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REVIEW ARTICLE

-Oids: An Insight

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ABSTRACT

The suffix "-oid," which means "like" or "resembling," comes from the Latin oides and Greek eides, which have the same meanings. An electronic database search for the words ending with the suffix -oid and its "significance" was made, and we came across various such words in the literature (oral pathology), which bears resemblance to its original counterpart. As the terms ending with the suffix -oid very often tend to be used in various diseases and conditions, it is important for the oral pathologist to be familiar with such terms.

This article provides a brief insight into the -oids words so as to aid in diagnosis and serves as a ready reckoner.

Keywords: Diagnosis, -Oids, Oral pathology, Reckoner, Resembling.

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INTRODUCTION

The suffix "-oid," which means "like" or "resembling," comes from the Latin oides and Greek eides, which have the same meanings. Here is a brief insight into the terms that we come across in oral pathology with the suffix -oids. This article provides the arrangement and description of these terms in an alphabetical order, which encompasses cells, inclusion bodies, reactions, conditions, and so on. This review would serve as a ready reckoner for the terms ending with the suffix -oids, so as to aid in diagnosis.

This literature review talks about the arrangement of some lesions or terms that have shared some characteristics of -oids, in alphabetical order.

ADENOID

It is derived from the word "adeno" meaning "pertaining to a gland" observed in adenoid squamous cell carcinoma [pseudoglandular squamous cell carcinoma, squamous cell carcinoma with gland-like (adenoid) features, angiosarcoma-like squamous cell carcinoma, adenoacanthoma, pseudovascular adenoid squamous cell carcinoma, and pseudoangiosarcomatous carcinoma] (Fig. 1). Adenoid squamous cell carcinoma is very rare and is nonglandular in origin, and because of central acantholysis and degeneration, its appearance is pseudoadenocarcinomatous. Adenoid cystic carcinoma is one of the commonest and best recognized salivary gland malignancies. Slow growth, local recurrence, perineural invasion, and distant metastasis are the typical clinical findings.[1]

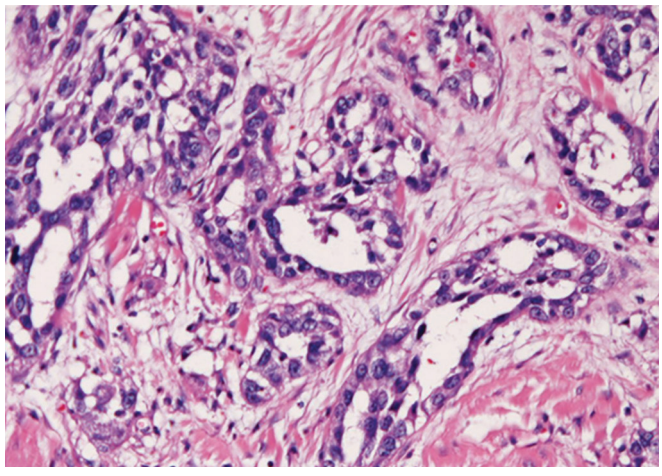

Fig. 1: Adenoid squamous cell carcinoma (*Courtesy*: Terada T. Int J Clin Exp Pathol 2012;5(5):442-447)

The adenoid, also known as a pharyngeal tonsil or nasopharyngeal tonsil, is a mass of lymphatic tissue situated posterior to the nasal cavity, in the roof of the nasopharynx, where the nose blends into the throat. Normally, in children, it forms a soft mound in the roof and posterior wall of the nasopharynx, just above and behind the uvula. Clinical significance includes adenoid hypertrophy or enlarged adenoid, or it can become nearly the size of a ping-pong ball and completely block airflow through the nasal passages.[2]

ADENOMATOID

Adenomatoid means resembling adenoma. Adenoma is a type of noncancerous tumor or benign tumor that may affect various organs. It is derived from the word "adeno" meaning "pertaining to a gland."

The adenomatoid odontogenic tumors (Fig. 2) show epithelial proliferation in which cells are placed in a nest- and cord-like pattern or solid nodules forming sheets.

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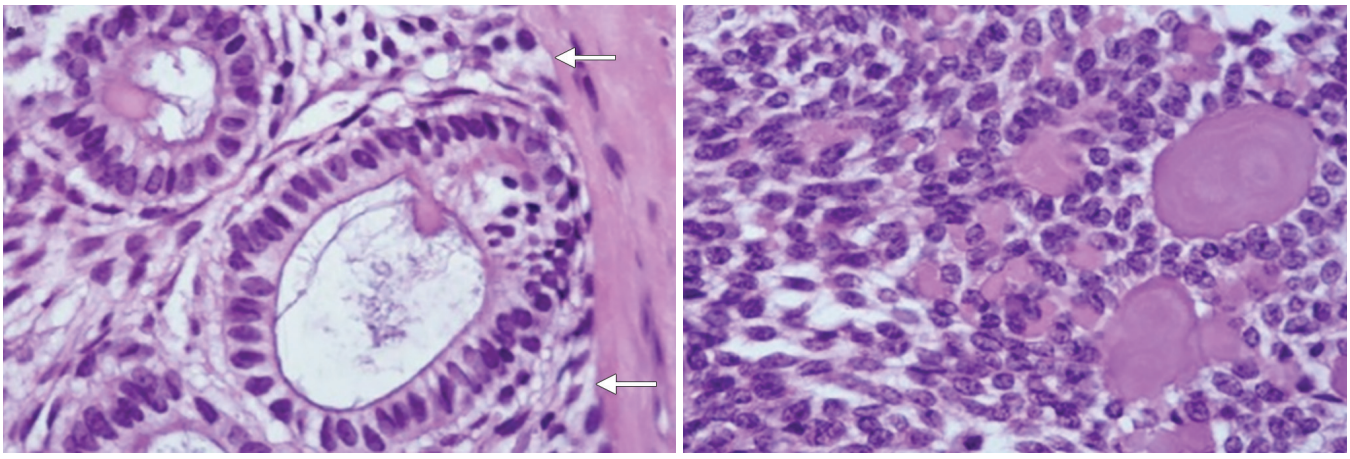

Fig. 2: Adenomatoid (*Courtesy*: Philipsen HP, Reichart PA. Oral Oncol 1999 Mar;35(2):125-131)

Adenomatoid structures are round and have a wider diameter than the duct-like structures and are outlined by tall or low columnar cells. The luminal surface of the cells bordering the adenomatoid structures showed positive results for laminin, in the immunohistochemical analysis.[3-6]

AMYLOID

amyl = starch: oid = resembling

Amyloid (Fig. 3) deposits are due to the accumulation of the abnormal light chain proteins. Amyloidosis represents a heterogeneous group of conditions characterized by the deposition of an extracellular proteinaceous substance called amyloid. Oral mucosa, particularly the tongue, is a classically affected site, and deposition of amyloid may be seen in association with the neoplastic cells. Amyloid appears homogeneous, eosinophilic, and relatively acellular. It stains metachromatically with crystal violet and shows an affinity for Congo red, and on viewing with polarized light, it demonstrates apple-green birefringence.[7]

Amyloid bodies (corpora amylacea or polyglucosan bodies) are the basophilic, hyaline masses derived from degenerate cells or secretions and consist of concentric lamellae; they become more in number with advancing age—especially over 50 years – and may undergo calcification. They are mainly seen in the prostate, brain, and lung.[8]

ASTEROID

Asteroid bodies (Fig. 4) are stellate inclusions with numerous rays radiating from a central core. Structures strongly resembling asteroid bodies may be observed in fibrin-rich exudates and in the cytoplasm of tumor giant cells. Asteroid bodies may be seen in granulomas of various entities but are most frequently encountered in the giant cells of foreign body granulomas, sarcoidosis, and berylliosis.[9]

