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Classifications of non-odontogenic Cystic lesion of the jaw (clinical and radiographical Review)

A Project Submitted to

The College of Dentistry, University of Baghdad, Department of Oral Diagnosis in Partial Fulfillment for the Bachelor of Dental Surgery

By

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Certification of the Supervisor

I certify that this project entitled "Classifications of non-odontogenic Cystic lesion of the jaw (clinical and radiographical Review)"

was prepared by the fifth-year student Sahar Fadhil Salman under my supervision

at the College of Dentistry/University of Baghdad in partial fulfilment of the graduation

requirements for the Bachelor Degree in Dentistry.

Dedication

This work is dedicated to my constant source of love, motivation, inspiration and support, my beloved family. To all my faithful friends who stood by me and believed in me.

To all my seniors who guided me and encouraged me in the past five years.

To all of those who made it their purpose in life to teach me and my peers the knowledge that was passed down onto them, so we can achieve the best of our potential.

Acknowledgment

With deep humility, I am obliged to supplicate to Allah, the Almighty, to accept my praise for granting me the will and power with which this research was accomplished and I hope that his blessings upon me will continue throughout life.

Words fail to express my deepest thanks and sincere gratitude to my supervisor who is B.D.S, Dip. In oral and maxillofacial surgery M.Sc. In oral and maxillofacial radiology Dr. Zainab al-Bahrani, the lecturer of oral and maxillofacial radiology, without her enlightening guidance and immense support this research would have never been the same; her advices about elaboration of the study's main aspects and choosing the most appropriate forms of expression were of enormous help all along.

Great applause from the deep of my heart to my family for their everlasting devotion, tremendous understanding, patience and constant assistance.

I would like to express my gratitude to all those who devoted some of their valuable time to motivate me and help me keep going, and all those who contributed to incrementing the scientific material of this study.

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CHAPTER ONE

Introduction

A cyst is a pathologic cavity or lumen lined by epithelium and filled with fluid or semifluid content surrounded by capsule and may either locate in soft tissue or within the jaw bone, originating from odontogenic (tooth forming) or non-odontogenic (not tooth forming) tissues. Jaw bones show more predilections for odontogenic cysts than non-odontogenic cysts.

Both odontogenic and non-odontogenic cysts produce radiolucent defects causing destruction of osseous structure. (Philip et al, 2004)

Non-odontogenic cysts are usually discovered during a routine examination. Cysts within the oral cavity vary in their clinical appearance, incidence, histology, behavior, management, the clinical features, etiology, and treatment modalities. (Aparna et al, 2014)

The cystic cavity usually contains fluid or semisolid material such as cellular debris, keratin, or mucus. The epithelial lining differs among cyst types and may be keratinized or nonkeratinized stratified squamous, pseudostratified, columnar, or cuboidal. The cyst wall is composed of connective tissue containing fibroblasts and blood vessels.

Cysts often exhibit varying degrees of inflammation that can alter their basic morphology, sometimes obscuring their identifying features. Intense inflammation can destroy some or all of the epithelial lining.

In rare instances the entire lining of a cyst may be destroyed by inflammation, allowing it to resolve completely without treatment. Cysts are common lesions and are clinically important, because they are often destructive.

They produce significant signs and symptoms, particularly when they become large or infected.

Most cysts of the oral region are true cysts because they possess an epithelial lining. These true cysts can be divided into those of odontogenic and developmental (nonodontogenic) origin. (Philip et al, 2004)

Aim of the study

The intent of this review is to make general dentists aware and knowledgeable of the non-odontogenic cysts they may encounter in everyday practice, so they can adequately manage or make an appropriate referral to improve treatment outcomes and reduce patient morbidity.

CHAPTER TWO

Review of literature

Etiology

The etiological factors which responsible for various type of the non-odontogenic cysts differ according to the cyst origin, Nasopalatine duct cysts are developmental in origin, arising from epithelial remnants of the nasopalatine duct. (Aparna et al, 2014) The development of this cyst can be attributed to several etiologic factors, such as infection, trauma, or mucous retention. Nasolabial cysts are developmental in origin. There are currently two hypotheses that exist for the pathogenesis of these cysts. The first states that the cyst is formed from retained epithelial cells within the mesenchyme after the fusion of the nasal processes. The second proposes that the cyst arises from epithelial remnants of the nasolacrimal duct in the area of the nasal process and maxillary prominence. Both theories remain to be determined. (Narain, 2015)

Palatal cysts of the neonate, also known as Epstein pearls or Bohn's nodules, result from keratin entrapment within the palate, resulting in cystic lesion formation. (Diaz and Mendez, 2021) Epstein pearls occur along the median palate raphe, and Bohn nodules are scattered over the hard palate, often at the junction of the soft palate.

Oral lymphoepithelial cysts have several theories regarding pathogenesis; however, the most accepted theory involves the association with oral lymphoid tissue (Waldyer ring) and the entrapment and/or accumulation of desquamated epithelial cells within a dilated crypt. (da Silva et al, 2020)

Epidermoid cysts are developmental in origin and are considered inclusion cysts that are derived from the ectoderm. These cysts can also be acquired by trauma resulting from the forced displacement of epithelial tissue into deeper tissue layers forming a cystic cavity. (Ueno et al, 2018)

Epidemiology

The epidemiologic distribution of the most common non-odontogenic cyst is regarded to the position of the cyst and gender ratio differences. Nasopalatine duct cysts are the most common non-odontogenic cyst found within the anterior maxilla. (Dedhia et al, 2013) There is a 3 to 1 predilection for males; however, there is no significant correlation between the size of these cysts and the patient's gender. The mean age of patients presenting with nasopalatine duct cysts is 47 years of age. (Uchoa-Vasconcelos et al, 2014)

Nasolabial cysts are relatively rare, accounting for only 0.7% of all maxillofacial cysts. These cysts are typically found in female adults between the fourth and fifth decade of life. The mean age of patients presenting with nasolabial cysts is 51 years of age. (Almutairi et al, 2020) Palatal cysts of the neonate are very common, occurring in 60% to 85% of newborn infants. No gender predilection has been identified. A study completed by Moosavi and Hosseini discovered that babies born at term had a higher incidence of palatal cysts compared to those born post-term. (Moosavi and Hosseini, 2006)

