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Poster Session P05 - Morita Prize

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Poster Session P05/Morita Prize

P05-67

Oral manifestation and behavior attitude of autistic patients in United Arab Emirates

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Introduction: Autism, Autistic Syndrome (AS), Autistic Disorder (AD), Infantile Autism (IA) and Childhood Autism (CA) are different terms given to the same condition of developmental disabilities. The purpose of the study was to obtain baseline information regarding the oral health status, habits and behavioral attitudes towards dental treatment of a group of autistic children attending rehabilitation centers in Dubai and Sharja Emirates in United Arab Emirates.

Materials and methods: A letter was sent to both rehabilitation centers including full description of patient examination procedure and the objectives of the research. After receiving the signed approval from the centers, a self-administered questionnaire in Arabic and English was completed and signed by the parents of each child participating in the research and was reviewed with the children's trainers. Extra-oral and intraoral examinations were performed in 60 autistic children distributed in three age categories. The parents of all the 60 children (51 males and 9 females) responded to the questionnaires and the collected data were analysed using SPSS software for frequency tables.

Results: Extra-oral examination showed that 30 (50%) children showed different signs of trauma due to habits and also expression of temporary madness. 90 % of children showed no soft tissue injuries, 50%) having teeth traumatic injuries. Regarding the behavioral attitude to dental treatment, 30.91% of the children were definitely negative, 35.59% were negatively behaved and only 23.73% reacted positively towards the dental examination. 25% received dental treatment under general anesthesia.

Conclusion: Although traumatic injuries and behavior attitude of the examined autistic children did not show statistically significant differences compared to international studies regarding autistic patients are essential in preventive as well as curative solutions.

P05-68

Anodontia in Hypohidrotic Ectodermal Dysplasia (HED), early intervention

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Introduction: Ectodermal dysplasias are infrequently, and are characterized by the abnormal development of the structures from the ectoderm. It is genetically transmitted by different patterns: Autosomal dominant or recessive linked to X. The triad: distrofic nails, alopecia or hypotrichosis and palmoplantar hyperkeratosis is usually accompanied by a lack of sweat glands and the total or partial absence of temporal and/or permanent teeth. Dental alteration is the most interesting characteristic of HED. Severe cases are affected with total anodontia. If the temporary and permanent teeth erupt they frequently have a conic

shape that hinder the aesthetic rehabilitation. Alveolar growth is inhibited, therefore occlusal vertical dimension and facial height are reduced.

Clinical management: A 2-year-old girl with complete absence of deciduous teeth presented alterations in hair, breast formation button and facial profile with little development. During oral examination anodontia and lip incompetence were found. Radiographically total agenesis of temporary teeth and absence of definitive germs of incisors and first molars were observed. The aim is to establish a multidisciplinary treatment plan and start the treatment early through acrylic prosthesis.

Conclusion: The rehabilitation should be performed in the first years of life, to reduce the resorption and atrophy of the alveolar bone and control the vertical dimension allowing to reach a normal masticatory efficiency and language development.

P05-69

Dental treatment in a patient with a Factor XII deficit: case report

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Introduction: Factor XII deficit is a low prevalence pathology (1–1000000) and there is no scientific evidence to support clinical dental management. We present a case report of a patient with factor XII deficit, high risk and high caries activity, mixed dentition, who was integrally treated with the support of the interdisciplinary team of the Hemotherapy Department.

Clinical management: A 7-year-old boy, treated at the Transfusion Department of the Pereira Rossell Hospital due to Factor XII deficiency was admitted at the dental clinic. According to the clinical and radiographic examination multiple dental extractions were needed. Since this patient do not present an abnormal bleeding time it was decided to perform the dental extractions using local haemostatics and to leave the patient in the hospital under observation. The first treatment was the less traumatic extraction and local and p.o. transamin were provided. The patient was dismissed from the hospital after 24-h observation and checked again after 48 h. No complications were observed. The following dental procedures were performed in the same way but the patient remained hospitalized for less time. After the 4th session, the patient was dismissed immediately after the dental extraction and scheduled to check up after 24 h. Besides the dental extractions, the patient received routine dental treatment, including fissure sealants, fillings and orthodontic treatment.