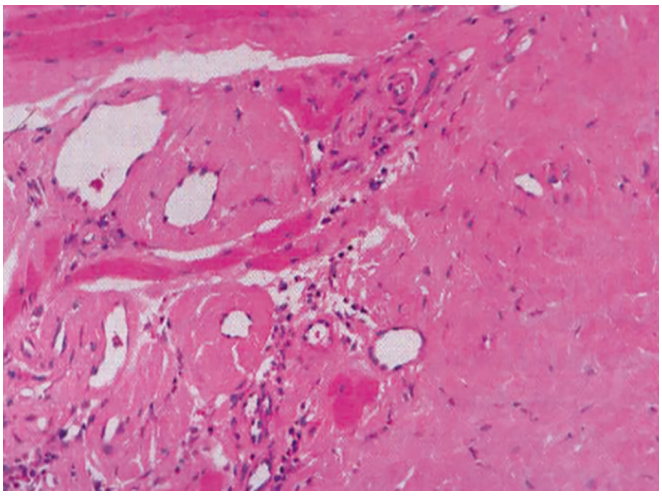

Fig. 3: Amyloid (*Courtesy*: Neville, BW.; Damm, DD.; Allen, CM.; Bonquot, JE. Oral and maxillofacial pathology. 3rd ed. New York (NY): WB Saunders Elsevier; 2009. p. 822-825)

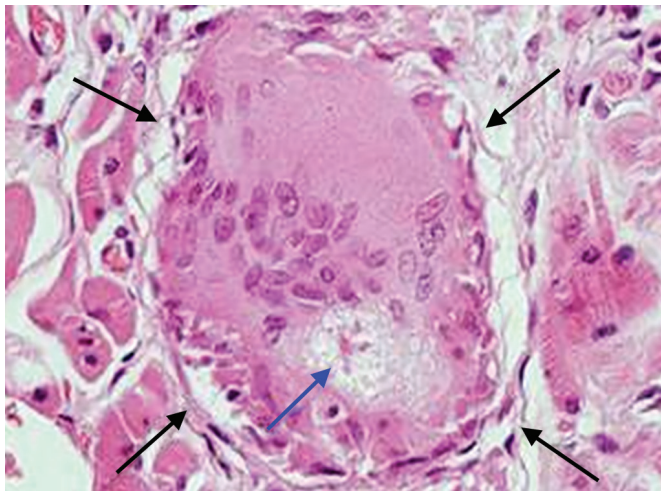

Fig. 4: Asteroid (*Courtesy*: Patil SG, Rao RS, Sharath S. A ready reckoner. Int J Clin Dent 2013;4(1):42-53)

BASALOID

Basaloid cells (Fig. 5) resemble basal epidermal layer cells. Basaloid cells are also referred to as intermediate cells in mucoepidermoid carcinoma. These cells are larger than basal cells and smaller than squamous cells and are believed to be the progenitor of epidermoid of mucous cells. They have a dark oval nucleus and little cytoplasm. Basaloid cells are mainly observed in basal cell adenoma and mucoepidermoid carcinoma.[10]

CARCINOID

Carcinoids (Fig. 6) comprise a group of neuroendocrine tumors derived from various tissues and organs. Neuroendocrine tumors form a spectrum ranging from well-differentiated neuroendocrine neoplasms, traditionally known as carcinoids, to poorly differentiated tumors with signs of neuroendocrine differentiation, such as small cell carcinomas. The existence of neuroendocrine secretory vesicles within the tumor cells is the common feature of these tumors. Carcinoids show variable expression of different endocrine markers and clinical symptoms vary depending on the levels and composition of secreted proteins (hormones). Carcinoids are commonly seen in the lung and gastrointestinal tract. Furthermore, carcinoids differ with respect to malignancy grade, which determines the rate of growth and propensity to form metastases.[11]

CEROID

The term "ceroid" derived from Greek means "wax like." Ceroid (Fig. 7) is mainly due to the oxidation and polymerization of unsaturated lipids and may appear in histiocytes in a variety of diseases. Ceroid granules are stained sea blue and ceroid-containing macrophages appear as "sea blue histiocytes," with the Wright and Giemsa methods. Ceroid-containing histiocytes are observed in Niemann–Pick disease, sickle cell anemia, chronic granulocytic leukemia, cirrhosis of liver, and idiopathic thrombocytopenic purpura.[12]

CHONDROID

Chondroid means "cartilage like." Neoplastic myoepithelial cells sometimes proliferate to form a thick,

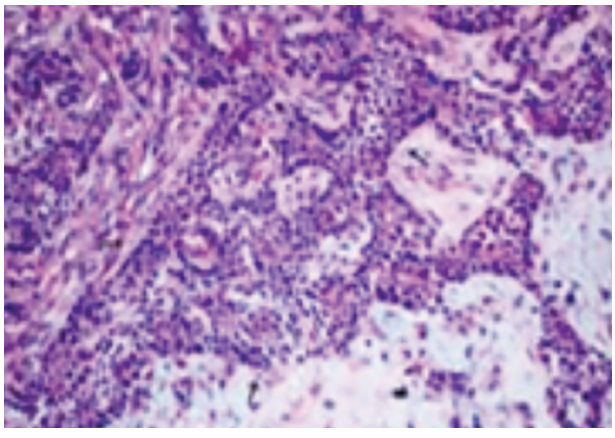

Fig. 5: Basaloid (*Courtesy*: Rajendran R, Sivapathasundharam B. Shafer's text book of oral pathology. 6th ed. New Delhi: Elsevier; 2009)

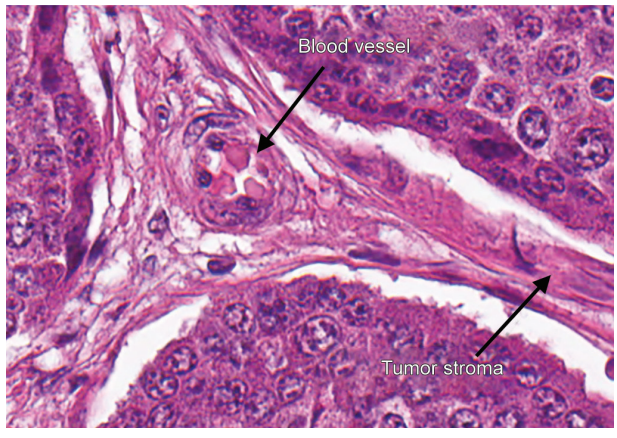

Fig. 6: Carcinoid (*Courtesy*: www.proteinatlas.org)

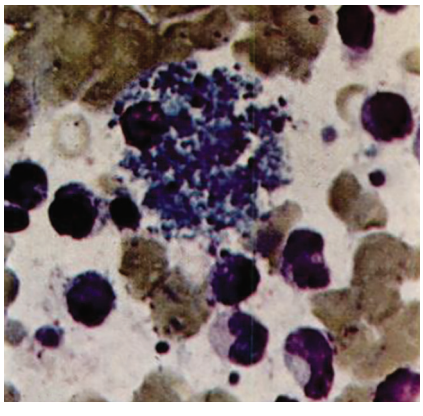

Fig. 7: Ceroid (*Courtesy*: Rywlin AM, Hernandez JA, Chastain DE, Pardo V. Blood 1971 May;37(5):587-592)

