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REVIEW ARTICLE

Misnomers in oral pathology

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BACKGROUND: Diseases which involve the oral cavity usually derive their names from either Greek or Latin. These terms are customarily based on etiology or description of the lesion. However, because of various reasons, some of these terms are misnomers.

OBJECTIVE: To review commonly encountered misnomers in oral pathology.

CONCLUSIONS: Most of the misnomers encountered in oral pathology may arise from lack of understanding of underlying etiology, pathogenesis, histopathology, and/or concepts. Some misnomers are due to imprecise translations from word origins, etymological bungles, and/or factual errors. Clinical, histopathological, and/or etymological explanations are used to analyze and elucidate the nature of these misnomers. Alternative terms, where possible, have been suggested.

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Keywords: Misnomer; etymology; Greek; Latin; eponym

Introduction

Pollon onomaton mia pathos.

One disease many names

Naming diseases is a part of our communication, using words and language which can be understood by other members of our profession. Generally diseases are named according to their *etiology* (e.g. aspirin burns, barodontalgia, candidosis, nicotinic stomatitis), *features* (e.g. anodontia, hairy tongue, xerostomia), *anatomical structure(s)* affected (e.g. pulpitis, gingivitis, periodontitis), *pathological characteristics* (e.g. fibrosarcoma, glandular odontogenic cyst), or *pathogenesis* (e.g. osteogenesis imperfecta). Some diseases are *eponymous*, named after the person or persons who described them (e.g. Gorlin cyst, Sturge–Weber angiomatosis), person who suffered from the disease (e.g. Lou Gehrig disease, Christmas disease) or a group afflicted by it (e.g. Legionnaire's disease). Some diseases names are *toponyms*, named after a place (Lyme disease – Lyme, Connecticut; Brandywine type of dentinogenesis imperfecta – Brandywine, Maryland).

The system of names used in a particular discipline is called *nomenclature*. The word has its origin from the term '*nomenclatura*', (from Latin *nomen*, 'name' + *calare,* 'to call' or 'proclaim') for a listing of names (Skinner, 1961; Haubrich, 2003). Disease names are important for communication but they should not create confusion. In spite of such systematic approaches to nomenclature, classification and definitions, there are certain terms in the fields of medicine and dentistry which have been named incorrectly. The technical term for this is '*misnomer*' which is derived from Old Law-French '*mesnommer*', which itself is as a result of macaronics, from Old French *mes*, 'bad, wrong or improper' + Latin *nominare,* 'to name' (Skeat, 1993).

Misnomers are not unknown in medicine. Autoimmunity, cholera, cervical erosion, desensitization, dyscrasia, dyspepsia, fibroepithelioma of Pinkus, graft-versus-host disease, hay fever, hydrophobia, hypersensitivity, hysteria, influenza, melancholia, myxoid cyst, osteoarthritis, pancreas, and pyoderma gangrenosum are some examples (Desbiens, 1987; Dirckx, 1987; Lock *et al*, 2001; Doan *et al*, 2005; Ribes and Ros, 2006, Nosrati *et al*, 2008).

These misnomers in oral pathology may be due to erroneous concepts, etymological misinterpretations and/or factual inaccuracies (Table 1). Most of these misnomers have been around for quite some time because they are popular and commonly used, long before the true nature of these conditions or their etymologies were known.

Misnomers because of etymological misinterpretations

Misnomers because of etymological faux pas may occur when the meanings of terms have been perceived wrongly. A very good example of such an etymological

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Table 1 List of misnomers related to oral pathology

Misnomers because of etymological misadventures/misinterpretations
1. Ankyloglossia
2. Dens in dente
3. Dilaceration
4. Eosinophilic granuloma
5. Iatrogenic
6. Odontogenic
Misnomers because of misconception (misunderstanding of concepts/pathogenesis/pathology)
1. Acoustic neuroma
2. Ameloblastoma
3. Aneurysmal bone cyst
4. Angioneurotic edema
5. Auriculotemporal neuralgia
6. Fibroma
7. Granular cell myoblastoma
8. Hemangioma
9. Melanoacanthoma
10. Mycosis fungoides
11. Myositis ossificans
12. Peripheral ossifying fibroma
13. Plunging ranula
14. Pyogenic granuloma/periapical granuloma
Misnomers because of misapplication of terms (terms that cause confusion)
1. Adenolymphoma
2. Agranulocytosis
3. Candidiasis
4. Carcinoma-in-situ/intraepithelial carcinoma
5. Epulis
6. Fibromatosis
7. Leukoedema
8. Melanoma
9. Neurolemmoma
10. Odontoma
11. Oral submucous fibrosis
12. Pleomorphic adenoma/mixed tumor
13. Squamous cell carcinoma/epidermoid carcinoma
Eponymous misnomers
1. Crohn's disease
2. Garrè's osteomyelitis
3. Plummer–Vinson syndrome