Conclusion: It can be concluded that a patient suffering from Factor XII deficiency was successfully and with no complications treated in an ambulatory setup where conventional dental treatment including dental extractions were performed.

P05-70

Oral rehabilitation of Ectodermal Dysplasia with anodontia: a case report

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Introduction: Dental implants have become an accepted treatment modality for ectodermal dysplasia (ED) with either oligodontia or anodontia patients. However, in anodontia vertical and buccolingual bone dimensions are generally inadequate making dental implantation a challenge. That is why, the use of a surgical guide during implant placement is of high importance in such cases.

Clinical management: The clinical management of children with ED provides a unique opportunity for cooperative effort between the pedodontist, orthodontist, prosthodontist and dental surgery. This case report describes the multidisciplinary treatment of an 8-year-old child with ED. The precise position of the two mandibular implants was planned by a software on a virtual basis and the implants were placed using surgical guides by means of stereolithographic solid biomodel (SLA) generated from computed tomography (CT). The treatment included a mandibular overdenture supported by two osseointegrated implants. Conventional removable complete denture was the choice of treatment modality for the maxillary edentulism because of the insufficient bone dimensions. At the end of 1 year the patient presented significant improvements in oral function and psychosocial activities. The mandibular left implant failed within 9 months, reimplantation was performed thereafter, and both the maxillary and mandibular prostheses were reconstructed.

Conclusion: Early implant placement and overdenture is a good multidisciplinary treatment option in poor cooperative ectodermal dysplasia children with anodontia. CT-based imaging and surgical guidence carry both radiographic and clinical information for a succesful surgical and prosthodontic results for ED with anadontia.

P05-71

Management of visible enamel defects: seeking children's perspectives

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Introduction: Visible enamel defects may be distressing to young people and have a negative effect on everyday social interaction. This study explored how children felt before, and after, cosmetic improvement of their discoloured permanent incisors.

Patients and methods: A 10-item questionnaire, developed with children themselves, was sent to 88 patients who had received microabrasion and/or composite restorations, for a variety of enamel defects, at Sheffield Dental Hospital, UK. Responses were graded using a 10-cm visual analogue scale (VAS) where a score of 10 represented the most negative response, and zero, the most positive.

Results: Anonymous replies were received from 62 children giving a response rate of 70%. The mean age of participants was 11.9 years (range 7–16) and 42% were male. Prior to treatment, children were very worried (VAS = 6.8) and embarrassed (VAS = 6.9) about their teeth and thought they looked yellow/ discoloured (VAS = 7.3). Following treatment, participants reported that their teeth looked much better (VAS = 1.1), they were happier (VAS = 2.2) and were more confident (VAS = 1.6). Feedback about clinical treatment was extremely positive with children rating staff as friendly and kind (VAS = 0.4) and procedures were explained very clearly to them (VAS = 0.6). There were no significant differences in responses according to gender, with the exception that, before treatment, girls were reportedly more worried about their teeth than boys (P = 0.012, independent *t*-test).

Conclusion: This study found high levels of appearance-related concern in children with visible enamel defects. However, simple and noninvasive treatment was well received and had a positive effect on how children felt about their teeth.

P05-72

Clinical evaluation of conventional *versus* colored compomers for Class II restorations

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Introduction: This split-mouth study evaluated the 12-month clinical performance of conventional (Compoglass F-Ivoclar, Vivadent, Liechtenstein) and colored (Twinky Star-Voco, Cuxhaven, Germany) compomer restorative materials in class II restorations of primary molars.