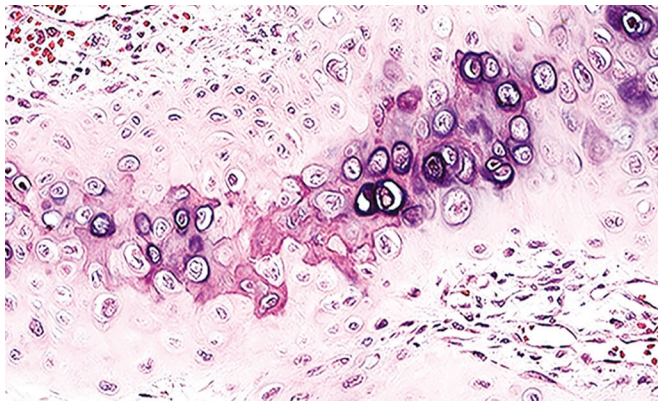

Fig. 8: Chondroid (*Courtesy*: Sanchez J, Ramirez GA, Buendia AJ, Vilafranca M, Martinez C, Altimira J, Navarro JA. Vet Pathol 2007 Sep;44(5): 676-682)

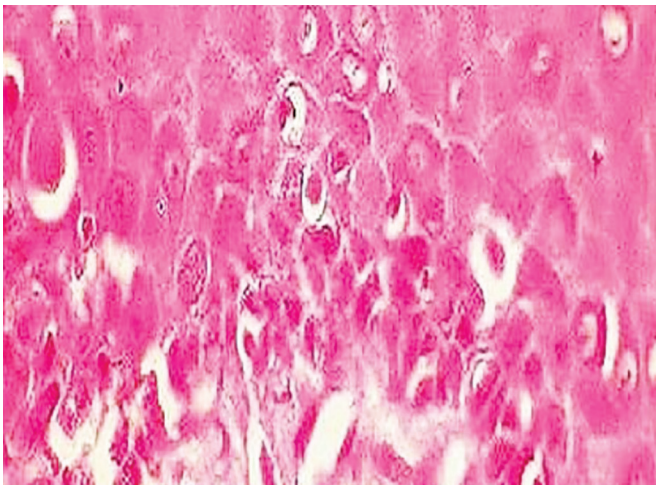

Fig. 9: Colloid (*Courtesy*: Patil SG, Rao RS, Sharath S. Int J Clin Dent 2013;4(1):31-41)

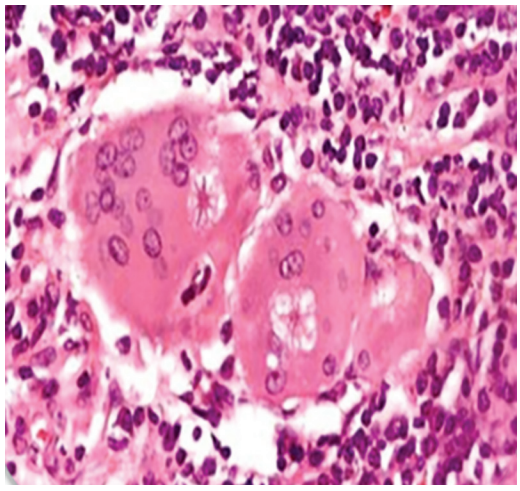

Fig. 10: Conchoid (*Courtesy*: Ang SC, Moscovic EA. Histol Histopathol 1996 Jan;11(1):125-134)

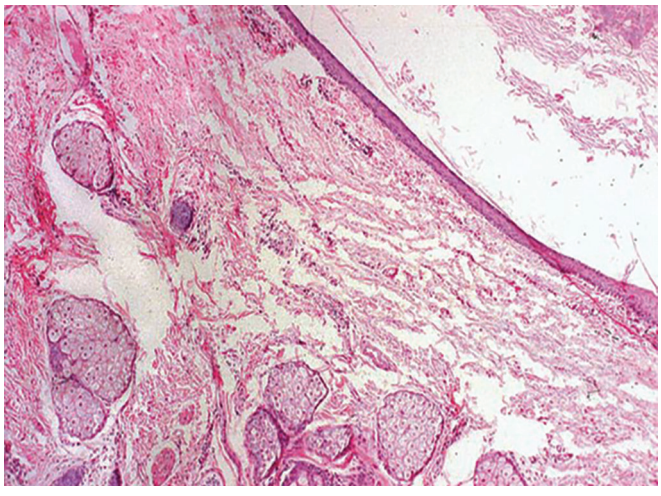

Fig. 11: Dermoid (*Courtesy*: www.ijcasereportsandimages.com)

ill-defined sheath around the salivary gland ducts, or in other cases, these cells become swollen or hydropic and appear like cartilage cells (chondroid change) (Fig. 8). Chondroid matrix is seen in pleomorphic adenoma and chondrosarcoma.[13,14]

COLLOID

Civatte or colloid bodies (cytoid, hyaline, cytoid bodies) are rounded, homogenous, eosinophilic bodies, found in deeper parts of the epithelium and upper connective tissue in lichen planus (Fig. 9). They are 10 to 25 µm in size. When they are seen in the epithelium, they are known as civatte bodies and colloid bodies in connective tissue. These bodies originate from the apoptosis of keratinocytes caused by epithelial damage created by circulating disorders and also from the destruction of the thickened basement membrane. Stains used to observe these bodies are periodic acid–Schiff, diastase resistant, hematoxylin and eosin.[15]

CONCHOID

Conchoidal bodies or asteroid-Schaumann bodies are crystalline cytoplasmic inclusions that are star, umbrella, or spider shaped and found in giant cells, mainly in granulomatous diseases such as sarcoidosis, tuberculosis, leprosy, fungal infections, and foreign body reactions (Fig. 10). They are colorless refractile crystals mainly composed of calcium oxalate, and in some cases these bodies may serve as the nidus for the deposition of calcium.[16]

DERMOID

Dermoid cysts (when skin adnexa are found in the cyst wall) are cystic malformations with squamous epithelial lining (Fig. 11). Of all cysts in the head and neck area, dermoid cysts constitute 1.6 to 6.9%. Their aspirates contain additional elements as the walls of the cysts have hair follicles and sebaceous and sweat glands. When the dermoid cyst ruptures, it might induce an inflammatory and multinucleated giant cell response as these cysts are filled with grumous keratinaceous material and can be demonstrated on the smears. Inflamed cysts can also reveal focal reactive atypia of the squamous epithelium. The smears show the presence of benign-appearing squamous cells, anucleated squamous cells, and amorphous debris and also show sheets of large, benign-appearing anucleated and nucleated squamous cells, when secondary inflammation is present. Inflammatory infiltrate with large numbers of neutrophils are seen, but the majority of cells show no evidence of atypia. The cytologic material of dermoid and epidermoid cysts seems to be similar.[17-19]

EPIDERMOID

Epidermoid means "like epidermis," or "pertaining to the epidermis." It is a tumor composed of cells resembling

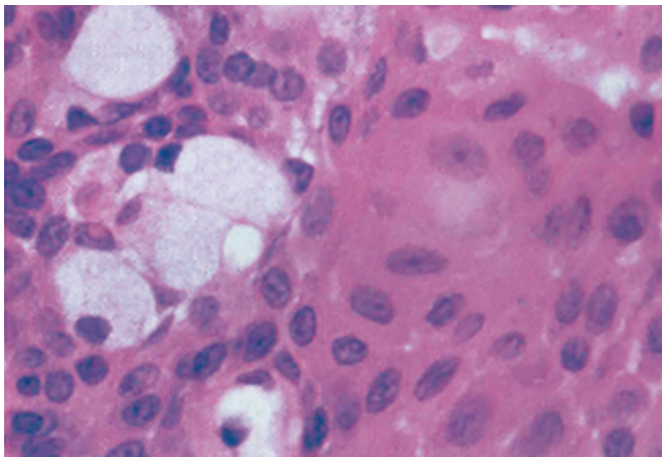

Fig. 12: Epidermoid (*Courtesy*: Rajendran R, Sivapathasundharam B. Shafer's text book of oral pathology. 5th ed. New Delhi: Elsevier; 2006)