misadventure is the term *iatrogenic*. If we look at similar words, *osteogenic* – (from Greek *osteon*, 'bone' + *gennaō,* 'I produce') means to produce bone (Haubrich, 2003), *chondrogenic* means to produce cartilage (Greek *chondros*, 'cartilage'), and *carcinogenic* means to produce carcinoma/cancer (Latin '*carcinoma'*, Greek καρϖ κινομα [*karkinoma,* a cancer, from *karkinos,* – crab]). Likewise, *iatrogenic* literally means '*to* produce a physician' (from Greek *iatros*, 'physician', healer + *gennaō,* 'I produce') rather than produced *by* a physician (Desbiens, 1987; Haubrich, 2003). Similarly, the precise meaning of the term '*odontogenic*' is '*to* produce a tooth' (from Greek *odontos,* tooth) rather than one derived *from* tooth or its associated tissues. It is a misnomer when used as an adjective for tumors, cysts, infections and the like.

Confusions can arise if one is not aware of the exact etymology. For instance, if one looks at the Greek origin of '*ameloblast'*, it would mean '*a germ without a limb*' (*a,* 'not' + *melos,* 'limb' + *blastos,* 'germ, bud, formative cell'). If we consider the Latin origin of ameloblast, it would mean '*a germ that makes something better*' from *ad,* 'to' + *melior,* 'better' (Skeat, 1993). But the exact origin of '*amel*' part of the 'ameloblast' is from Anglo-French '*enamailler'*, from *en,* 'in' + *amailler*, 'to enamel', variant of Old French *esmailler,* from *esmail* for 'enamel' (Skinner, 1961).

A good example of an etymological misconstruction is *ankyloglossia*. '*Ankylos*' in Greek means 'bent' or 'crooked' and the source for the term ankylosis derived from Greek '*anchylosis*'' which was used by Paul of Aegena for 'stiffness of the joints' (Skinner, 1961; Haubrich, 2003). It was probably employed to depict the clinical picture of bent or crooked limbs because of stiffness of joints. Ankyloglossia or tongue tie refers to fusion (partial or total) of ventral surface of the tongue to floor of the mouth (Scully *et al*, 2002). However, using '*ankylos*' as prefix in ankyloglossia implies 'crooked' or 'bent' tongue. Alternatively, *glossopagus* (from Greek *pagos,* 'fixed or fastened together') or *confixus linguae* (from Latin *confixus*, 'fixed' + *linguae*, 'tongue') may be applied to imply the 'fixed' characteristic of tongue tie.

Eosin was given its name from Greek '*eos*' – the dawn, alluding to the rosy sky of the day and the term *eosinophil* for the cell that exhibits an attraction (from Greek '*philos*' – an affinity) for eosin stain (Haubrich, 2003). Hence the adjective eosinophilic in the disease *eosinophilic granuloma* gives the impression that the granuloma is eosinophilic (i.e., readily stainable with eosin). Probably the term chronic localized Langerhans' cell histiocytosis is more appropriate (Scully, 2001).

Dens in dente is a well-known misnomer because it is not tooth within a tooth. '*Dens*' is the etymological root origin for tooth in Latin and '*dentes*' connotes teeth (Dunglison, 1868; Skeat, 1993). Latin *dente* is not the singular form of *dentes*. *Dentes* is used as an adjective for different types of teeth: *dentes incisores* – the biting teeth; *dentes cuspidatus* – the pointed teeth; *dentes molaris* – the grinding teeth (Stone, 1999). Therefore the term '*dente'* in 'dens in dente' is incorrect. This misconception is probably from the Italian expression *al dente* which means 'to the tooth' and describes pasta and (less commonly) rice or beans that have been cooked so as to be firm enough to be chewed but not hard.

A synonym for dens in dente is *dens invaginatus* (from Latin *in,* 'within' + *vagina,* 'sheath') implying the infolding of one part within another part of a structure (from Medieval Latin *invaginatus,* past participle of *invaginare,* from Latin *in-* + *vagina* sheath) (Skinner, 1961), which, although technically correct, may give other suggestions to the debauched mind.

Dilaceration is derived from Latin (*di*, 'apart' or 'through' + *lacerare*, 'to tear') meaning 'to tear apart' (Skeat, 1993). Therefore, dilaceration of a tooth would mean 'a tooth torn apart'. However, the word is meant to denote a tooth with an abnormal angulation, bent or curve of the root or crown (Scully *et al*., 2002). A better term would be *flexidens* or *flexodont* – from Latin '*flectere*' to bend and '*dens*'/'*odontos*' for tooth.

Misnomers because of erroneous concepts

These are terms which do not accurately state the tangible attributes of a disease process. For example, *ameloblastoma* literally means tumor of ameloblasts. However, other cells of dental (enamel) organ are also present in the epithelial islands of the tumor. Moreover, are these peripheral cells of the epithelial islands truly ameloblasts? The inner enamel epithelial cells are negative for laminin-5 $\gamma 2$ chain whereas ameloblasts that have differentiated from the former are strongly positive. The peripheral cells of the epithelial islands in ameloblastoma stain weakly for laminin – 5 and therefore in high probability preameloblasts rather than true ameloblasts (Sahlberg *et al* 1998; Salo *et al* 1999). However, to term it *preameloblastoma* would create confusion, because this would mean the tumor is a precursor to ameloblastoma.

