphyromonas gingivalis*). The whole family received periodontal treatment, including antibiotic therapy when necessary, and a program of maintenance visits was developed. **Conclusions:** Due to the immunosuppression suffered by patients affected by this condition, plaque control and frequent periodontal supportive care must be strict. Treatments have to be preceded by antibiotic prophylaxis. The existing literature is scarce, and we can only find small case series and clinical cases to guide us in the treatment of this kind of patients, due to the low incidence of this pathology.

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CHRONIC MANDIBULAR HIPOMOBILITY ASSOCIATED WITH INCLUSION OF MANDIBULAR THIRD MOLARS. REPORT OF CASE

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Temporomandibular disorders encompass a wide range of clinical conditions, often overlapping, that may involve the TMJ or the neuromuscular system associated with mandibular function. A discussion of specific treatment methods presupposes an understanding of the nature and causes of the condition to be treated. With the heterogeneity of symptoms and etiologic background, it is easy to understand the wide disparity of opinions about what constitutes reasonable and effective management of these problems. In the present study, a case of chronic mandibular hipomobility associated to inclusion of mandibular third molars was reported. On the basis of one case of mouth opening reduction, the author assess the etiopathogenic theories compared with the anamnestic, clinical and radiographical data; the treatment method will be discussed.

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DETERMINATION OF PREVOTELLA INTERMEDIA, PORHYROMONAS GINGIVALIS AND ACTINOBACILLUS NOBACILLUS ACTINOMYCETEMCOMITANS IN PATIENTS DIAGNOSED WITH CHRONIC PERIODONTITIS

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Objective: Determine the association of *Prevotella intermedia* (Pi), *Porphyromonas gingivalis* (Pg) and *Actinobacillus actinomycetemcomitans* (Aa) with deepest pocket depth and severe attachment loss. **Methods:** Sixteen patients were clinically assessed for plaque index, gingival index, bleeding on probing, pocket depth and attachment level. Subgingival plaque samples were obtained from the mesial and distal aspects of one tooth per quadrant and evaluated for the presence of Pi, Pg and Aa by PCR (Pharma Gen[®], SA). **Results:** The distribution of the analyzed species was 100% for Pi, 69% for Aa and 19% for Pg respectively. Pi was associated with pocket depth \leq 3 mm and attachment loss between 3.1 and 5 mm. Pi was observed independently from the other species analyzed in 31% of the patients, however, the combination of Pi+Aa was detected in 50%, and Pi + Aa + Pg in 19%. In 73% of the cases Aa was observed in association with Pi, while the association with Pi + Pg was presented in 27%, and pocket depth $>$ 3 mm and attachment loss between 3.1–5 mm. Pg was only observed in combination with Aa + Pi in patients with pocket depth $>$

3 mm and attachment loss between 3.1 and 5 mm. **Conclusions:** We may conclude from the present study that Pi presence was associated with shallow pockets while the deepest pockets were associated with coinfection between the evaluated species.

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TWO SISTERS WITH ORO-FACIAL-DIGITAL SYNDROME TYPE II. INTRODUCTION

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Oro-facial-digital syndromes are groups of disorders that consist of facial anomalies, abnormalities of the oral cavity and malformations of fingers and toes. Major diagnostic criteria of type two are: lingual nodules, hypodontia, hyperplastic frenula, pseudocleft of the upper lip, broad nasal bridge, broad or bifid nasal tip, zygomatic hypoplasia, hypoplasia of the body of the mandible, polysyndactyly and brachydactyly. **Clinical case:** Two 7-year-old sisters with normal karyotype 46xx diagnosed as OFDS II Syndrome. They both had similar anomalies: A congenital nasal deformation with a low nasal bridge and a broad nasal tip, bifid tongue, ankyloglossia and lingual fibromas that were operated at the age of six months, a cleft of the soft palate and a cleft of the upper lip that were operated at the age of 16 months, brachydactyly, hyperplastic frenums, microdontia, a bizarre crown morphology, agenesias and a malocclusion with a crossed bite and an open bite. **Conclusion:** Abnormalities of the oral cavity are always present in OFDS II syndrome. Some of these anomalies need surgical correction orthodontic treatment; generally combined with orthognathic surgery is always needed by these patients.