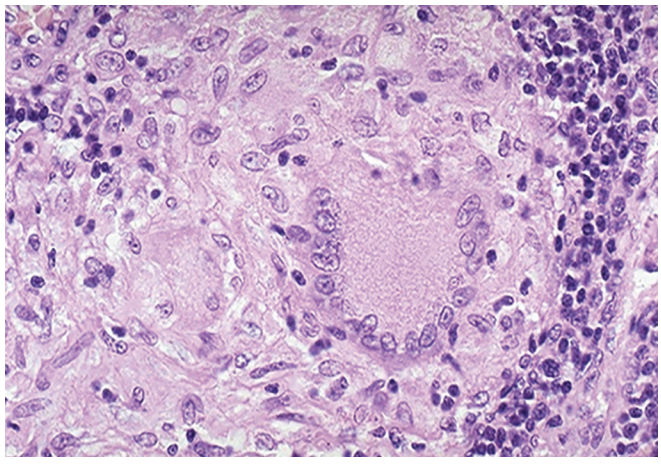

Fig. 13: Epithelioid (*Courtesy*: Rajendran R, Sivapathasundharam B. Shafer's text book of oral pathology. 5th ed. New Delhi: Elsevier; 2006)

those of, or derived from, the epidermis (Fig. 12). The epidermoid cells are characterized by squamoid features often demonstrating a polygonal shape, intercellular bridges, and rarely keratinization. They are observed mainly in mucoepidermoid carcinoma. Rare atypical cells with minor degrees of nuclear enlargement and nuclear membrane irregularities are seen as in inflamed epidermoid cysts.[20]

EPITHELIOID

Epithelioid cells are modified macrophages and are usually surrounded by a rim of lymphocytes (Fig. 13). These epithelioid cells are derived from blood monocytes. Nests of epithelioid cells with multinucleated giant cells are one of the chief microscopic features of the fibrous granulomatous nodules. Foreign body giant cells (Langhan cells) are formed by the fusion of epithelioid cells. They appear square shaped with visible nuclei and they tend to lump together. They are observed mainly in chronic granulomatous lesions, sarcoidosis, mesothelioma cancers, inverted ductal papillomas, and granulomas.[20]

KELOID

A keloid also keloidal scar) is the formation of a type of scar that, depending on its maturity, is composed mainly of either type III (early) or type I (late) collagen (Fig. 14). Keloids are firm, rubbery lesions or shiny, fibrous nodules, and can vary from pink to the color of the patient's flesh or red to dark brown. A keloid scar is benign and not contagious, but sometimes accompanied by severe itchiness, pain, and changes in texture. It is due to an overgrowth of granulation tissue (collagen type III) at the site of a healed skin injury that is then slowly replaced by collagen type I. Histologically, keloids are fibrotic tumors characterized by a collection of atypical fibroblasts with excessive deposition of extracellular matrix components, especially

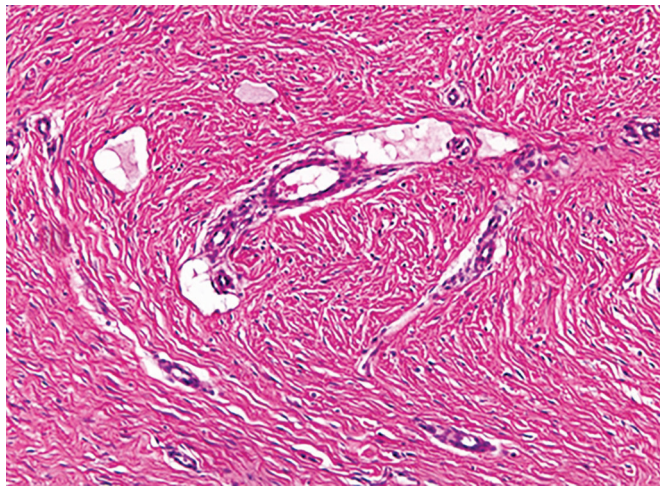

Fig. 14: Keloid (*Courtesy*: www.microscopyu.com/staticgallery/pathology)

collagen, fibronectin, elastin, and proteoglycans. The mean of the epithelial thickness of scar and keloid is the same as that of oral submucous fibrosis (OSF) in stage II (0.16u). Though the density of collagen fibers measured as a whole was more than that of OSF, there was no change in the normal ratios of types I and III varieties in scar/keloid tissue. The epithelial thickness in keloid is less than that of normal mucosa.[21]

Pathogenesis of Keloid

Myofibroblasts play an important role in the pathogenesis of keloid. The CD4 (+): CD8 (+) ratio is significantly higher in keloid tissue, suggesting that an imbalance in these inflammatory cell subpopulations along with mast cells may contribute to keloid formation. Recent studies indicate that TGF-beta (transforming growth factor beta) and PDGF (platelet-derived growth factor) play an integral role in the formation of keloids. Keloids are seen usually at the site of an injury or site of a piercing, or as a

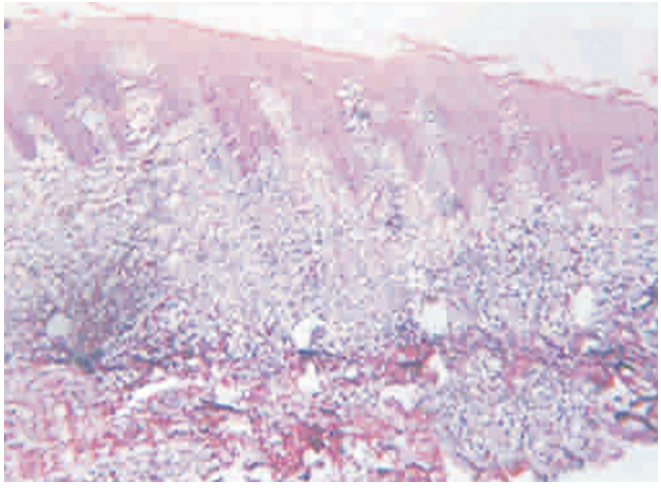

Fig. 15: Lichenoid

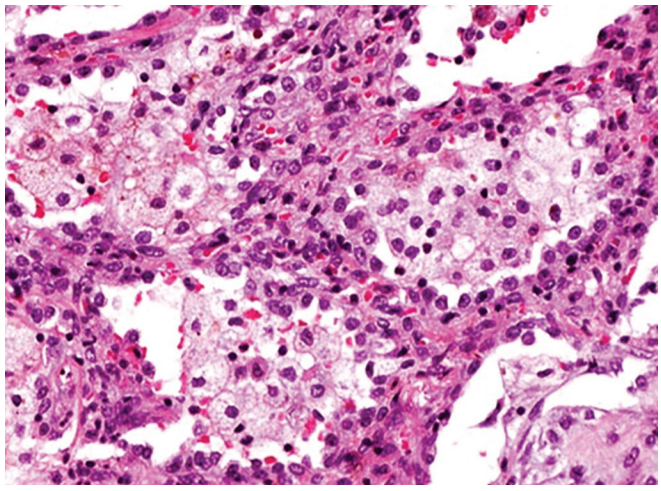

Fig. 16: Lipoid (*Courtesy*: Balan U, Gonsalves N, Jose M. Oral Maxillofac Pathol J 2012 Jul-Dec;3(2):233-237)

result of severe acne or chickenpox scarring, infection at a wound site, repeated trauma to an area, and excessive skin tension during wound closure or a foreign body in a wound.[21-23]

LICHENOID

In lichenoid reaction, thickness of the epithelium is more and there exists a positive correlation between epithelial thickness and thickness of the subepithelial inflammatory cell infiltrate. Lichen planus and lichenoid reaction differ in the amount of inflammatory infiltrate, and inflammatory infiltrate is more heterogenous and diffuse (Fig. 15).[24,25]