Aneurysmal bone cyst is another lesion that has been erroneously labeled as such. Aneurysm means widening, from Greek '*aneurysmos*' – dilation, from '*aneurynein*' – to dilate, from '*ana*' up + '*eurynein*' widen, from '*eurys*' broad (Skinner, 1961). It is usually used in relation to blood vessels. However, aneurysmal bone cyst is neither associated with aneurysm nor a true cyst.

A classical example of misnomers is *pyogenic granuloma*. Pyogenic granuloma (also known as a 'Granuloma gravidarum', and 'Pregnancy tumor') was first described in 1897 by two French surgeons, Poncet and Dor, who named this lesion *otyomycosis hominis,* meaning fungal infection of the external auditory canal in humans (Ferry and Zimmerman, 1965), which is itself a misnomer. Pyogenic granuloma literally means '*pus-producing granuloma'* (Haubrich, 2003). However, it is neither pyogenic nor a granuloma.

A granuloma by definition is a type of nodular, chronic inflammatory reaction characterized by a cell-mediated immunologic reaction resulting in a compact aggregation of activated macrophages, epithelioid cells, and giant cells, surrounded by a collar of lymphocytes and plasma cells and confined by an area of fibrosis, with or without central necrosis (Adams, 1976; Riede and Werner, 2004). However, histopathologically pyogenic granuloma is composed of *granulation tissue* consisting of cellular fibrous connective tissue admixed with proliferating vascular channels and a mixed inflammatory infiltrate covered by an ulcerated mucosa. Pyogenic granuloma in reality is a reactive/inflammatory process that arises in response to various stimuli such as low-grade local irritation, traumatic injury, or hormonal factors (Jafarzadeh *et al*, 2006). The term pyogenic granuloma must have been assigned to indicate tumor of granulation tissue although it is not neoplastic by nature.

Other names suggested for pyogenic granuloma include: telangiectatic granuloma, benign pedunculated granuloma, fibroangioma, Croker and Hartzell disease, septic granuloma, hemangiomatous granuloma, and eruption capillary hemangioma (Patrice *et al*, 1991). However, dermatologists consider pyogenic granuloma as *capillary hemangioma of lobular subtype*, especially since it is quite prone to bleeding (Robinson, 2010). However, the term *hemangioma* itself is a misnomer as it is considered to be a hamartoma with anomalous proliferation of endothelial-lined vascular channels rather than a true neoplasm (Grabb *et al*, 1980). It derives its origin from the Greek words '*haema*' – blood, '*angeio*' – vessel and the suffix – '*oma*' – tumor. In fact, the prefix '*haema*' is incorrect from etymological standpoint, '*haemato*∼' or '*haemo*∼' being preferred (Skinner, 1961).

Another common misnomer is *fibroma*, a reactive lesion of the oral cavity but etymologically means tumor of fibrous connective tissue (from Latin *fibra*, 'fiber' + Greek *oma*, 'tumor') (Skinner, 1961). It has also been called fibrous *epulis* (from Greek *epi,* 'upon' + *ulon*, 'gums'), and applied to any lump arising on the on the gingiva (Laskaris and Scully, 2003). However, this lesion occurs in other areas of the oral cavity too. Furthermore, the term *epulis* is a clinical term without any indication of its nature – whether it is developmental, inflammatory, or neoplastic. The so-called fibroma is in reality a reactive lesion, and a more appropriate term for it is either *inflammatory fibrous hyperplasia* or *reactive fibrous hyperplasia*. Similarly *peripheral ossifying fibroma* is also not a true neoplasm and not a soft tissue counterpart of central ossifying fibroma, which is considered to be a tumor. It is, histologically speaking, reactive fibrous hyperplasia showing ossifications and/or calcifications. Moreover, true non-ossifying fibroma (fibromyxoid tumor) is also known to occur, albeit rarely, in jaw bones (Makek, 1980; Wenig and Heffess, 2008; Khurana, 2009).

A similar term (gingival) *fibromatosis* gives the impression that multiple fibromas exist as in the case of neurofibromatosis. It could be confused with aggressive fibromatoses, a diverse group of locally recurring and potentially aggressive, non-metastasizing, superficial or deep tumors derived from a proliferation of well-differentiated fibroblasts and myofibroblasts (Angiero *et al*, 2008). It has been suggested to designate the condition as *generalized gingival hyperplasia* (Häkkinen and Csiszar, 2007). However, the term *gingival hyperplasia* is a misnomer because there is no actual increase of cells in the tissues involved, only an excessive production of collagen (Bhattacharyya *et al*, 2006).

Another lesion of the oral cavity that has been inaccurately named is *melanoacanthoma*, which gives impression that it is a tumor of melanocytes and acanthocytes and related to melanoacanthoma of skin (Neville *et al*, 2009) although it is reactive lesion. On the contrary, the term *melanoma* which gives impression of a benign tumor, is malignant by nature.