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RIGA-FEDE DISEASE: REPPORT OF A CASE

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Riga-Fede disease is a rare syndrome. There have very few cases reported. Early recognition of this entity is important, because it may be the presenting sign of an underlying neurologic disorder. We report the case of a 14-month-old girl with extensive Riga-Fede disease involving the tongue that prompted a diagnosis of congenital autonomic dysfunction with universal pain loss. It appears such as a traumatic ulceration on the tongue in association with deciduous teeth. This ventral lesions result from contact with mandibular anterior incisors. A conservative treatment regime was used, involving medical management, elimination of the sharp edges of the teeth and use of topical Aloclair[®] gel (polivinilpirrolidona, maltodextrina, propylenglicol, PEG-40, goma xantana, potasium sorbato, sodium benzoate, EDTA, benzalconium clorure, sodium hialuronate, sacarina, glicirréticum acid, aloe vera), and the ulceration healed over a period of 2 weeks.

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POLIDACTYLYN MEDULLOBLASTOMA AND DENTAL AGENESIS: A CASE REPORT

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Case report: A 13-year-old male patient was referred to the GAP as suffering from an altered and delayed eruption. Familiar medical history was of no special interest. Patient's medical history revealed: congenital hydrocephalus and a medulloblastoma, which was surgically removed and treated with chemotherapy and radiotherapy at the age of two. Clinical and radiological exploration revealed ocular hypertelorism, high insertion hair, multiple cutaneous nevi on the arms and neck,

bilateral feet hexadactyly, vertebral scoliosis and a bifid rib. In the oral examination, multiple missing teeth, hypodontia and abnormal tooth shape were observed. The panoramic radiography revealed several radiolucid lesions in the posterior lateral segments of the mandible. A differential diagnosis was made putting special emphasis on the possibilities of queratocyst, cherubism and a metastasis from the medulloblastoma, bearing in mind, their three common patterns: all are most commonly found in males, all are localized in the mandible and they all are related to systemic syndromes. Once the intraosseous lesions were removed, the clinicopathological study revealed a highly cellular parakeratinized epithelial lining with surface corrugations and a polarized layer of basal cells. The immunocytochemical results were positive for cytokeratins (AE1, AE3, 10), high weight cytokeratin (34BE12), involucrin, cadherin E and CD138 and revealed consistent expression for EMA and CEA, which confirmed the diagnosis of keratocyst. The final diagnosis was Gorlin-Goltz syndrome, since the patient reported two signs, which are considered major features in the diagnostic criteria of this syndrome. **Comments:** The importance of this diagnosis eradicates, in the fact that there is a great necessity of a follow-up once the keratocyst is removed, to prevent any recurrence. An association between hexadactyly and Gorlin-Goltz syndrome has been recently described. There is an important relation between medulloblastoma and Gorlin-Goltz syndrome mostly in patients under the age of two. A second tumour is five times more likely to occur in patients who suffered from medulloblastoma than in the general population. Finally, the genetic alterations of the Gorlin-Goltz syndrome can also be found in consanguineous without phenotypic alteration. Genetic counselling should therefore be given to patient's relatives.

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ISOLATED HYPOGLOSSAL NERVE PALSY AS THE INITIAL PRESENTATION OF A NEURILEMOMA OF THE 12TH CRANIAL NERVE LOCATED AT THE BASE OF THE SKULL

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Isolated hypoglossal nerve palsy (IHNP) is a rare condition, but it may appear as the initial and solitary sign of an intracranial or extracranial space occupying lesion, trauma to head and neck, following radiotherapy, vascular abnormalities of the internal carotid artery, rarely has been related to viral infectious diseases (EBV, post-Influenza vaccination), after intubation procedures for general anesthesia and surgery near the hypoglossal nerve pathway. There are reported idiopathic cases. Symptoms and dysfunction of IHNP depend on duration. Hemiatrophy and deviation of the tongue on protrusion toward the affected side are typical signs. Other clinical findings include lingual fibrillation at rest and dysarthria. Onset of the atrophy is generally is never immediate and is a result of lack of muscle tone and movement. We present the case of a 41-year-old Caucasian male who complained of an unpleasant sensation of his tongue of 2 months duration. His past medical history was significant only for cigarette smoking of 1 pk/day during the last 20 years. Headache was not referred. Clinical examination revealed left lingual atrophy and ipsilateral deviation on protrusion. A laryngoscopy was performed and reported within normal limits. CT and MRI images with 3D reconstruction revealed a well defined soft tissue mass located at the base of the skull, seated in the hypoglossal canal. The clinical impression was neurilemoma, which was successfully by gamma knife radiosurgery with out any neurological sequelae.