LIPOID

Lipoid means resembling lipid and observed in lipoid pneumonia (Fig. 16). In exogenous lipoid pneumonia, large droplets of lipoid material are characteristically seen in alveolar and interstitial macrophages. Fibrosis and a granulomatous response typically occur. In endogenous lipoid pneumonia, finely vacuolated alveolar macrophages fill alveolar spaces when clearance is obstructed as around tumors.[26]

LYMPHOID

Oral lymphoid tissue (Fig. 17) has a close relationship with the overlying mucosal epithelium. This epithelium demonstrates invaginations into the tonsillar tissue resulting in blind pouches or tonsillar crypts that may fill up with keratin debris. The tonsillar crypt may become obstructed or pinched off from the surface, producing a keratin-filled cyst within the lymphoid tissue just below the mucosal surface. It is commonly observed in branchial cleft cyst (cervical lymphoepithelial cyst) and oral lymphoepithelial cyst.[27]

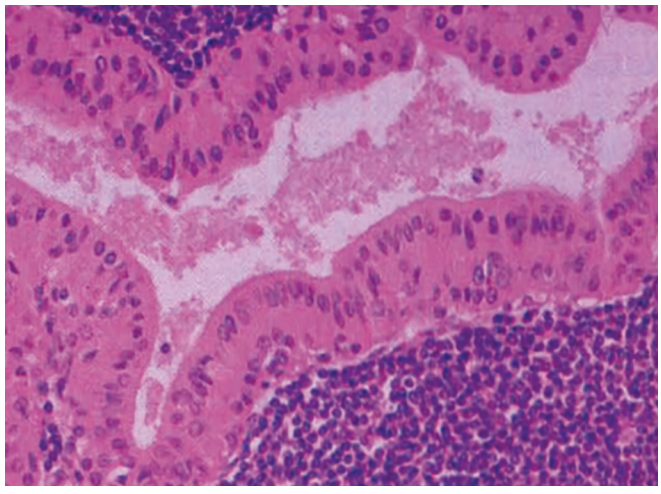

Fig. 17: Lymphoid (*Courtesy*: Neville, BW.; Damm, DD.; Allen, CM.; Bonquot, JE. Oral and maxillofacial pathology. 2nd ed. Philadelphia (PA): Saunders; 2002)

Lymphoid Hyperplasia

When lymphoid hyperplasia affects the lymph nodes, usually the site that the lymph node drains can be identified as a source of active or recent infection. In the head and neck region, the anterior cervical chain of lymph nodes is most commonly involved, although any lymph node in the area may be affected. It may affect the lymph nodes, the lymphoid tissue of Waldeyer's ring, or the aggregates of lymphoid tissue that are normally scattered throughout the oral cavity, particularly in the oropharynx, lateral tongue, soft palate, and the floor of the mouth.[27]

Lymphoid Stroma in Warthin Tumor/Papillary Cystadenoma Lymphomatosum

The tumor is composed of a mixture of ductal epithelium and a lymphoid stroma. The epithelium is supported

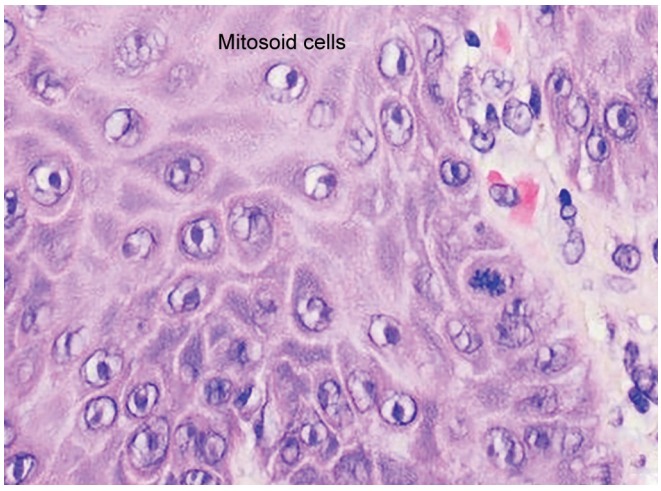

Fig. 18: Mitosoid (*Courtesy*: Sequeira FF, Gandhi S, Kini U, Bhat I. Indian J Dermatol Venereol Leprol 2012 Mar-Apr;78(2):207-216)

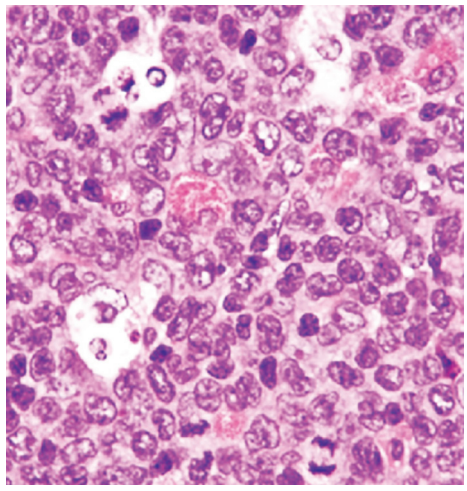

Fig. 20: Myeloid (*Courtesy*: Neville, BW.; Damm, DD.; Allen, CM.; Bonquot, JE. Oral and maxillofacial pathology. 2nd ed. Philadelphia (PA): Saunders; 2002)

by a lymphoid stroma that frequently shows germinal center formation. The epithelium has uniform rows of cells surrounding cystic spaces and are oncocytic in nature.[27]

MITOSOID

Mitosoid cells (Fig. 18) are in fact degenerated nuclei without mitotic ability. They are keratinocytes with hyperchromatic nuclei of irregular shape that simulate mitosis. The cells take this appearance because of the viral inclusion bodies. They are mainly seen in focal epithelial hyperplasia (Heck's disease) and papilloma.[28,29]

MUCINOID

Mucinoid means "resembling mucin." Mucin is present in most glands that secrete mucus and also in the ground substance of connective tissue (Fig. 19). It is the lubricant protecting body surfaces from friction or erosion. A mucopolysaccharide is the chief component in mucus. Microscopically when a ranula occurs as a result of the mucus retention phenomenon, the mucus retentions appear cystic as they are surrounded by the ductal epithelium. The lumen of the cyst-like cavity may exhibit the retained mucinoid material, sometimes with the calcified material that caused the obstruction, and may also show histiocytes, neutrophils, and lymphocytes.[30-33]

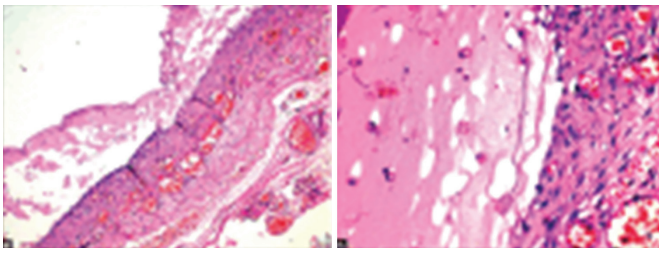

Fig. 19: Mucinoid (*Courtesy*: Regezi JA, Sciubba JJ. Oral pathology, clinical pathologic correlations. 3rd ed. Philadelphia (PA): WB Saunders; 1999. p. 183-185)

MYELOID

Myeloid means "pertaining to," "derived from," or "manifesting" certain features of the bone marrow. It has the appearance of myelocytes, but not derived from bone marrow. Myeloid leukemias can produce malignant cells that usually show features of granulocytes or monocytes and less frequently erythrocytes or megakaryocytes (Fig. 20). To identify and classify the myeloid leukemias, immunohistochemical confirmation of certain characteristic enzymes (such as myeloperoxidase and lysozyme) is necessary. The following myeloid features are observed in myeloid: Erythroid ratio, myeloid leukemia, myeloid metaplasia, myeloid sarcoma, myeloid epulis, osteoclastoma, giant cell epulis, and peripheral giant cell granuloma.[34]

MYOID

Myoid cells (Fig. 21) are oval to spindle shaped with a concentric perivascular growth and mainly noticed in angiomyolipoma and myopericytoma. These are flattened smooth muscle–like cells of mesodermal origin that lie just outside the basal lamina of the seminiferous tubules. These cells are characteristically reactive for smooth muscle. Vimentin and desmin are focally positive, in the myopericytoma, which helps to distinguish it from other perivascular myoid neoplasms.[35,36]

MYXOID

Myxoid means "mucin-like," "loose" pale-to-lightly basophilic stroma, as stained by hematoxylin and eosin (Fig. 22).