One of the most surprising misnomers is *squamous cell carcinoma*. It has been called so because it is derived from stratified squamous epithelium. But the term implies that the tumor is primarily composed of squamous cells. But this malignant tumor comprises cells other than the squamous type. Moreover, the poorly differentiated variety rarely shows squamous cells. This confusion in terminology could be because of the earlier concept of de-differentiation for epithelial malignancy.

The scientific term for this is *anaplasia* (from Greek *ana,* 'backward' + *plassein,* 'to mould, to form'), which literally means a reversal of mature normal cells to a more primitive or undifferentiated form in malignancy (Haubrich, 2003). However, this concept is no longer valid as it is now known that in malignancy the neoplastic cells arise from stem cells. The problem is in maturation of basal stem cells to squamous cells and not dedifferentiation of the latter to the former. The well-differentiated cancer evolves from maturation of specialization of undifferentiated cells as they proliferate, whereas the undifferentiated malignant tumor derives from proliferation without complete maturation of the transformed cells (Kumar *et al,* 2004). Although squamous cell carcinoma has also been called *epidermoid carcinoma*, this would not be appropriate for oral carcinoma as the term '*epidermoid'* means 'upon the skin' (from Greek *epi,* 'upon' + *derma,* 'skin, hide, leather') (Haubrich, 2003).

Carcinoma reminds us of another very well-known misnomer *carcinoma-in-situ*. It is defined as a lesion where dysplastic features are present throughout the entire thickness of the epithelium but the basement membrane is intact with no tumor cells in the subepithelial stroma. The term '*in situ'* derived from Latin '*in*' for within + '*situs*' for position, and plainly means '*in the natural or normal place'* (Cassellman, 1998). It, however, does not reveal whether the lesion is a carcinoma now but has not yet become invasive, or whether it is not a carcinoma now and will become cancer later. Although dysplastic features are present, dysplasia does not necessarily progress to cancer (Smith, 1978). It has also been called *intraepithelial carcinoma,* which is also a misnomer. Carcinoma by definition means invading into the underlying connective tissue. If it is intraepithelial it is not carcinoma. If it is carcinoma it is not confined to epithelium. Hence intraepithelial carcinoma is made up of two mutually exclusive terms.

Another common misnomer is *odontoma*, derived from Greek '*odous*' – tooth + '*oma*' – tumor (Nybakke, 1985; Haubrich, 2003) which literally means a dental tumor (Campbell, 1888). If we go by this definition, all tumors of derived from dental formative tissues are odontomas. Moreover, these odontomes are considered to be a group of non-neoplastic developmental anomalies or malformations (Scully *et al*., 2002) rather than true neoplasms.

Misnomers because of misapplication of terms

It has always been a matter of confusion whether to use the term *candidiasis* or *candidosis* for Candida infection. Generally, the suffix '*-iasis*' has been applied to infections of helminthic (like ascar*iasis*, schistosom*iasis*, filar*iasis*) and protozoal (such as amoeb*iasis*, giard*iasis*, leishman*iasis*, trypanosom*iasis*) origins whereas the suffix '*-osis*' has been usually employed for fungal infections like Coccidioidomyc*osis*, Histoplasm*osis*, Blastomyc*osis*, Paracoccidioidomyc*osis*, and Sporotrich*osis* (Buchanan 1956). There is no particular reason why this distinction has been made, although etymologically both '*-iasis*' and '*-osis*' are of Greek origin and mean '*a disease or condition characterized by the presence of*'.

The existing usage of inconsistent disease terminology prompted the World Association for the Advancement of Veterinary Parasitology (WAAVP) to establish a Terminological *ad hoc* Committee in 1985, and to develop principles for a Standardized Nomenclature of Animal Parasitic Diseases (SNOAPAD). According to SNOPAD, when disease names are formed from the taxonomic name of the parasite, uniformly suffix '-osis' (in plural '-oses') must be used for coining terms to denominate a disease or infection. For example, trypanosoma – trypanosom*osis*, ascaris – ascari*osis* (Kassai, 2006). In 1992, the ISHAM Mycoses Nomenclature Committee recommended that the traditional approach to mycoses nomenclature in which the name of a causative taxon is suffixed with '-asis', '*-iasis*', '*-osis*', or '*-mycosis*' should be avoided and that individual mycoses should be named as often as possible in the form 'pathology A due to/caused by fungus X' or '(adjectival) fungus X pathology A' (Odds *et al*, 1992). For example, oral thrush caused by *Candida albicans*.

Schwannoma is one lesion which has been called by a variety of terms that include: neurilemoma, neurilemmoma, neurolemmoma, perineural fibroblastoma, and neurinoma (Rajendran and Sivapathasundharam, 2009). So which one is correct? Schwannomas are encapsulated benign tumors of peripheral nerve sheath origin composed of differentiated Schwann cells. The peripheral nerve sheath is called *neurilemma*. Hence the term neur*i*lemmoma is more appropriate than neur*o*lemmoma. To avoid confusion, it is better to call it Schwannoma. A type of Schwannoma, called *acoustic neuroma*, is a well-known but commonly used misnomer although Vestibular Schwannoma is a more appropriate term. This tumor arises from the investing Schwann cell of the vestibular division (not cochlear) of the eighth cranial nerve and not from neural elements (Warnick, 1994; Roland *et al*, 1997).