Oral lymphoepithelial cysts are relatively rare and have no gender predilection. These lesions are usually associated with Waldyer's ring, which includes the palatine and lingual tonsils and the pharyngeal adenoids. The incidence rate is 1.2% to 7%. (Bouatay et al, 2019) The mean age of patients presenting with oral lymphoepithelial cysts is 44 years of age. Epidermoid cysts are rare and have a predilection for males. The mean age of patients presenting with intraoral epidermoid cysts is 28 years of age. (Diaz and Mendez, 2021)

Classification of Non-Odontogenic Cysts

Many literatures utilized different classification systems of non-odontogenic cysts. The term fissural cyst is still often used for cysts derived from epithelium present during embryonic development, but it is now considered a misnomer. Until recently it was thought that some cysts of the jaws developed from epithelium that became entrapped along embryologic lines of closure (fissures). Current thought is that epithelial entrapment does not occur in these sites during embryogenesis. As a result, some of the previously held concepts of cyst formation have been modified, and terms such as "globulomaxillary cyst" and "median mandibular cyst" have been largely abandoned. The two developmental cysts that remain in this category are not of fissural derivation; they are (1) the nasopalatine duct cyst (incisive canal cyst) and (2) the nasolabial cyst, other literatures applied the term of developmental cysts instead of non-odontogenic cysts. Generally, the main classification of non-odontogenic cysts is as follows: (Philip et al, 2004)

1. **Nasopalatine Duct Cyst.**
2. **Nasolabial Cyst.**
3. **Oral Lymphoepithelial Cyst.**
4. **Thyroglossal Duct Cyst.**
5. **Dermoid Cyst.**
6. **Branchial Cleft Cyst**
7. **Globulomaxillary Cyst.**
8. **Palatal Cysts of the Newborn.**
9. **Median Palatal Cyst.**
10. **Follicular Cysts of the Skin.**
11. **Median Mandibular cyst.**

1. Nasopalatine Duct Cyst:

The nasopalatine duct cyst, also termed incisive canal cyst, arises from embryologic remnants of the nasopalatine duct.

These cysts develop in the midline of the anterior maxilla near the incisive foramen, which mostly intra-osseous lesions, a small percentage develop at the lower end of the incisive canal entirely within the soft tissue of the anterior palate and are termed cysts of the incisive papilla. (Hisatomi et al, 2001)

On rare occasion, the nasopalatine duct remains patent and persists into adult life as small unilateral or bilateral openings on the palatal mucosa adjacent to the incisive papilla. (Takagi et al, 1996)

RADIOGRAPHIC FEATURES

The nasopalatine duct cyst presents as a well-circumscribed oval or heart-shaped radiolucency located in the midline of the anterior maxilla between the roots of the central incisors.

In the edentulous maxilla the radiographic diagnosis may not be as obvious as in the dentate patient. Although some of these cysts are asymptomatic and discovered during routine radiographic examination, many are inflamed and cause pain, pressure, and swelling.

Cysts of the incisive papilla are entirely within the palatal soft tissues and are not evident radiographically. (Vasconcelos et al, 1999)

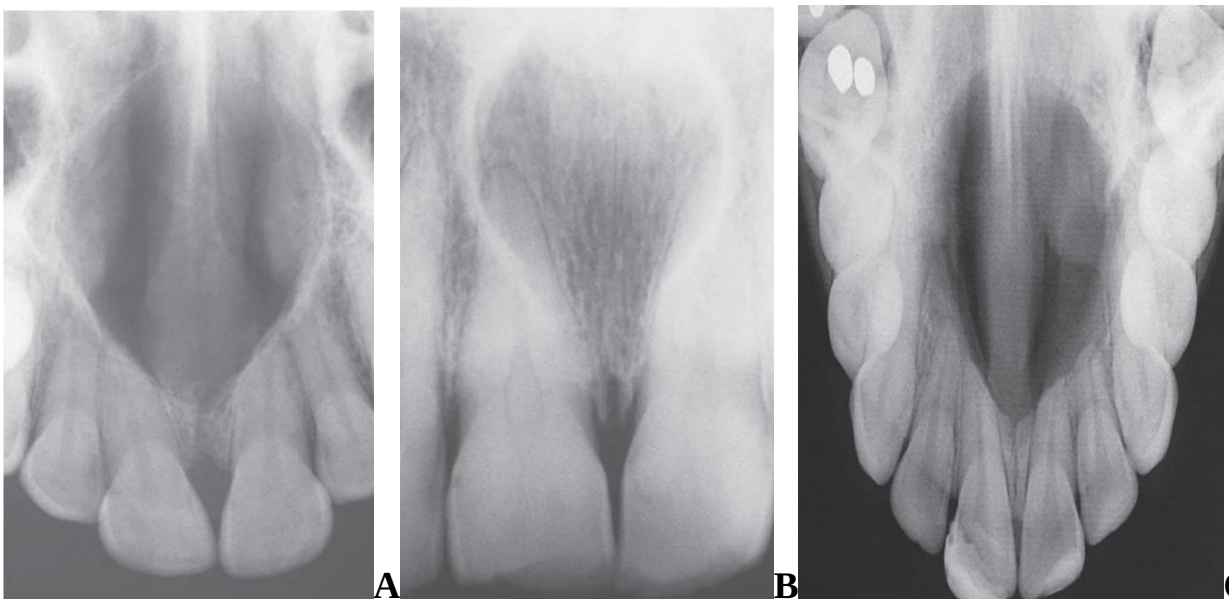

Fig. (1): A- Nasopalatine duct cyst. Large destructive cyst of the palate. B-Large destructive cyst of the palate. B-Nasopalatine duct cyst. Well-circumscribed radiolucency between and apical to the roots of the maxillary central incisors. (Neville et al, 2009) C-Maxillary occlusal radiography showing well-defined unilocular radiolucent image in maxillary anterior region. (Leandro et al,2017)

TREATMENT

Treatment of the nasopalatine duct cyst is by surgical enucleation, using a palatal approach. Recurrence of this cyst is rare. (Hisatomi et al, 2001)

2. Nasolabial Cyst:

Also known as the naso-alveolar cyst and the Klestadt cyst, this rare condition occurs entirely in the soft tissues of the anterior maxillary vestibule, below the ala of the nose and deep in the nasolabial crease.