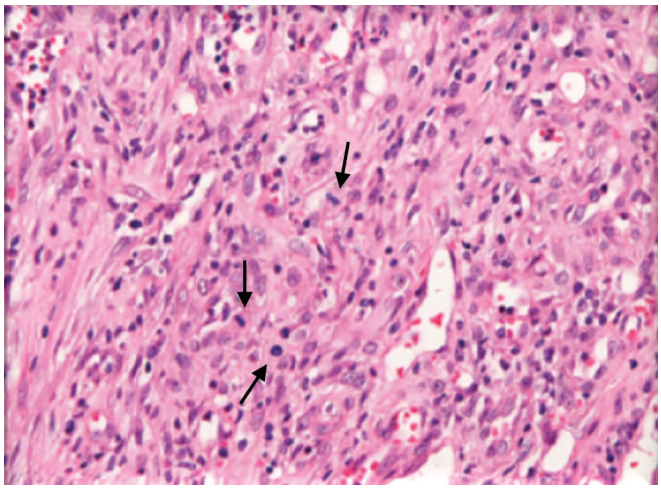

Fig. 21: Myoid (*Courtesy*: Terada T. Rare tumors 2012 Jan 2;4(1):e9)

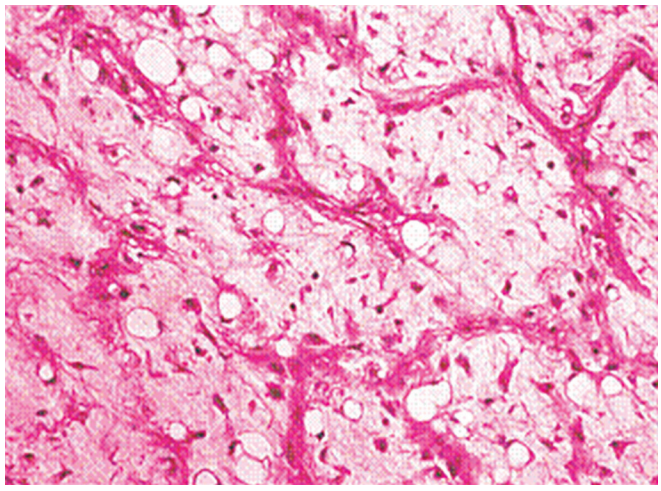

Fig. 22: Myxoid (*Courtesy*: Vipin B, Jagmohan S. Contemp Clin Dent 2012 Sep;3 Suppl 2:S214-S218)

Myxoid stroma occurs in nodular fasciitis, intramuscular myxoma, ganglion cyst, chordoma, neurofibroma, carcinomas, spindle cell lipoma, and lipoblastoma and in myxoid variants of sarcomas, which generally have a better prognosis. Fibroblasts and rare chronic inflammatory cells are seen in myxoid stroma. In odontogenic myxoma, loosely arranged stellate or spindle-shaped cells interspersed in myxoid matrix are seen. Myxoid degeneration is seen in oral focal mucinosis of palatal mucosa, an oral counterpart of cutaneous focal mucinosis, caused due to overproduction of hyaluronic acid by a fibroblast, at the expense of collagen production resulting in focal myxoid degeneration of the connective tissue, primarily affecting the mucosa overlying the bone.[37]

NEVOID

Nevoid cells are mainly observed in basal cell nevus syndrome (Fig. 23). These are the nevus cells that are derived from melanocytes. Nevi on skin are common; nevi on oral mucosa are uncommon. Nevi of oral mucosa are thought to be markers of development of malignant melanoma.[38]

ORYZOID (FIG. 24)

Also called rice bodies and melon seed bodies, oryzoid bodies are intraarticular loose bodies similar to grains of rice and white or brownish oval bodies of fibrous synovial tissue and most commonly diagnostic of rheumatoid arthritis. They represent particles containing collagen, fibrinogen, fibrin, blood cells, and amorphous material. They are seen significantly in tuberculous tenosynovitis, and their removal is usually accompanied by clinical improvement and a reduction in synovitis.[8]

OSTEOID

Osteoid means relating to or resembling bone. Histologically osteoid is the unmineralized, organic portion of the

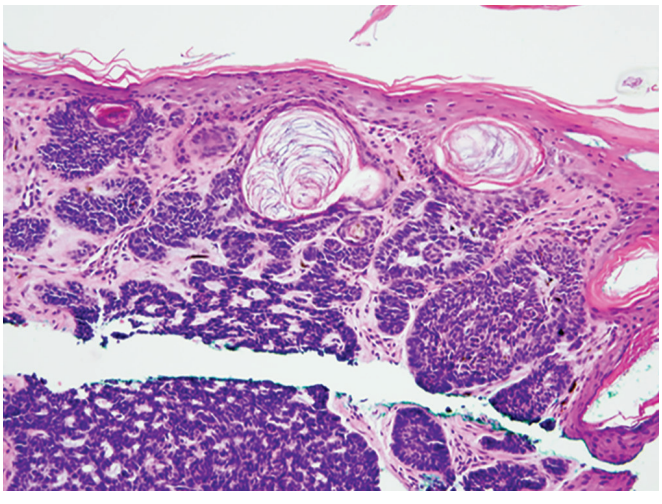

Fig. 23: Nevoid (*Courtesy*: Leger M, Quintana A, Tzu J, Yee H, Kamino H, Sanchez M. Dermatol Online J 2011 Oct;17(10):23)

Fig. 24: Oryzoid (*Courtesy*: www.physiologicpathologic bodies)

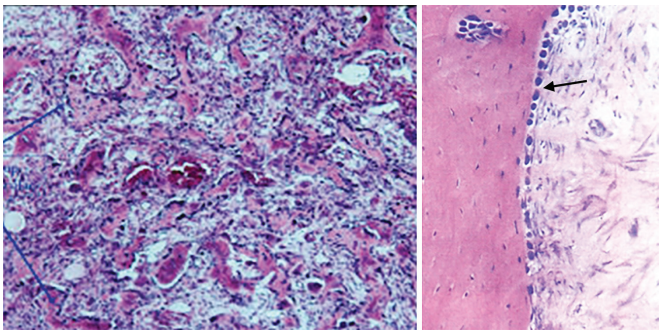

Fig. 25: Osteoid (*Courtesy*: Neville, BW.; Damm, DD.; Allen, CM.; Bonquot, JE. Oral and maxillofacial pathology. 2nd ed. Philadelphia (PA): Saunders; 2002. p. 569, 576)

bone matrix that forms prior to the maturation of bone tissue (Fig. 25). Fifty percent of bone volume and 40% of bone weight are contributed by osteoid. It is composed of fibers and ground substance and the predominant fiber-type is type I collagen. Osteoid is mainly observed in osteoid osteoma, aneurysmal bone cyst, and osteosarcoma. In osteoid osteoma, the tumor nidus contains a concentration of peripheral nerves. Lace-like areas of osteoid production or nontrabecular sheets and the presence of large (epithelioid) osteoblasts with increased mitotic activity are seen in aggressive osteoblastomas. Osteosarcoma, a malignancy of mesenchymal cells, has the ability to produce osteoid or immature bone. Spaces of varying size, filled with unclotted blood surrounded by cellular fibroblastic tissue containing multinucleated giant cells and trabeculae of osteoid and woven bone, are characteristically seen in aneurysmal bone cyst.[14,39]