Materials and methods: A total of 196 restorations were placed in 98 children aged between 5 and 10 years old (mean age: 7.43 \pm 1.31 years old) that had bilateral matched pairs of carious posterior class II primary molars. The study was approved by the Ethical Committee and written informed consent was obtained from the parents. A split-mouth design was used in which two materials (Compoglass F, Twinky-star) were randomly placed on contralateral sides by three dentists. Clearfil S³ Bond (Kuraray Dental, America) was used as adhesive system. At baseline, after 6 and 12 months, restorations were evaluated using modified U.S. Public Health Service criteria for: secondary caries, marginal integrity, marginal discoloration, anatomic form and surface texture. The Alpha + Bravo scores were considered as clinical success. The data were subjected to statistical analysis by Wilcoxon and McNemar tests (P < 0.05).

Results: The retention rates were 95% for Twinky star and 94% for Compoglass F at the 6-month recall; 85% for Twinky star and 87% for Compoglass F at the 12-month recall. No statistically significant difference was found between both compomer materials. **Conclusions:** The 12-month clinical performances of both materials were satisfactory in class II restorations of primary molars. Colored compomers could be an alternative material in the restoration of primary molars for at least 12 months.

P05-73

Quality of the interface of primary dentin bonded with antibacterial fluoride-releasing adhesive

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Introduction: Limited information is available on the physical properties and ultrastructure of resin-dentin interface of primary teeth. We evaluated the quality of interface of sound and caries-affected primary tooth dentin bonded with an antibacterial fluoride-releasing self-etch adhesive.

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Materials and methods: Primary molars were used according to the regulation of Nagasaki University. Dentin was bonded with Clearfil Mega Bond FA (Kuraray Medical). A nano-indentation tester was employed for creating indentations vertically across resin-dentin interfaces of the bonded sound and caries-affected primary tooth dentin for determination of hardness (H) and Young's modulus (Y). Similar resin-dentin interfaces were examined with a SEM/EDX, and with a TEM using ammoniacal silver nitrate tracer for nanoleakage. *Post hoc* comparisons were performed using Fisher's PLSD test at p < 0.05.

Results: Significantly lower values were seen in the H and Y values of the interfacial dentin compared to the underlying dentin in both sound (H: 389 ± 155 MPa, Y: 17.5 ± 5.3 GPa) and caries-affected (H: 483 ± 138 MPa, Y: 22.9 ± 6.5 GPa) dentin except for the H in caries-affected dentin. No significant difference between the interfacial dentin and the underlying dentin was observed in the H of caries-affected dentin and the Ca and P contents in both sound and caries-affected dentin. TEM revealed extensive interfacial nanoleakage in bonded sound dentin, while no silver deposit in bonded caries-affected dentin.

Conclusions: High Ca and P contents of the interfacial dentin may be useful for remineralizing resin-sparse regions within the interfacial dentin. To avoid the deterioration of bond, sound dentin should not be ground as possible.

P05-74

Comparison of remineralization effect between Fuji IX and Surefil

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Introduction: Nowadays, the remineralization process underneath restorations is explained by the ionic exchange mechanism. It's now acknowledged that, in the presence of fluoride ion, it is possible to remineralize or heal earliest caries lesions. The purpose of this study was to evaluate and compare the remineralization effect of a high viscosity glass ionomer cement (Fuji IX) and a packable composite resin (Surefil) on caries affected dentine.

Materials and methods: Four standard cavities were prepared on four surfaces of the same tooth and artificially demineralized dentine was produced in three of the cavities of 21 primary molar teeth. The cavities were assigned to four groups: Group I: cavities were artificially demineralized and restored with Fuji IX, Group II: cavities were artificially demineralized and restored with Surefil, Group III: cavities were artificially demineralized and no restoration was applied, Group IV: cavities were not demineralized. The microhardness of the dentine underneath the restorations and in the control group was measured from the cavity floor 7 days, 30 days and 180 days after preparation. Each mineral (F, Sr, Ca, P) loss or gain was also analyzed using Energy Dispersive X-ray Spectrometer. Data were analyzed by repeated-measures ANOVA.