Although other theories for the development of this rare cyst have been previously proposed, the most currently accepted thought points to its derivation from remnants of the inferior and anterior portions of the nasolacrimal duct. (Kuriloff, 1987)

CLINICAL FEATURES

This cyst is a unilateral or occasionally bilateral painless soft tissue swelling those results in a flattening of the nasolabial crease on the skin below the ala of the nose. If the upper lip is appropriately retracted, this cyst also can be seen intraorally as a swelling located at the depth of the maxillary vestibule. Most of these cysts occur in the 4th and 5th decades of life, with a female predilection of approximately 3:1. (Choi et al, 2002)

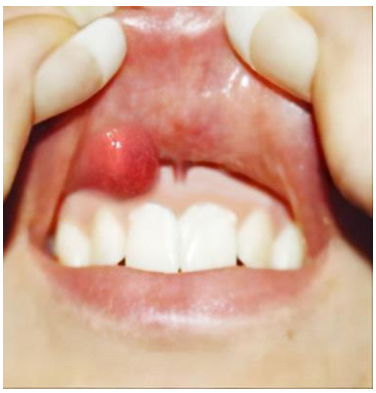

Fig. (2): Intraoral picture showing distension of superior labial vestibule on the right side. (Acar et al, 2014)

RADIOGRAPHIC FEATURES

It's hard to appear radiographically unless contrast medium is injected into the cystic lumen to facilitate visualization. Focal pressure-induced bone resorption

(saucerization) of the anterior maxilla can be occasionally demonstrated on radiographs and is most readily seen in the edentulous patient. (Vasconcelos, 1999)

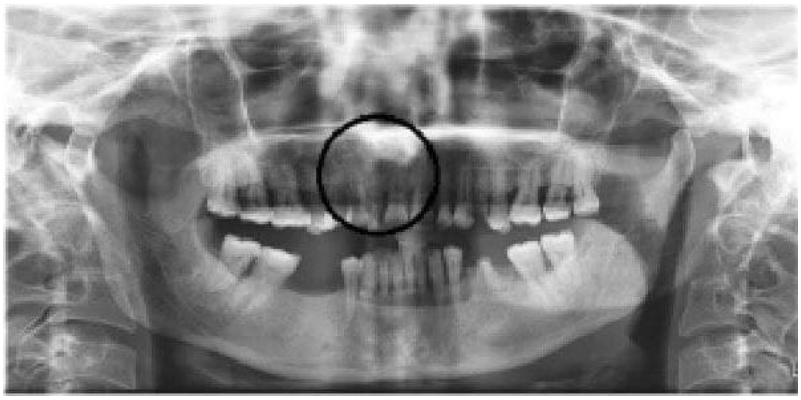

Fig. (3): OPG showing lack of any significant radiographic anomaly around the carious maxillary lateral incisor. (Prabhu et al, 2016)

TREATMENT

A nasolabial cyst is treated by surgical enucleation with particular care being exercised to prevent the lesion's perforation and collapse. Recurrence is rare.

3. Oral Lymphoepithelial Cyst:

The oral lymphoepithelial cyst, also termed benign lymphoepithelial cyst, most commonly develops where extra tonsillar lymphoid tissue (oral tonsil) is found.

The most common sites are the anterior floor of the mouth and the posterior lateral border of the tongue. (Buchner and Hansen, 1980)

It appears to develop from epithelial invaginations (crypts) that become detached from the surface mucosa and entrapped within the lymphoid tissue. An alternate

theory suggests that the epithelium in these cysts could be derived from minor salivary ducts that traverse oral lymphoid tissue. (Giunta and Cataldo, 1973)

CLINICAL FEATURES

The oral lymphoepithelial cyst is most commonly found on the anterior floor of the mouth and on the posterior lateral borders of the tongue. However, it can also occur on the ventral surface of the tongue, soft palate, tonsillar pillars, and oropharynx.

It is an asymptomatic, yellowish or tan, superficial submucosal mass that usually measures less than 1 cm in diameter. Careful clinical examination of the oral mucosa overlying these cysts or gross examination of the excised lesional tissue will occasionally reveal a small pore or crypt that communicates with the cyst's lumen. (Chaudhry et al, 1984)

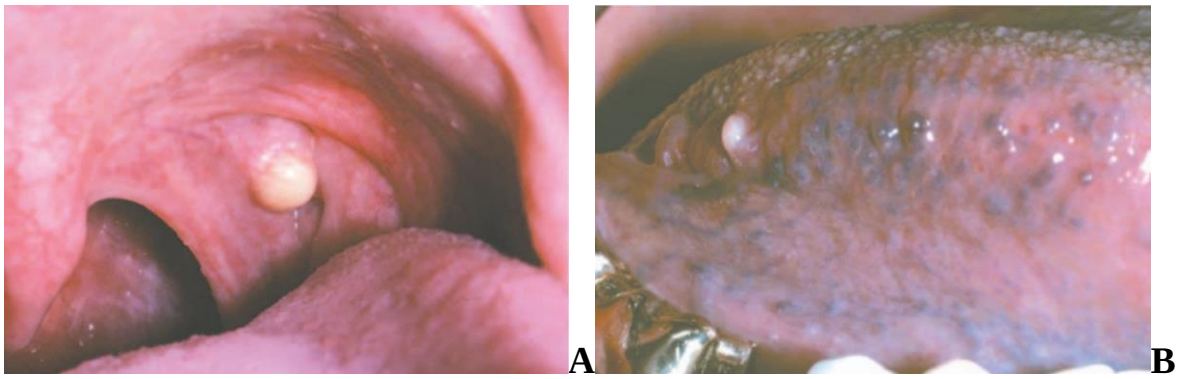

Fig. (4): A- Oral lymphoepithelial cyst. Small yellow-white nodule of the tonsillar fossa. B-Oral lymphoepithelial cyst. Small white nodule of the posterior lateral border of the tongue. (Neville et al, 2009)

RADIOGRAPHIC FEATURES

well-circumscribed cystic spaces may demonstrate thin rim enhancement on postcontrast MRI.