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CONGENITAL INSENSITIVITY TO PAIN WITH ANHIDROSIS: REVIEW OF THE LITERATURE AND CASE REPORT

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Congenital insensitivity to pain with anhidrosis (CIPA) is a rare autonomic recessive hereditary disorder characterized by inexplicable episodes of hyperpyrexia, inability to sweat, and self-mutilation due to insensitivity to pain. The diagnosis is usually made in early childhood. Pain is one of the protective responses of the body and insensitivity to it causes severe sequelae and shortens the lifespan of affected patients. A nerve growth factor receptor encoded by the TRKA gene plays an important part in the formation of autonomic neurons and small sensory neurons in dorsal root ganglia and in signal transduction through its intracytoplasmic tyrosine kinase domain. Three mutations in the tyrosine kinase domain of TRKA have been reported in patients with CIPA. We present the case of a 2-year-old Guatemalan girl who presented with extensive self-inflicted ulcers affecting buccal mucosa, lips and tongue. Additionally she had a recent fracture of finger without eliciting tears or pain signs. She also sustained minor burns and teeth trauma. Familial consanguinity was documented. Clinically the absence of response painful stimulus and temperature sensation was confirmed. There was no electromyographic response. Of importance is long term familial counseling in order to prevent self-mutilation.

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MACROGLOSSIA IN PEDIATRIC PATIENTS: AN IMPORTANT DIAGNOSTIC PITFALL FOR BECKWITH-WIEDEMANN SYNDROME (EXOMPHALOS-MACROGLOSSIA-GIGANTISM)

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The cardinal features of Beckwith-Wiedemann Syndrome (BWS) are macroglossia, omphalocele or other umbilical abnormalities and gigantism of the neonate. These findings allowed recognition of the disorder at birth. Most cases of BWS are sporadic and the mode of inheritance is complex. Possible patterns include: autosomal dominant inheritance with variable expressivity and gene duplication at chromosome in the 11p15.5 region. Other common clinical features of BWS are visceromegaly and posterior helical ear pits. Affected patients have increased risk of developing hepatoblastoma and Wilm's tumor. Growth at birth and/or soon after is above 90th percentile. Hypoglycemia may be present at birth, been important in to detect in order to prevent mental retardation. The enlarged tongue produces the protrusion of dentoalveolar structures, resulting in an anterior open bite and a prognathic mandibular appearance secondary to an abnormally obtuse gonial angle and increased mandibular length. Therefore is important to perform partial glossectomy early in life in order to prevent these. We present a case of a 5 year old male with BWS and will discuss the importance of considering this entity in children with macroglossia. Emphasis in follow up for life is also stressed.

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MULTIPLE PTERYGIUM SYNDROME: REPORTS THE CLINICAL CASES OF THREE BROTHERS

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Introduction: The multiple pterygium syndrome is described most frequently in literature under the nonspecific diagnosis of arthrogryposis or Noonan syndrome. This syndrome consists of growth retardation, multiple pterygia involving the neck, fingers and antecubital, poplitea and intercrural areas, and cleft palate. The syndrome has an autosomal recessive inheritance. **Objective:** The present work reports the clinical cases of three brothers affected by the multiple pterygium syndrome, presenting specific phenotypic characteristics, reported in their oral manifestations. **Method:** The definitive diagnosis was made taking the clinical and radio graphics characteristics from the patients. The kind of inheritance is determined by means of a genealogical tree, since this syndrome does not present evident chromosomal changes. **Results:** The brothers presented the basic characteristics of this syndrome as they have a short height, Moreover they evidence: pterygium of antecubital and poplitea neck, fingers and regions, antimongoloid camber of the eyes, severe scoliosis, as well as a too deep palate, malocclusion and arthrogryposis. **Discussion and conclusions:** Because muscle-skeletal systemic is a syndrome with gradual degeneration, the patients must be handled since an early age. In the case of the maxillo-facial handling, the patients should be treated due to the degenerative alterations of the temporomandibular joint, as well as arthrogryposis and malocclusions. The dentist must be prepared for an early clinical diagnosis, or any other kind of syndrome treatments pursuit.

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INCONTINENCIA PIGMENTI: ORAL AND DENTAL MANIFESTATIONS

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Incontinentia Pigmenti (IP) is an uncommon genodermatosis that occurs in female infants, with an X linked dominant mode of inheritance, characterized by ectodermal, mesodermal, neurological, ocular and dental manifestations. The aim of this study is to present the oral and dental manifestations of IP in a Venezuelan pediatric patient.

Case presentation: A 9 year-old venezuelan girl was seen at the Faculty of Dentistry, Central University of Venezuela in November 2003 for evaluation of her dental condition. During the physical examination, she showed pigmented macular lesions in her face, trunk, back, legs and fingers, as well as abnormal hair distribution and alopecia on the vertex; hypoplasia of eyebrows and a history of a cutaneous vesicular lesion at birth were also observed. At dental examination, marked conical shape teeth and delayed eruption of deciduous and permanent dentition was evidenced. Radiological exam revealed oligodontia of maxillary and mandibular teeth and maxillary notched central incisors. We may conclude, that the present study represents an IP diagnostic case, based on the cutaneous, ocular involvement, and dental findings in this pediatric patient.