There are some terms, which when interpreted in different ways, give different connotations. A typical example of such a term is *agranulocytosis*. If we look at the etymology of agranulocyte, it is derived from Greek '*a*' – not + Latin '*granulum*' – a small grain + Greek '*Kytos*' – cell and refers to lymphocytes and monocytes (Tindall, 1997; Jones, 2008) to distinguish from granulocytes that is, neutrophils, eosinophils, and basophils. Accordingly, does the term agranulocytosis mean '*agranulocyte + osis'* (a condition with agranulocytes) or *'a + granulocyte + osis'* (which would mean a condition with complete absence of granulocytes)? The condition actually refers to the latter. Agranulocytosis is defined as complete absence of neutrophils in peripheral blood. Severe neutropenia is the term usually applied to patients with less than 500 neutrophils μl^{-1}. Agranulocytosis usually refers to patients with less than 100 neutrophils μl^{-1} (Theml *et al*, 2004; Munker *et al*, 2007).

Another condition with similar confusion is *oral submucous fibrosis*. In 1952, Schwartz coined the term *atrophica idiopathica mucosa oris* to describe an oral

fibrosing disease which he discovered in five Indian women from Kenya. Joshi (1953) subsequently coined the termed oral submucous fibrosis for the condition. Is it fibrosis of the submucosa (which would mean that lamina propria is spared!) or is it fibrosis below the mucosa? In actuality, this chronic debilitating disease of the oral cavity is characterized by inflammation and progressive fibrosis of lamina propria and deeper connective tissues (Tilakaratne *et al*, 2006; Auluck *et al*, 2008).

Another misleading term is *actinomycosis*, the origin (Greek, *aktis,* ray, *mykes,* fungus) of which suggests that it is a fungal disease (Haubrich, 2003). The term actinomyces ['ray fungus'] was given by Aktino because of its radiating appearance in the sulfur granule (Harz 1877–78) but it is known that actinomycosis is a bacterial infection caused by filamentous, gram-positive anaerobic bacteria (Neville *et al* 2009).

When we look at salivary gland lesions and tumors, we observe that there are a good number of misnomers. *Pleomorphic adenoma* is the most common tumor of glandular origin in the head and neck (Gnepp and Wenig, 1991). It has been called mixed tumor because it has both epithelial components (consisting of benign ductal structures and myoepithelial cells) and mesenchymal components (fibrous, chondroid and/or myxoid elements). However, the term '*mixed tumor'* gives and impression of combined epithelial/mesenchymal origin, although mesenchymal constituent is as a result of metaplasia. Similarly the word '*pleomorphic*' may give an impression that tumor cells are pleomorphic. Etymologically, the term '*pleomorphism*' (from Greek *pleio, pleo, plio*, 'more in size or number' + *morphē*, 'shape or form') literally means possession of more than one form (Haubrich, 2003). The term is used in histology and cytology, primarily to describe variability in the size and shape of cells and/or their nuclei, a feature characteristic of malignant neoplasms. However, '*pleomorphism*' in pleomorphic adenoma is microscopically architectural rather than cellular.

Another salivary gland tumor, Warthin tumor, has been variously called as adenolymphoma, cystadenolymphoma, and papillary cystadenoma lymphomatosum. The tumor is named after Aldred Warthin (1929), a pathologist who published the first two reports in the American literature in 1929. Warthin tumor is preferred to avoid any possible confusion with a lymphoid malignancy, and with another separate entity, lymphadenoma, which is also known to involve salivary glands (Ma *et al*, 2002; Neville *et al*, 2009).

Another condition which has been mistakenly coined is *leukoedema*. The term literally means white swelling – derived from combination of Greek words '*leukos*' – white and '*oedema'* – a swelling or tumor (Haubrich, 2003). Clinically the lesion presents itself as milky whitish wrinkled mucosa or folds (Scully *et al*, 2004), and not as swelling as the name implies. Moreover, the edema in the title actually refers to intracellular edema of the spinous layer of the epithelium observed histologically (Neville *et al*, 2009). As the lesion comprises white wrinkles, the author suggests the terms '*oral leukorhytiosis*' or '*leukorhytidosis*', [from Greek *leukos,* 'white' + *rhytis,* 'wrinkle' + *osis*, 'condition'] (Dunglison 1868) or '*rugae buccarum*' [from Greek *rugae,* 'folds' + *bucca,* 'cheeks'] as it mainly affects the buccal mucosa.