Ultrasound demonstrates these 'cystic' lesions to actually have multiple small septations, and commonly also small mural nodules (40%).

A case with simple MRI was done which showed “A well-defined, thin, smooth-walled cystic lesion within the superficial part of the left parotid gland.

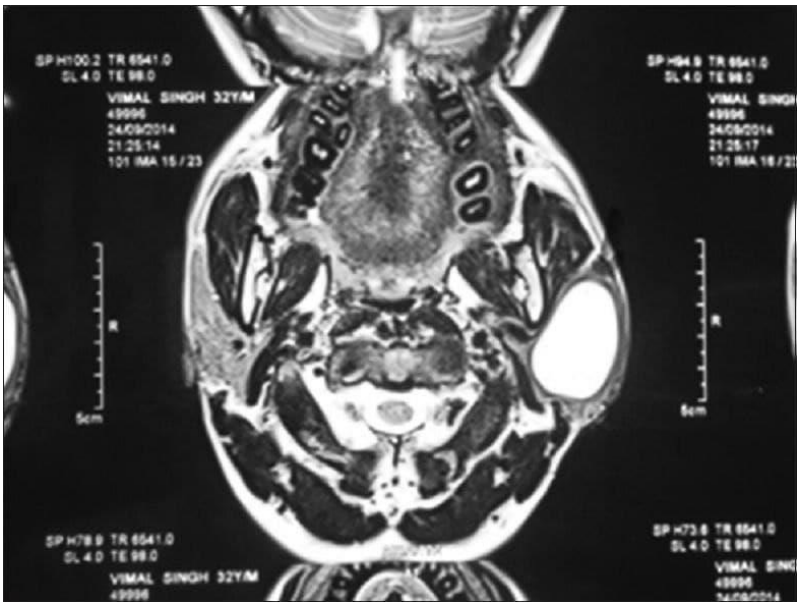

Fig. (5): MRI view showing a benign cystic lesion of the left parotid gland with a differential diagnosis of branchial cleft cyst. (Joshi et al, 2018)

TREATMENT

Treatment of these cysts is by conservative surgical excision. The lesion seldom recurs. (Chaudhry et al, 1984)

4. Thyroglossal Duct Cyst:

It's located above the thyroid gland. A small percentage of these cysts occur within the tongue, where they can cause dysphagia.

If infected or inflamed, a draining fistula that communicates between the cyst and the overlying skin surface will occasionally develop. (Plaza et al, 2006)

RADIOGRAPHIC FEATURES

At CT, thyroglossal duct cysts are thin-walled, smooth, well-defined homogeneously fluid-density lesions with an anterior midline or paramedian location. The generally accepted rule is that they should be within 2 cm of the midline. They may demonstrate slight rim (capsular) enhancement. The sternocleidomastoid muscle is typically displaced posteriorly or postero-laterally. In some cases, thyroglossal duct cysts may be embedded in the infrahyoid (strap) muscles. (Schader et al, 2005)

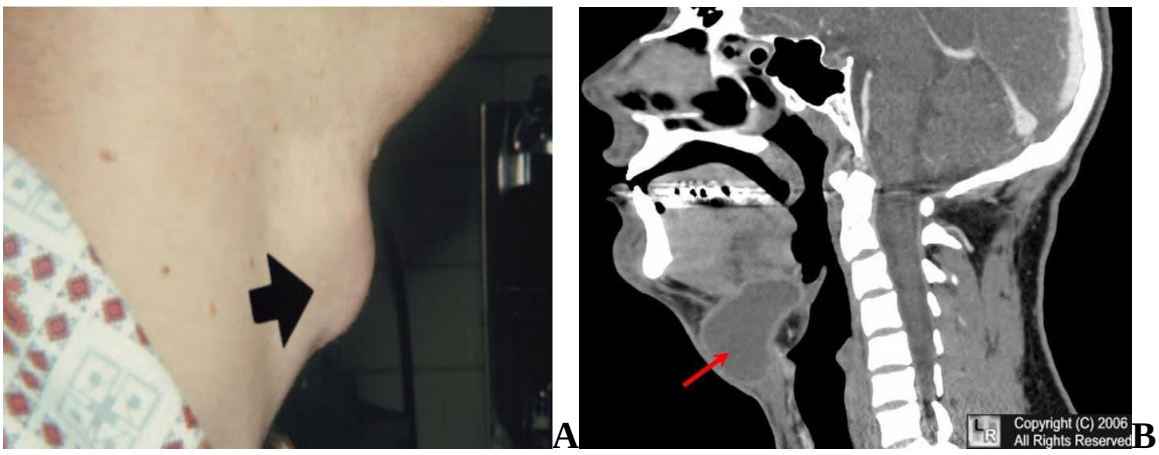

Fig. (6): A-Thyroglossal duct cyst. Swelling (arrow) of the anterior midline of the neck. (Neville et al, 2009) B-Reconstructed CT scan of the neck demonstrates a

midline cystic lesion (red arrow) with a slightly enhancing wall. The contents measured fluid density. (Ted and Adi, 2015)

TREATMENT

Requires complete surgical excision, because recurrence is a distinct possibility. In an effort to minimize recurrence of cysts involving the hyoid area, it is recommended that the central portion of the hyoid bone and its associated remnants of thyroglossal tract be removed. (Dedivitis et al, 2002)

5. Dermoid Cyst:

The dermoid cyst represents a simple form of cystic teratoma derived from germinal epithelium entrapped during embryonic development.

Most of these cysts occur in the head and neck region, primarily in the skin around the eyes and the anterior upper neck, extending superiorly into the floor of the mouth. (Crivelini et al, 2001)

CLINICAL FEATURES

The dermoid cyst is a lesion of young adults (teenagers).