Results: The mean microhardness (kgf/mm²) at the restorative material/dentin interface at different times for Fuji IX was 49.53 ± 2.91 , 50.97 ± 3.31 , 62.99 ± 6.29 respectively and 49.78 ± 3.14 , 49.40 ± 4.96 , 49.66 ± 4.00 for Surefil. The 6-month results showed that the microhardness of the dentin underneath Fuji IX was higher than the dentin underneath the Surefil composite resin. Fuji IX had a significant effect on fluoride and strontium uptake.

Conclusion: The artificially demineralized dentine was proved to be remineralized beneath Fuji IX.

P05-75

Two-year clinical evaluation of fiber-reinforced nanofill resin composite in stress-bearing cavities

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Introduction: This study evaluated the clinical performance of a nanofill resin composite applied with/without glass-fiber layering in stress-bearing anterior and posterior cavities in child patients.

Materials and methods: A total of 104 resin restorations (Filtek Supreme 3M ESPE) with (FRC) or without (PC) glass-fiber layering (EverStickNet StickTech) using adhesive (Adper Single Bond 3M ESPE) and a flowable composite (Filtek Flow 3M ESPE) were placed in extensively carious first molars (n: 71) and traumatized anterior teeth (n: 33) in 70 child patients (average 10.9, 10.7 years respectively). The restorations were evaluated at baseline, 6, 12, 18 and 24 months after placement using USPHS modified-Ryge criteria. The data were analysed using Fisher's exact and chi-square tests and the changes in the parameters using the Cochran Q test (P < 0.05).

Results: Survival rates (%) of the restorations with or without fiber layering were 97.1 and 97 for the molars and 93.7 and 94.7 for the anterior teeth respectively after two years. There was no secondary caries, change in anatomic form and postoperative sensitivity in any of the restorations within the evaluation periods. Minor changes in some of the anterior and posterior restorations for FRC and PC groups (Bravo score) for marginal adaptation, marginal discoloration and color stability were observed after two years. There was no statistically significant difference evaluated between the parameters (P < 0.05).

Conclusion: The glass fiber-reinforced nanofill resin composite restorations applied with flowable composite presented similar clinical performance to the nanofill composite material in stress-bearing cavities after 2 years. The nanofill composite restorations were found successful in stress-bearing conditions.

P05-76

Obesity and dental caries of Greek pre-school children <u>A. AGOUROPOULOS</u>, S. MAMALI, S. GIZANI &

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Introduction: Obesity is a risk factor for several general health problems. The purpose of the present study is to investigate the relationship between obesity and dental caries in pre-school Greek children.

Patients and methods: Using one-stage cluster sampling, children were randomly selected from 28 public kindergartens of the major area of Attica, Greece. The study protocol was approved by University of Athens Dental School Ethics Committee. After obtaining parental consent, a clinical dental examination was performed, recording open caries lesions. Weight and height were measured and the Body Mass Index (BMI) as well as *z*-scores were calculated for each child. Associations were estimated using correlation coefficients and a regression analysis model. A 5% level of significance was used to evaluate the results.

Results: One thousand and forty two children 2–6 years old were examined, out of which 36.4% had at least one carious lesion. Regarding obesity, 17.5% of the boys were overweight and 5.8% were obese, while 15.8% of the girls were overweight and 6.4% obese. An increase of the boys' mean BMI, comparing to the growth charts of the Greek population, was observed. The correlation coefficients as well as the regression analysis results indicate a negative relationship between obesity and dental caries,

but this was statistically significant only for 4-year-old boys (P = 0.01) and 5-year-old girls (P = 0.003).

Conclusion: The results indicate that children with carious lesions have reduced growth as indicated by the BMI index. Obesity was

not found to be a risk factor for dental caries in pre-school Greek children.

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