Granular cell myoblastoma was described by Abrikossoff in (1926), at which time it was thought to be of muscular origin. It is a misnomer because the tumor is clearly not of muscle origin. Among the major theories of origin, some support the tumor's derivation from neuronal tissue, histiocytes, fibroblast, or Schwann cells (Victoria *et al*, 1998). Granular cells can occur in various odontogenic and non-odontogenic tumors. The mesenchymal odontogenic granular cell is a fibroblast, whereas the epithelial granular cell is derived from enamel epithelium. The term '*granular cell ameloblastic fibroma*' is a misnomer, as a number of these tumors are probably central odontogenic fibromas exhibiting granular cell transformation (Rühl and Akuamoa-Boateng, 1989).

The term *mycosis fungoides* was first used by a French dermatologist, Jean Louis Alibert (1806), when he described a severe disorder in which large necrotic tumors resembling mushrooms presented on a patient's skin. Mycosis fungoides implies that it is a fungal infection, although it is in fact cutaneous T-cell lymphoma (Diamandidou *et al*, 1996).

Eponymous misnomers

Eponyms are an established convention in science and medicine. The term eponym is derived from the Greek word '*epōnymos*' – named after someone, from a combination of words '*epi*' – upon, and '*ōnyma*' – name (Scully and Baum 2009). An *eponymous disease* is usually named after the person who first described the condition. This usually involves publishing an article in a respected medical journal. However, a good number of eponyms are either attributed to a person who has not contributed to its original discovery or has misunderstood the lesion. Commonly, the eponym derives from a person who has popularized something rather than the one who first described it. For example, although the Valsalva manoeuvre (1704) had been described earlier by Ambroise Paré (1634) and even earlier by Leonard of Bertapagglia (1497), it was Antonio Valsalva who popularized it.

Another example of eponymous misnomers is *Crohn's disease*. Leon Ginzburg and Gordon Oppenheimer were conducting an investigation into the nature of nonspecific granulomatous disease involving the ileum, under the guidance of the surgeon, A. A. Berg. When Burrill Crohn came across two such patients, he collected Ginzburg's material, added his own cases, and planned to present it at a conference, as the sole author. It was then suggested by Berg that Ginzburg and Oppenheimer to be co-authors on the paper. Berg himself declined to be a co-author because he did not wish to append his name to a paper that he had himself not written – else it may well have been called Berg's disease today. Moreover, it is now known that Thomas

Kennedy Dalziel gave the first complete description of the lesion as early as 1913 (Lock *et al,* 2001).

Another classical example is the Plummer–Vinson syndrome, consisting of dysphagia, upper esophageal web, glossitis, and anemia, which was actually described by Adam Brown Kelly and Donald Paterson in 1919. What Vinson described in 1922 were patients with dysphagia and anaemia, but no glossitis, while together they wrote a paper on lower esophageal spasm. Plummer, remarkably, did not ever publish a paper on the subject! Unfortunately, it is difficult, if not impossible, to replace established eponyms (Lock *et al,* 2001).

Some have received eponymous immortality through sheer error. Proliferative periostitis, a distinctive type of chronic osteomyelitis, has been regarded as synonymous with Garrè's osteomyelitis. In a literature review, Wood *et al* (1988) found that Carl Garrè (1857–1928), a Swiss surgeon, in his historical article in 1893 did not actually describe a singular specific type of osteomyelitis. He had described special forms and complications of a single disease: acute infective osteomyelitis. The term *'periostitis ossificans'* is also not appropriate as the periosteum does not become ossified. It merely deposits new bone as the inflammatory process lifts it off the cortex. The label *chronic osteomyelitis with proliferative* periostitis is a more acceptable depiction of the pathology.

Conclusion

Any successful practitioner or academician should have a concrete comprehension of medical/dental terminology. Misnomers in oral pathology mainly arise from

- Misinterpretation and /or imprecise translations of Greek and Latin origins of medical and dental terms
- Misunderstanding of underlying aetiology, pathogenesis and/or histopathological features of certain lesions
- Inaccurate and/or misleading eponyms
- Too many synonyms

In all probability, there are more misnomers than those listed here, but one has to diligently search for them and their etymological origins. A man does not know what he knows until he knows what he does not know. Many of us are not ignorant of these misnomers, but we are accustomed to them. Although we know they are incorrect, we continue with these terms as a matter of convenience or because of the lack of suitable alternatives. With better methods of investigation and fresher insights, disease names should become less complicated and more meaningful in the science of oral pathology.

References

Abrikossoff A (1926). Uber myome. Ausgelend von der Quergestreiften willkurlichen Muskulatur. *Virchows Arch A Pathol Anat Histopathol* **260:** 215–233.

Adams DO (1976). The granulomatous inflammatory response. A review. *Am J Pathol* **84:** 164–191.

Angiero F, Benedicenti S, Stefani M (2008). Fibromatosis of the head and neck: morphological, immunohistochemical and clinical features. *Anticancer Res* **28:** 1725–1732.

Auluck A, Rosin MP, Zhang L, Sumanth KN (2008). Oral submucous fibrosis, a clinically benign but potentially malignant disease: report of 3 cases and review of the literature. *J Can Dent Assoc* **74:** 735–740.