No gender predilection is seen. Cysts of the anterior upper neck or floor of the mouth present as painless swellings exhibiting a doughy consistency on palpation.

Cysts that develop above the mylohyoid muscle present as a midline swelling in the sublingual area. In this location the cyst results in elevation of the tongue and can interfere with eating and speaking. (Edwards et al, 2003)

Cysts that develop below the mylohyoid muscle appear as a midline swelling in the submandibular and submental region. The size of these cysts is variable, but most are 2 cm or less in diameter. (Shigematsu et al, 2001)

RADIOGRAPHIC FEATURES

CT :Typically, dermoid cysts appear as well-defined low attenuating (fat density) lobulated masses. Calcification may be present in the wall. Enhancement is uncommon, and if present should at most be a thin peripheral rim.

Very rarely they demonstrate hyperdensity, thought to be due to a combination of saponification, microcalcification and blood products. This most often occurs when present in the posterior fossa, although the reason is uncertain.

Ruptured dermoid cysts are characteristically associated with fat-attenuation material in the subarachnoid spaces.

The imaging features of dermoid cysts can vary depending on their contents.

MRI: T1: Typically, hyperintense (due to cholesterol components) hyperintense droplets in the subarachnoid spaces may be visible if rupture has occurred.

T1 C+ (Gd): generally, do not enhance. Extensive pial enhancement may be present in chemical meningitis caused by ruptured cysts

T2: variable signal ranging from hypo- to hyperintense Among imaging modalities. MRI is the gold standard for diagnosing cystic mass. (Dawes and Knipe, 2022)

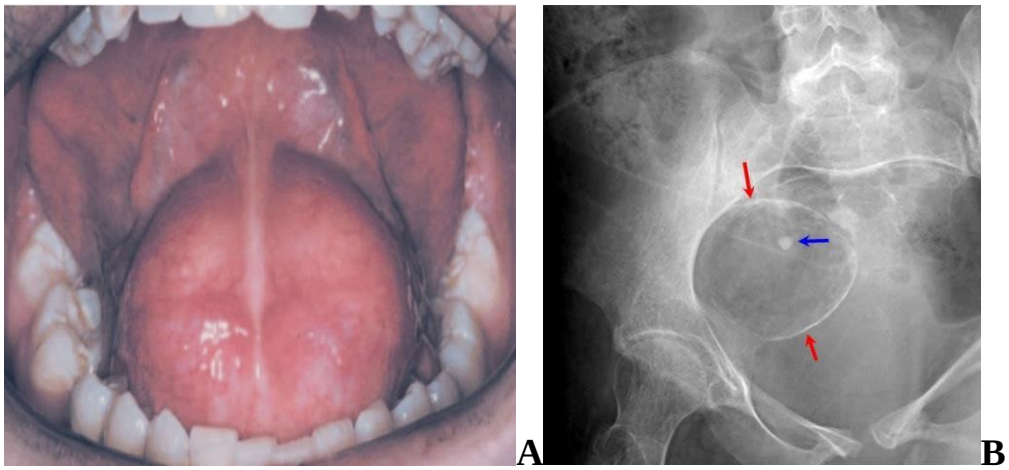

Fig. (7): A-Dermoid cyst. Fluctuant midline swelling in the floor of the mouth. (Budnick, 1981) B- close-up view of the right lower quadrant from a conventional radiograph of the abdomen and pelvis shows a cystic mass with a rim-like calcification (red arrows) containing fat density lower than that of the surrounding soft tissue. There is a calcification within the mass (blue arrow). (William, 2019)

TREATMENT

This cyst is best treated by surgical enucleation or excision. Recurrence is uncommon. (Edwards et al, 2003)

6. Branchial Cleft Cyst:

The branchial cleft cyst, commonly termed as cervical lymphoepithelial cyst or benign cystic lymph node, occurs on the lateral aspect of the neck, usually anterior to the sternocleidomastoid muscle. (Thompson and Heffner, 1998)

It is thought to be derived from epithelium entrapped within lymphoid tissues of the neck during embryologic development of the cervical sinuses or the second branchial clefts or pouches.

An alternate theory suggests that the epithelium in this cyst might be derived from salivary duct epithelium trapped within cervical lymph nodes during embryogenesis. (Goldenberg et al, 2006)

CLINICAL FEATURES

The cyst becomes apparent in late childhood or early adulthood as a painless swelling on the lateral aspect of the neck anterior to the sternomastoid muscle.

A draining fistula that communicates between the cyst and the overlying skin surface occasionally develops. (Kadhim et al, 2004)

RADIOGRAPHIC FEATURES

- First branchial cleft cyst

At CT: a it appears as a cystic mass either within, superficial to, or deep to the parotid gland. Cyst wall thickness and enhancement are variable and increase with recurrent infections.

- Second branchial cleft cyst

At US: a is seen as a sharply marginated, round to ovoid, centrally anechoic mass with a thin peripheral wall.

At CT: these cysts are typically well-circumScribed, homogeneously hypoattenuated masses surrounded by a uniformly thin wall.

At MR imaging better depicts the deep tissue extent of a second branchial cleft cyst, which allows accurate preoperative planning.

- Third branchial cleft cyst most commonly appears as a unilocular cystic mass centered in the posterior cervical space on CT and MR images. (Kelly et al, 1999)

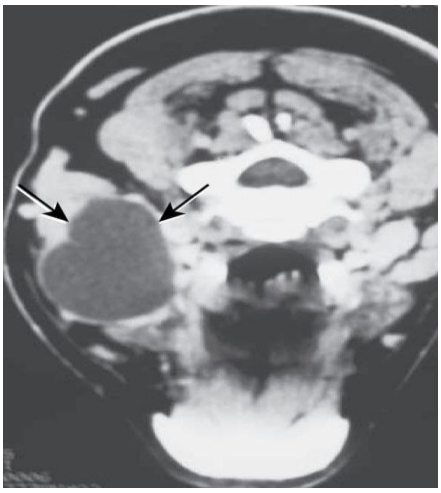

Fig. (8): **Branchial Cleft Cyst** (Cervical lymphoepithelial cyst). Imaging study of the same cyst depicted in, showing a well-circumscribed lesion of the lateral neck (arrows). (Neville et al, 2009)

TREATMENT

As with its intraoral counterpart, the cervical lymphoepithelial cyst is treated by conservative surgical excision; recurrence is rare. (Kadhim et al, 2004)

7. Globulomaxillary Cyst:

Globulomaxillary cyst was purported to be a fissural cyst that arose from epithelium entrapped during fusion of the globular portion of the medial nasal process with the maxillary process.