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SYNDROME OF KLIPPEL-TRENAUNAY (SKT). REPORT OF PEDIATRIC CASE WITH OROFACIAL MANIFESTATIONS

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The SKT is a congenital angiodyplasia that includes vascular anomalies as hemangiomas, varicose veins and hypertrophy of soft and bony tissues; additionally it can present lymphangiomas, abdominal hemangiomas, sindactyly, polidactyly, oligodactyly and macrodactyly. A 5% may involve the head and neck region. The oral manifestations include hyperplasia of soft tissues, jaw hypertrophy, displacement of teeth,

malocclusions and anterior open bite. The aim of the present study is to present a pediatric case of SKT with oral manifestations. A 7-year-old male patient attended the Stomatology Service at the Faculty of Dentistry, Central University of Venezuela presenting oral lesions, cutaneous and systemic involvement. Clinical Oral and physical examination were then performed. Clinical oral examination revealed a multinodular lesion on the dorsal surface of the tongue consistent with lymphangioma. The physical exam disclosed multiple purplish spots on the nasolabial area consistent with port wine type of hemangiomas, multiple hyperchromic spots, unilateral hypertrophy affecting the extremities, and macrodactyly. Afterwards, a diagnosis of SKT was rendered based on the hemihypertrophy and hemihyperplasia findings in this pediatric case. We may conclude that the present case represents a SKT considering the coexistence of two or more of the clinical signs and emphasis was also made on the importance of the evaluation of the orofacial anomalies.

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ABRIKOSOFF'S TUMOUR OF THE TONGUE

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Introduction: Abrikossoff's tumour is otherwise known as a granular cell myoblastoma or granular cell tumour. Abrikossoff described four variations of this tumour, one of them malignant. Any part of the skin may be affected. In the oral cavity almost all lesions appear on the dorsum and lateral borders of the tongue. **Case report:** A 24-year-old woman reported unspecific discomfort on her tongue, appearing 1 week prior to reference to the ward. The patient was unable to provide a detailed description but expressed concern about the abnormal appearance of her tongue. The lesion was surgically removed and histopathologically analysed. No relapse was observed in follow-up examinations. **Results:** The general consensus among authors is that this is a benign lesion and that if the excision is total, with wide resection margins, there is normally no relapse and the healing process is complete. A differential diagnosis is, however, necessary to distinguish between benign (fibroma, neurofibroma, traumatic neuroma and neurilemmoma) and malignant (rhabdomyosarcoma and alveolar soft-part sarcoma, regarded to be a malignant form of Abrikossoff's tumour) processes.

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MASSIVE ORO-FACIAL INVOLVEMENT IN STURGE-WEBER SYNDROME

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We report the case of a 25-year-old man affected by bilateral Sturge-Weber Syndrome (SWS). SWS is a rare (incidence: 1/50 000 cases), sporadic, amartomatous proliferation of the capillary or cavernous vessels involving the tissues of the brain and the face. Patients with SWS generally exhibit unilateral port-wine stains ('nevus flammeus') of the face, distributed along one or more segments of the trigeminal nerve. Ipsilateral involvement of the leptomeningeal vessels leads to progressive destruction of the adjacent cerebral cortex and, eventually causes neurological symptoms, including epilepsy, contralateral hemiplegia, visual fields defects and mental retardation. Omolateral blindness (in the eye of the affected side) is mainly caused by glaucoma. Intraoral involvement includes ipsilateral purplish, plane or vegetant, hemangiomas of the buccal

mucosa, gingiva and palate. Bilateral forms are thought to be about 8% of all SWS cases. In our case, the patient presented a large hemangioma involving nearly all areas of the facial skin, which appeared swollen, nodular and purplish. In particular, hemangioma of the lower right eyelid resulted in a nearly complete obstruction of the eye. Hemiplegia, severe mental defect, seizures and complete blindness because of bilateral glaucoma were present. Hemangioma

of the lips resulted in a prominent macrocheilia; the lower lip was hanging and lower teeth were apparent in the external view. Introrally, the tongue was not retained in the oral cavity because of marked macroglossia. In both jaws there was general gingival overgrowth, due to either hemangiomas or administration of phenytoin for control of seizure activity; this phenomenon caused complete masking of the teeth of the upper jaw.

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