Bhattacharyya I, Islam MN, Yoon TYH, *et al*. (2006). Lip hypertrophy secondary to cyclosporine treatment: a rare adverse effect and treatment considerations. *Oral Surg Oral Med Oral Path* **102:** 469–474.

Campbell FR (1888). *The language of medicine: a manual giving the origin, etymology, pronunciation and meaning of technical terms found in medical literature*. D Appleton and Co.: New York, p. 250.

Cassellman W (1998). *A dictionary of medical derivations: the real meaning of medical terms*. The Parthenon Publishing Group Inc.: New York, P. 192.

Desbiens NA (1987). Medical misnomers. *Resid Staff Physician* **33:** 155–158.

Diamandidou E, Cohen PR, Kurzrock R (1996). Mycosis fungoides and Sezary syndrome. *Blood* **88:** 2385–2409.

Dirckx JH (1987). Misnomers and Misfits. *J AAMT*, **6:** 24.

Doan T, Melvold R, Waltenbaugh C (2005). *Concise medical immunology*. Lippincott Williams & Wilkins: Baltimore, pp. 194, 239.

Dunglison R (1868). *Medical lexicon: a dictionary of medical science*. Henry C Lea: Philadelphia, USA, pp. 298, 845.

Ferry AP, Zimmerman LE (1965). Granuloma pyogenicum of limbus. *Arch Ophthalmol* **74:** 229–230.

Gnepp DR, Wenig BM (1991). *Surgical pathology of the salivary gland*. W.B. Saunders: Philadelphia, p. 350–368.

Grabb WC, Dingman RO, Oneal RM, Dempsey PD (1980). Facial hamartomas in children: neurofibroma, lymphangioma, and hemangioma. *Plast Reconstr Surg* **66:** 509–527.

Häkkinen L, Csiszar A (2007). Hereditary gingival fibromatosis: characteristics and novel putative pathogenic mechanisms. *J Dent Res* **86:** 25–34.

Harz CO (1877–1878). *Actinomyces bovis* ein neuer schimmel in den geweben des rindes. *Deutsche Zeitschrift für Thiermedizin*, **5:** 125–140.

Haubrich WS (2003). Medical meanings. *A glossary of word origins*, 2nd edn. American College of Physicians: USA, pp. 4, 14, 15, 73, 78, 79, 96, 99, 115, 133, 158, 162, 185, 198.

Jafarzadeh H, Sanatkhani M, Mohtasham N (2006). Oral pyogenic granuloma: a review. *J Oral Sci* **48:** 167–175.

Jones BD (2008). *Comprehensive medical terminology*. Thomson Delmar Learning: New York, pp. 300–301.

Joshi SG (1953). Fibrosis of the palate and pillars. *Indian J Otolaryngol* **4:** 1.

Kassai T (2006). Nomenclature for parasitic diseases: cohabitation with inconsistency for how long and why? *Vet Parasitol* **138:** 169–178.

Khurana JS (2009). *Bone pathology*, 2nd edn. Humana Press: New Jersey, 2009, p. 99.

Kumar V, Abbas AK, Fausto N (2004). *Robbins and Cotran pathologic basis of disease*, 7th edn. Elsevier, Saunders: Philadelphia, p. 273.

Laskaris G, Scully C (2003). *Periodontal manifestations of local and Systemic diseases: colour atlas and text*. Springer-Verlag: Berlin, Heidelberg, P. 297.

Lock S, Last JM, Dunca G (2001). *The Oxford illustrated companion to medicine*, 3rd edn. Oxford University Press: New York, pp. 500–502.

Ma J, Chan JK, Chow CW, Orell SR (2002). Lymphadenoma: a report of three cases of an uncommon salivary gland neoplasm. *Histopathology* **41:** 342–350.

Makek M (1980). Non-ossifying fibroma of the mandible. A common lesion with unusual location. *Arch Orthop Trauma Surg* **96:** 225–227.

Munker R, Hiller E, Glass J, Paquette R (2007). *Modern hematology: biology and clinical management*, 2nd edn. Humana Press Inc: New Jersey, pp 130–133.

Neville BW, Damm DD, Allen CM, Bouquot JE (2009). *Oral maxillofacial pathology*. 3rd edn, Saunders Elsevier: Missouri, pp. 9, 203, 380, 482.

Nosrati N, Harting MS, Yang DJ, Shen YA, Maender JL, Jogi RP, Sonabend ML, Hsu S (2008). Dermatology Misnomers. *Dermatol Online J* **14:** 22.

Nybakken OE (1985). *Greek and Latin in scientific terminology*. Blackwell Publishing Professional: USA, pp. 6, 13, 141.

Odds FC, Arai T, Disalvo AF, *et al*. (1992). Nomenclature of the fungal diseases: a report and recommendations from a sub-committee of the International Society for Human and Animal Mycology (ISHAM). *J Vet Med Mycol* **30:** 1–10.