This concept has been questioned, however, because the globular portion of the medial nasal process is primarily united with the maxillary process and a fusion does not occur.

Therefore, epithelial entrapment should not occur during embryologic development of this area.

Virtually all cysts in the globulomaxillary region (between the lateral incisor and canine teeth) can be explained on an odontogenic basis. (Wysocki and Goldblatt, 1993)

RADIOGRAPHIC FEATURES

The globulomaxillary cyst is a cyst that appears between a maxillary lateral incisor and the adjacent canine, often causes the roots of adjacent teeth to diverge.

This cyst should not be confused with a nasopalatine cyst.

The developmental origin has been disputed. Today, most literature agree based on overwhelming evidence that the cyst is predominantly of tooth origin (odontogenic), demonstrating findings consistent with periapical cysts, odontogenic keratocysts or lateral periodontal cysts. (Haring et al, 2006)

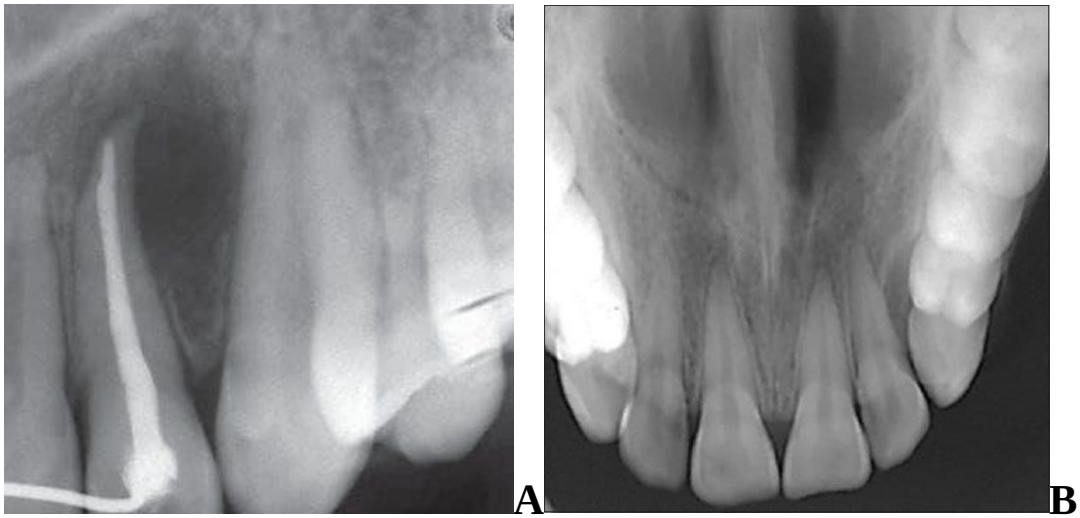

Fig. (9): An Occlusal radiograph showing "inverted pear-shaped radiolucency". (Haring et al, 2006) B- Occlusal radiograph showing expansion of labial cortical plate. (Reddy et al, 2017)

8. Palatal and gingival Cysts of the Newborn:(Epstein's pearls; Bohn's nodules)

Small developmental cysts are a common finding on the palate of newborn infants. Researchers have theorized that these "inclusion" cysts may arise in one of two ways. First, as the palatal shelves meet and fuse in the midline during embryonic life to form the secondary palate, small islands of epithelium may become entrapped below the surface along the median palatal raphe and form cysts. Second, these cysts may arise from epithelial remnants derived from the development of the minor salivary glands of the palate.

Epstein's pearls occur along the median palatal raphe and presumably arise from epithelium entrapped along the line of fusion.

Bohn’s nodules are scattered over the hard palate, often near the soft palate junction and are believed to be derived from the minor salivary glands. (Donley et al, 2000)

However, these two terms have been used almost interchangeably and also have often been used to describe gingival cysts of the newborn, similar appearing lesions of dental lamina origin.

Therefore, the term palatal cysts of the newborn may be preferable to help distinguish them from gingival cysts of the newborn.
In addition, because these cysts are most common near the midline at the junction of the hard and soft palates, it is usually difficult to ascertain clinically their origin. And it has no radiographic features because it's a soft tissue cyst (Liu and Huang, 2004)

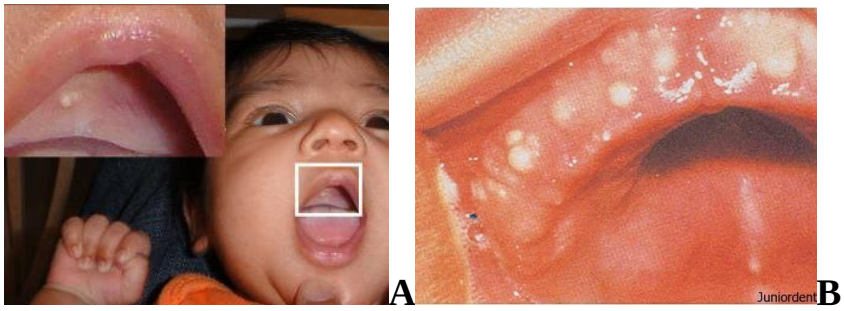

Fig. (10): A- Epstein pearls small keratin-filled cysts along the median palatal raphe. B- Bohn’s nodules scattered over the hard palate often near the soft palate junction. (Morrison, 2022)

CLINICAL FEATURES

Palatal cysts of the newborn are quite common and have been reported in as many as 65% to 85% of neonates.

The cysts are small, 1-3 mm, white or yellow- white papules that appear most often along the midline near the junction of the hard and soft palates.

Occasionally, they may occur in a more anterior location along the raphe or on the posterior palate lateral to the midline.