OVOID

These are round or ovoid cells with eccentrically placed nuclei exhibiting chromatin clumping in a cartwheel or check board pattern (Fig. 26). They are observed mainly in monoclonal gammopathy of undetermined significance and composed of sheets of closely packed cells resembling plasma cells.[20]

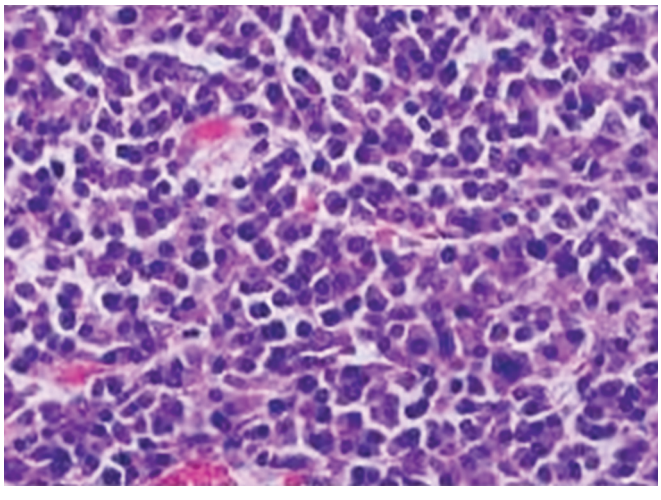

Fig. 26: Ovoid (*Courtesy*: Rajendran, R.; Sivapathasundharam, B. Shafer's text book of oral pathology. 5th ed. New Delhi: Elsevier; 2006)

PAGETOID

Pagetoid cells are seen within the stratum corneum of the stratified squamous epithelium, in Paget's disease (extramammary Paget disease) (Fig. 27).

Typical Pagetoid Cells

These are the typical pagetoid melanocytes and are round with abundant pale cytoplasm with uniform staining small and slightly large round/oval basophilic nuclei. They are commonly seen at the dermoepidermal junction or dermis, significantly observed in traditional junctional or compound melanocytic nevi, Spitz's nevus, or genital melanocytic nevus.

Atypical Pagetoid Cells

These are atypical pagetoid melanocytes and are large round and polygonal shaped with abundant pale staining cytoplasm with large round, pleomorphic, hyperchromatic,

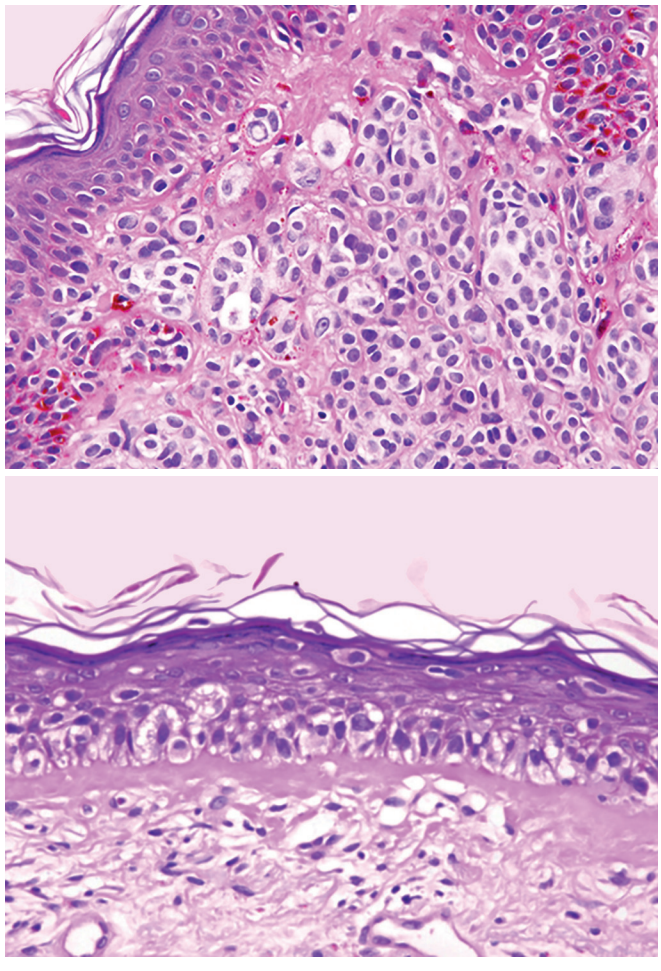

Fig. 27: Pagetoid (*Courtesy*: Hurwitz R. Dermatol Pract Concept 2013 Apr;3(2):9-11)

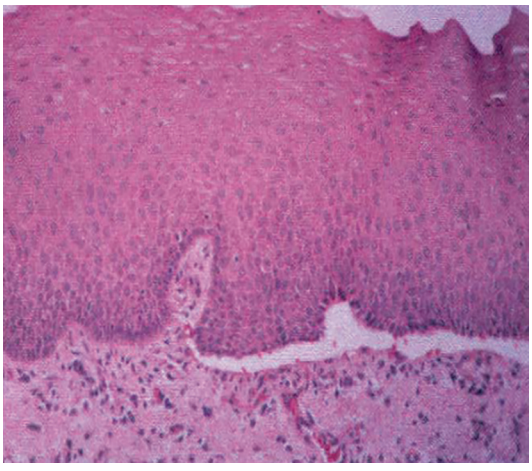

Fig. 28: Pemphigoid (*Courtesy*: Rajendran, R.; Sivapathasundharam, B. Shafer's text book of oral pathology. 5th ed. New Delhi: Elsevier; 2006)

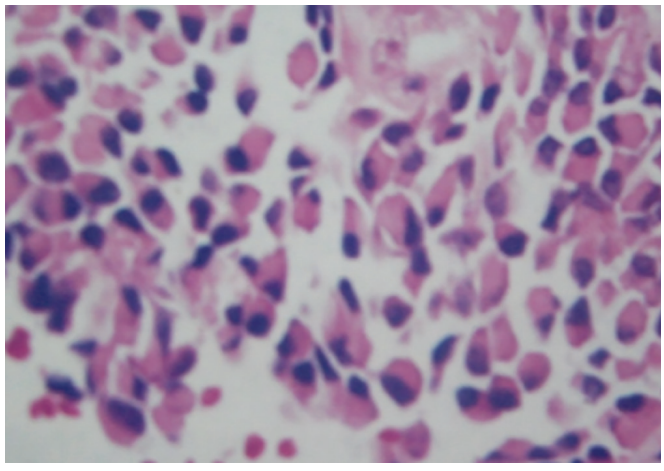

Fig. 29: Plasmacytoid (Hyaline Cells) (*Courtesy*: Reddy H, Reddy ES, Reddy EKK, Sudhir G. Plasmacytoid myoepithelioma of the palate: a rare case report. JRAD 2013;2(1):52-54)

heterochromatic basophilic nuclei. They are mainly seen in melanoma, some Spitz's nevi, squamous cell carcinoma, e.g., Paget's disease of breast and apocrine carcinoma.[40]

Pagetoid Pattern

In a pagetoid pattern, the scatter of notorious, atypical pagetoid melanocytes involving the basal, spinous, and granular layers of the epidermis are seen.[40,41]