Patrice SJ, Wiss K, Mulliken JB (1991). Pyogenic granuloma (lobular capillary hemangioma) a clinic pathological study of 178 cases. *Pediatr Dermatol* **8:** 267–276.

Buchanan RE (1956). Nomenclatural significance of in naming diseases -iasis, -osis, and -itis as suffixes. *Int Bull Bacteriol Nomenc Taxon* **6:** 13–17.

Rajendran R, Sivapathasundharam B (2009). *Shafer's textbook of oral pathology*, 6th edn. Elsevier: New Delhi, p. 200.

Ribes R, Ros PR (2006). *Medical English*. Springer-Verlag: Berlin, P 109.

Riede U-N, Werner M (2004). *Color atlas of pathology: pathologic principles, associated diseases, sequelae*. George Thieme Verlag: Stuttgart, Germany, p 228.

Robinson RA (2010). *Head and neck pathology: atlas for histologic and cytologic diagnosis*. Wolters Kluwer/Lippincott Williams & Wilkins: Philadelphia, USA, p. 74.

Roland PS, Marple BF, Myerhoff WL (1997). *Hearing loss*. Thieme Medical Publishers, Inc.: New York, P. 246.

Rühl GH, Akuamoa-Boateng E (1989). Granular cells in odontogenic and non-odontogenic tumours. *Virchows Arch A Pathol Anat Histopathol* **415:** 403–409.

Sahlberg C, Hormia M, Airenne T, Thesleff I (1998). Laminin $\gamma 2$ expression is developmentally regulated during murine tooth morphogenesis and is intense in ameloblasts. *J Dent Res* **77:** 1589–1596.

Salo T, Kainulainen T, Parikka M, Heikinheimo K (1999). Expression of laminin-5 in ameloblastomas and human fetal teeth. *J Oral Pathol Med* **28:** 337–342.

Schwartz J (1952). *Atrophica idiopathica (tropica) mucosa oris*. Demonstrated at the Eleventh International Dental Congress: London.

Scully C (2001). *Handbook of oral disease: diagnosis and management*. Revised edition. Martin Dunitz: London, p. 160.

Scully C, Welbury R, Flaitz C, de AlmeidaOP (2002). *A colour atlas of orofacial health and disease in children and adolescents*, 2nd edn, Martin Dunitz Ltd: London, pp. 19, 80, 98.

Scully C, Flint SR, Porter SR, Moos KF (2004). *Oral and Maxillofacial Diseases: an illustrated guide to the diagnosis and management of diseases of the oral mucosa, gingiva, teeth, salivary glands, bones and joints*, 3rd edn, Taylor and Francis: Oxfordshire, UK, P. 362.

Scully C, Baum B (2009). Marathon of eponyms (editorial). *Oral Dis* **15:** 185–186.

Skeat WW (1993). *The concise dictionary of English etymology: the pioneering work on the roots and origins of English language*. Wordsworth Editions Ltd: Hertfordshire, pp. 15, 114, 235, 286.

Skinner HA (1961). *The origin of medical terms*, 2nd edn. 1961. The Williams & Wilkins Co: Baltimore, pp. 28, 30, 133, 159, 164, 174, 177, 200, 230, 294, 297

Smith C (1978). Carcinoma-in-situ. *Human Pathol*, **9:** 373.

Stone JR (1999). *More Latin for the Illiterati: a guide to everyday medical, legal and religious Latin*. Taylor and Francis Routledge: New York, pp. 13, 16, 74, 110, 206.

Theml H, Diem H, Haferlach T (2004). *Color atlas of hematology: practical microscopic and clinical diagnosis*, 2nd revised edn. Thieme Clinical Sciences: Germany, pp. 86–87.

Tilakaratne WM, Klinikowski MF, Saku T, Peters TJ, Warnakulasuriya S (2006). Oral submucous fibrosis: review on aetiology and pathogenesis. *Oral Oncol* **42:** 561–568.

Tindall AR (1997). *Medical roots and their origins*. Swets and Zeitlinger Publishers B.V: Lisse, The Netherlands, P. 46.

Victoria LV, Hoffman HT, Robinson RA (1998). Granular cell tumour of the larynx. *J Laryngol Otol* **112:** 373–376.

Warnick RE (1994). Tumors associated with the Phakomatoses. In: Morantz RA, Walsh JW, eds. *Brain tumors: a comprehensive text*. Marcel Dekker Inc.: New York, pp 538.

Warthin AS (1929). Papillary cystadenoma lymphomatosum: a rare teratoid of the parotid region. *J Cancer Res* **13:** 116–125.

Wenig BM, Heffess CS (2008) *Atlas of head and neck pathology*, 2nd edn. Saunders Elsevier: Philadelphia, p. 93.

Wood RE, Nortjé CJ, Grotepass F, Schmidt S, Harris AM (1988). Periostitis ossificans versus Garré's osteomyelitis. I. What did Garré really say?. *Oral Surg* **65:** 773–777.

Internet websites:

http://www.eaom.net/

http://www.etymonline.com

http://www.myetymology.com/

http://wordinfo.info/

http://www.wikipedia.org/