Frequently a cluster of 2-6 cysts are observed, although the lesions also can occur singly. (Flinck et al, 1994)

TREATMENT

Palatal cysts of the newborn are innocuous lesions, and no treatment is required. They are self-healing and rarely observable several weeks after birth. Presumably the epithelium degenerates, or the cysts rupture onto the mucosal surface and eliminate their keratin contents. (Liu and Huang, 2004)

9. Median Palatal Cyst:

The median palatal cyst is a rare fissural cyst that theoretically develops from epithelium entrapped along the embryonic line of fusion of the lateral palatal shelves of the maxilla. This cyst may be difficult to distinguish from a nasopalatine duct cyst. (Gordon et al, 1980)

In fact, mostly it may represent posteriorly positioned nasopalatine duct cysts. Because the nasopalatine ducts course posteriorly and superiorly as they extend from the incisive canal to the nasal cavity, a nasopalatine duct cyst that arises from posterior remnants of this duct near the nasal cavity might be mistaken for a median palatal cyst. On the other hand, if a true median palatal cyst were to develop toward the anterior portion of the hard palate, then it could easily be mistaken for a nasopalatine duct cyst. (Courage al ,1974)

CLINICAL FEATURES

The median palatal cyst presents as a firm or fluctuant swelling of the midline of the hard palate posterior to the palatine papilla. The lesion appears most frequently in young adults.

Often it is asymptomatic, but some patients complain of pain or expansion. The average size of this cyst is 2 × 2 cm, but sometimes it can become quite large. (Gingell et al, 1985)

RADIOGRAPHIC FEATURES

They appear as heart-shaped radiolucency because the cyst is notched by nasal septum during their development. One of the differential diagnoses should be radicular cyst and hence important to check vitality of teeth and periodontal condition considered as a necessary diagnostic criterion.

We did not encounter nasopalatine bundle during surgical removal, therefore distinguishing it from nasopalatine duct cyst. No carious tooth or periapical lesions were present and thus odontogenic etiology ruled out.

Occlusal radiographs demonstrate a well circumscribed radiolucency in the midline of the hard palate.

Occasional reported cases have been associated with divergence of the central incisors, although it may be difficult to rule out a nasopalatine duct cyst in these instances. (Donnelly et al, 1986)

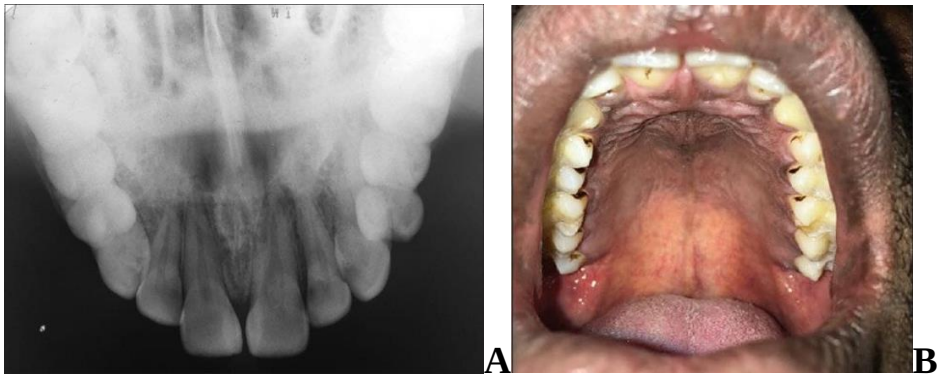

Fig. (11): A-Occlusal radiograph showing round/heart shape symmetrical radiolucency. B-Solitary oval swelling in the midline of hard palate. (Rangaswamy et al, 2018)

To differentiate the median palatal cyst from other cystic lesions of the maxilla, Gingell and associates suggested the following diagnostic criteria:

● Grossly appears symmetrical along the midline of the hard palate.

● Located posterior to the palatine papilla.

● Appears ovoid or circular radiographically.

● Not intimately associated with a nonvital tooth.

● Does not communicate with the incisive canal.

● Shows no microscopic evidence of large neurovascular bundles, hyaline cartilage, or minor salivary glands in the cyst wall.

It must be stressed that a true median palatal cyst should exhibit clinical enlargement of the palate.

A midline radiolucency without clinical evidence of expansion is probably a nasopalatine duct cyst. (Gordon et al, 1980)

TREATMENT

The median palatal cyst is treated by surgical removal. (Donnelly et al, 1986)

10. Follicular Cysts of the Skin:

Follicular cysts of the skin are common keratin-filled lesions that arise from one or more portions of the hair follicle. The most common type, which is derived from the follicular infundibulum, is known as an epidermoid or infundibular cyst.

These cysts often arise after localized inflammation of the hair follicle and probably represent a nonneoplastic proliferation of the infundibular epithelium resulting from the healing process. (López-Ríos et al, 1999)

The term sebaceous cyst sometimes is used mistakenly as a synonym for both the epidermoid cyst and another cyst of the scalp known as a pilar, tricho-lemmal, or isthmus-catagen cyst.

However, because both the epidermoid cyst and pilar cyst are derived from the hair follicle rather than the sebaceous gland, the term sebaceous cyst should be avoided.

Keratin-filled cysts of the skin may occasionally arise after traumatic implantation of epithelium, although such lesions may be difficult to distinguish from an infundibular cyst. Rarely, such epidermal inclusion (implantation) cysts also can develop in the mouth. These small inclusion cysts should be distinguished from oral epidermoid cysts that occur in the midline floor of mouth region and represent the minimal manifestation of the teratoma dermoid cyst-epidermoid cyst spectrum. (Maize et al, 1998)

CLINICAL FEATURES

Epidermoid (infundibular) cysts account for approximately 80% of follicular cysts of the skin and are most common in the acne prone areas of the head, neck, and back. They are unusual before puberty unless they are associated with Gardner syndrome.

Young adults are more likely to have cysts on the face, whereas older adults are more likely to have cysts on the back. Males are affected more frequently than females.