PEMPHIGOID

Oral pemphigoid (pemphigoid of the mouth) is an autoimmune disease, an uncommon blistering condition that affects primarily the lining of the mouth and gums (Fig. 28). It also affects the surface layers of the eyes, inside the nose, and the genitalia. The skin is less commonly involved but can be affected by a similar blistering condition, known as bullous pemphigoid. Blisters in the mouth are usually painless until and unless they break down to ulcers (or erosions). Oral pemphigoid are mainly seen as red and shiny (desquamative gingivitis) on gums and palate and as red or ulcerated patches in the mouth.[42]

PLASMACYTOID (HYALINE CELLS)

Plasmacytoid cells (Fig. 29) are round to polyhedral cells with eccentric nuclei and eosinophilic cytoplasm. In immunohistochemistry, cells show positivity for vimentin, cytokeratin, S-100 protein, carcinoembryonic antigen, focal glial fibri, Mary acidic protein, neuron-specific enolase, and focal alpha smooth muscle actin. They are significantly seen in mixed tumors and myoepitheliomas of salivary glands and rarely in chondroid syringomas and pleomorphic adenoma. Plasmacytoid dendritic cells are innate immune cells that circulate in the blood and are found in peripheral lymphoid organs. They constitute < 0.4% of peripheral blood mononuclear cells (PBMC).[43,44]

PUSTULO OVOID

Pustulo ovoid bodies are large eosinophilic intracytoplasmic granules surrounded by a clear halo, observed in the cells of granular cell tumor of the tongue (40% of cases) and anywhere on the skin (60% of cases) and benign neural tumors (Fig. 30). These cells are formed by the gradual accumulation of granules in the interior of the lysosomes, which have lost mitochondria and the endoplasmic reticulum because of their maturity. Periodic acid–Schiff and CD68 are the stains and markers used. They are an easily recognizable component of benign neural tumours.[45-47]

SARCOMATOID

Sarcomatoid cells are spindle-shaped cells with plump elongated nuclei and generally overlap one another (Fig. 31). These cells do not bundle themselves in a uniform way like epithelioid cells and hence have the ability to spread faster than other cell types and are aggressive in

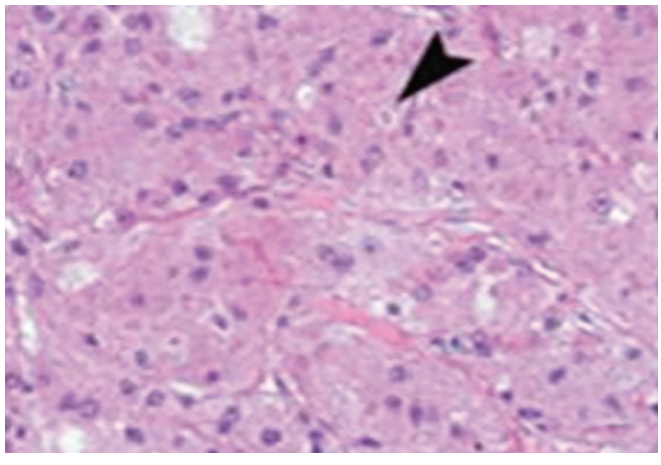

Fig. 30: Pustulo Ovoid (*Courtesy*: Rajendran, R.; Sivapathasundharam, B. Shafer's text book of oral pathology. 5th ed. New Delhi: Elsevier; 2006)

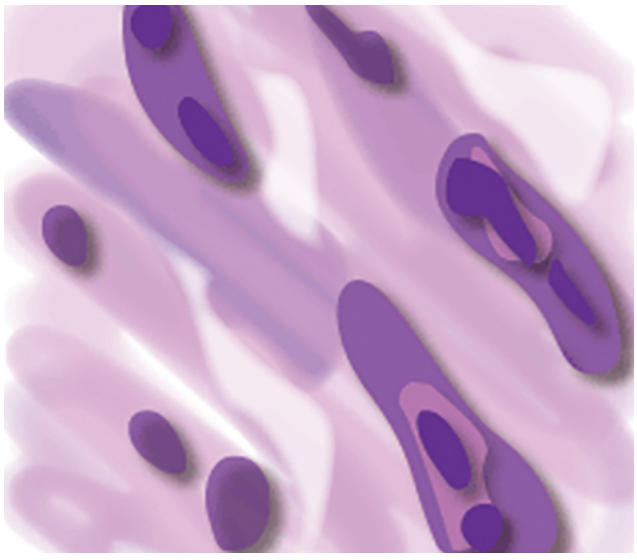

Fig. 31: Sarcomatoid *(Courtesy*: www.mesotheliomaguide.com/mesothelioma/types/sarcomatoid/)

nature. Sarcomatoid cells are mainly observed in 10 to 20% of all mesothelioma tumors and in 4% of peritoneal mesothelioma diagnosis and are also found in bladder, kidney, lung, and liver cancers.[48]

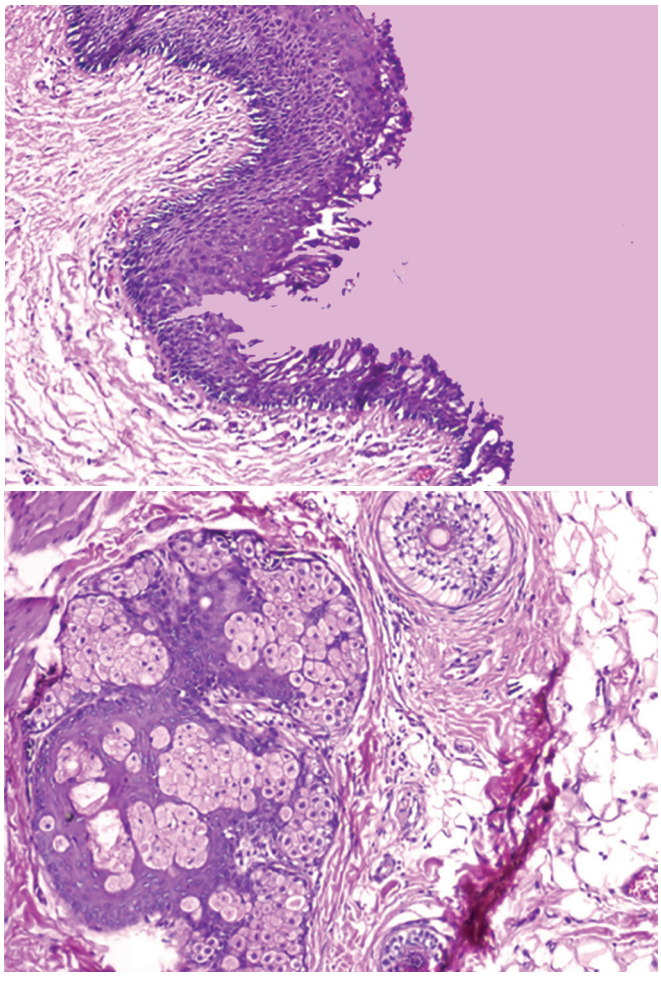

Fig. 32: Teratoid (*Courtesy*: Palaskar SJ, Garde J, Bartake A, Narang B. J Oral Maxillofac Pathol 2014 Sep-Oct;18(3):469-471)

TERATOID

The term "teratoid cyst" represents a cystic form of teratoma that contains a variety of germ-layer derivatives (Fig. 32). They are mainly:

- Skin appendages. including hair follicles, sebaceous glands, and sweat glands
- Connective tissue elements, such as muscle, blood vessels, and bone
- Endodermal structures such as gastrointestinal lining.

Teratoid carcinosarcoma (teratocarcinoma) contains a well-defined nest of benign-looking squamous epithelium with clear cytoplasm and primitive neuroepithelium with numerous rosettes and pigmentation.[49,50]

CONCLUSION

A thorough knowledge of all the terms ending with -oids serves as a ready reckoner and an easy aid for the diagnosis.

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