Epidermoid cysts present as nodular, fluctuant subcutaneous lesions that may or may not be associated with inflammation. (Rajayogeswaran and Eveson, 1989)

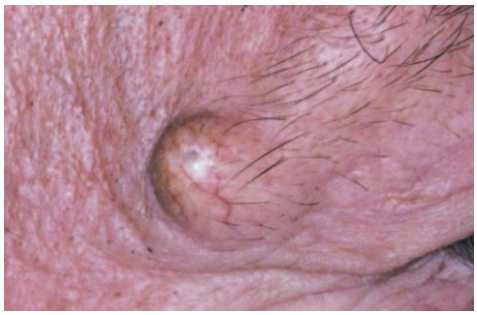

Fig. (12): Epidermoid cyst. Fluctuant nodule at the lateral edge of the eyebrow. (Neville et al, 2009)

If a non-inflamed lesion presents in an area of thin skin, such as the earlobe, then it may be white or yellow.

Pilar (tricholemmal) cysts comprise approximately 10% to 15% of skin cysts, occurring most frequently on the scalp. They are twice as common in women as in men. The lesion is usually movable and shells out easily. (Golden and Zide, 2005)

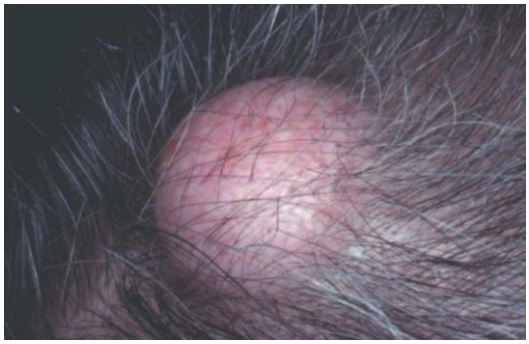

Fig. (13): Pilar cyst. Nodular mass on the scalp. (Neville et al, 2009)

TREATMENT

In some cases, they improve on their own. Putting a warm compress on a cyst can speed up the healing process by helping it drain.

Epidermoid and pilar cysts are usually treated by conservative surgical excision, and recurrence is uncommon.

Malignant transformation has been reported but is exceedingly rare. (Golden and Zide, 2005)

11. Median Mandibular cyst:

The median mandibular cyst is a controversial lesion of questionable existence extremely rare cyst. Theoretically, it represents a fissural cyst in the anterior midline of the mandible that develops from epithelium entrapped during fusion of the halves of the mandible during embryonic life.

However, the mandible actually develops as a single bilobed proliferation of mesenchyme with a central isthmus in the midline. (Gardner, 1988)

As the mandible grows, this isthmus is eliminated. Therefore, because no fusion of epithelium-lined processes occurs, entrapment of epithelium should not be possible.

Because respiratory prosoplasia is not uncommon in odontogenic cysts, it appears likely that most (if not all) of these midline cysts are of odontogenic origin. Many purported cases would be classified today as examples of the glandular odontogenic cyst, which has a propensity for occurrence in the midline mandibular region. (Soskolne and Shteyer, 1977) Others could be classified as periapical cysts, odontogenic keratocytes, or lateral periodontal cysts. Because a fissural cyst in this region probably does not exist, the term median mandibular cyst should no longer be used.

CLINICAL FEATURES

It is asymptomatic, and sometimes there is an expansion of the cortical plate in the anterior mandibular region and teeth associated are vital. (White et al, 1975)

RADIOGRAPHIC AND HISTOPATHOLOGIC FEATURES

Mostly it’s a unilocular, well circumscribed but also maybe bilocular. The lumen lined by stratified squamous epithelium and often folded.

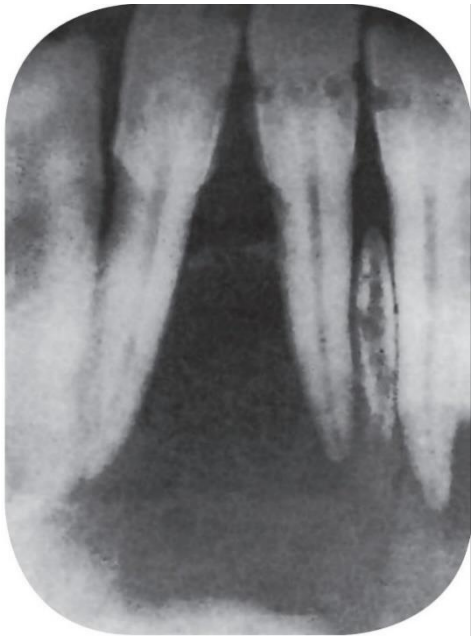

Fig. (14): Periapical radiograph showing Median mandibular cyst. All teeth in the anterior segment were vital. (White et al, 1975)

TREATMENT

Treated by conservative surgical excision. (Gardner, 1988)

Main Complications of some Non-Odontogenic Cysts:

Non-Odontogenic Cysts can cause some complications that varies from mild to moderate degree. Nasopalatine duct cysts can be expansile in nature and may result in drainage intraorally. These lesions can be caused by mucous retention and inadequate drainage, leading to pain or pressure symptoms as the lesion expands. Most lesions are typically asymptomatic and non-specific and can be easily overlooked/missed on routine evaluations.

Nasolabial cysts may present clinically as both non-odontogenic and odontogenic lesions. Thus, the histological analysis is key to the diagnosis.

Palatal cysts of the newborn spontaneously rupture and present with no complications.

Oral lymphoepithelial cysts typically do not present with complications once removed. There is no recurrence after excision.

Epidermoid cysts that become larger in size have the potential to result in complications, such as difficulty with breathing and/or speech. Patients are typically unaware of these lesions until they become larger in size and/or present with symptom. (Soares et al, 2015)

CHAPTER

Three

Conclusion

Cystic-appearing lesions that occur in the mandible are often difficult to distinguish from one another with radiography. They are all usually benign, but some can be locally aggressive and destructive. The patient history and careful consideration of the location of the lesion within the mandible, its borders, its internal architecture, and its effects on adjacent structures generally make it possible to narrow the differential diagnosis. In most cases, these lesions must be surgically removed and examined microscopically to accurately establish the diagnosis.

CHAPTER FOUR

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