Abstract

Cysts are pathological cavity which encloses solid, liquid or gaseous substances. Cystic lesions can be potentially dangerous and life threatening when it occurs in maxillary arch and it affects the adjacent vital structures. Oral diagnostitians plays a pivotal role in early and accurate diagnosis by a proper clinical examination and adequate investigations. This article provides an insight to the salient features of cystic lesions which occur in maxillary arch and associated structures.

KEY WORDS: Odontogenic cyst, Primordial cyst.
INTRODUCTION:

Cysts of maxillary region poses a challenge to oral diagnostician from the time oral medicine and radiology emerged as a speciality. This review article throws light upon the salient features of the cystic masses in the maxillofacial region and the salient features and the importance of an accurate diagnosis and early management of the entity.

CLASSIFICATION:

Cystic masses in maxillary region can be broadly grouped under

1) Associated with Bone  
2) Associated with soft tissues

1) Associated with Bone:

a) Epithelial:
   a1) Developmental
      a11) Odontogenic :
      a12) Non odontogenic :
   a2) Inflammatory
      a21) Radicular
      a22) Residual
      a23) Paradental
      a24) Collateral

b) Non epithelial
   b1) Latent bone cyst / Lingual mandibular salivary gland depression defect / Stafne cyst
   b2) Simple / unicameral / traumatic / hemorrhagic cyst
   b3) Aneurysmal bone cyst
   b4) Mucosal cyst of maxillary antrum
   b5) Extravasation cyst and ranula.

b) Gorlin Goltz / Basal Cell Nevus Syndrome
2) Associated with soft tissue:

   a) Nasolabial
   b) Dermoid
   c) Thyroglossal
   d) Branchial cleft

CLASSICAL FEATURES:

Maxillary sinus is closely related to the upper premolar and molar teeth. Any infection / pathology involving the root of these teeth will have its effect on maxillary sinus.

Odontogenic cysts are defined as epithelial cell lined cysts. This lining is derived from the odontogenic epithelium. Most of these odontogenic cysts are defined by their position than by their histology. It is important hence to describe even the site of lesion while sending the surgical specimen to a pathologist.

Following are the cysts of odontogenic origin.

1) Radicular Cyst:

   [Periapical cyst, Dental Cyst]

   This is the commonest of all odontogenic cysts. This is usually caused due to root infection involving the tooth closely related to maxillary sinus antrum. The resulting pulpal necrosis causes release of toxins at the apex of the tooth leading to periapical inflammation. This inflammation stimulates the Malassez epithelial rests, which are found in the periodontal ligament, resulting in the formation of periapical granuloma that may be infected or sterile. The epithelium undergoes necrosis and the granuloma becomes a cyst. The cyst could well be sterile if the patient had received antibiotic treatment for dental infection. These lesions when small can be easily missed until and unless a routine radiograph is taken.

   Radiographically it is virtually impossible to differentiate granuloma from a cyst. If the lesion is large, it is more likely to be a cyst. Radiographically, both granuloma and cyst appear to be radiolucent, associated with apex of a non vital tooth.

   These lesions can grow into large lesions because they apply pressure over the bone causing erosion. The toxins released by the granulation tissue is one of the common causes of bone erosion. The toxins released by granulation tissue is one of the common causes of bone erosion. These are non neoplastic lesions. Microscopically, the epithelium is a
nondescript stratified squamous epithelium without keratin formation. Evidence of inflammation may be observed in the lining wall.

Clinical features:

As the cyst expands, it causes erosion of the floor of maxillary sinus. As soon as it enters the maxillary antrum, the expansion starts to occur a little faster because there is available space for expansion. When it reaches a size where it fills up the whole antrum, it can erode the anterior wall of the maxilla (in the canine fossa area). This is the weakest portion of the maxillary bone. When it erodes the anterior wall of the maxilla, it could cause expansion of maxilla which could be seen as a swelling in the cheek area. On palpation, eggshell crackling may be felt in the anterior wall of the maxilla over the canine fossa. There will be associated tenderness. Tapping the teeth with a tongue depressor will cause tingling sensation because of involvement of root of teeth.

2) Dentigerous cyst:

This is the second commonest of odontogenic cysts. It is always associated with unerupted teeth. In fact it develops within the normal dental follicle. It is more common over the maxillary third molars and maxillary canine tooth areas. This is not considered to be a true neoplasm. Most of these dentigerous cysts are asymptomatic and are incidental discoveries.

The usual radiographic appearance is that of a well demarcated radiolucent lesion attached to an acute angle to the cervical area of an unerupted tooth. The border of the lesion may be radiopaque. The radiographic difference between a dentigerous cyst and a normal dental follicle is based merely on size. While viewing an x-ray a dentigerous cyst should always be differentiated from a normal dental follicle. In all probability, a large sized cyst could only be a dentigerous cyst.

Histologically, a normal dental follicle is lined by enamel epithelium, whereas dentigerous cyst is lined by non keratinising stratified squamous epithelium. Since the dentigerous cyst develops from follicular epithelium, it has more potential for growth, differentiation and degeneration than a radicular cyst. Occasionally, the wall of a dentigerous cyst may give rise to a more ominous mucoepidermoid carcinoma. Dentigerous cysts due to its propensity for rapid expansion may cause pathological fractures of jaw bones.

3) Primordial cyst:

This cyst develops in place of a tooth. This could be due to the fact that formed dental follicle undergoing cystic degeneration instead of odontogenesis. Histologically, these lesions are lined by stratified squamous epithelium. These cysts may be surgically removed.
4) Residual cyst:

A residual cyst, as the name implies, is a radicular, lateral, dentigerous or another cyst that has remained after its associated tooth has been lost. In practise, These cysts are caused by retained periapical cysts after the teeth is removed. The cyst wall is formed by stratified squamous epithelium.

Males are commonly affected (3:2). It is usually seen above 20 years (Average age is 52 years). It has a maxillary predilection in 57 % cases. Radiographically it can appear unilocular or multilocular. It can be clinically asymptomatic and pre extraction radiograph can often show tooth with associated cyst.

5) Lateral periodontal cysts:

This is a misnomer. It is neither inflammatory cyst nor associated with periodontal epithelium. These cysts are associated with lateral canals within the tooth structure. These cysts are always well demarcated, small and radiolucent. The lining epithelium is made of thin cuboidal cells. The cyst wall shows no evidence of inflammation and is thickened by the presence of fibrous tissue.

6) Gingival cyst:

Gingival cysts are of two types, ie adult and new born. In new born, these cysts are multiple, but rarely it may also be single. They are located in the alveolar ridges. In children, these cysts originate from the dental lamina. They are asymptomatic and donot cause any problems. In adults, these cysts are commonly found.

MANAGEMENT:

Radicular Cyst: If cyst is small, then it may resolve with endodontic therapy of involved tooth. If the cyst is large, then it will have to be excised/ marsupialised through Caldwell Luc approach. With the advent of nasal endoscopy, the lesion could be accessed through a nasal endoscope. The excised specimen should be sent for histopathological examination because squamous cell carcinoma could be lurking within the cystic lesion.

Dentigerous cyst must be excised surgically via a Caldwell Luc approach.

Primordial cyst, Residual cyst, Lateral periodontal cyst and gingival cyst can be surgically removed.

CONCLUSION:

Cysts of maxillary region can be a potentially life threatening condition if it is not diagnosed and managed at the early stage. It can impair with the normal physiological functions and hence a thorough clinical examination and investigation will reveal the cystic mass which is very important in the prognosis of the condition.

CONFLICT OF INTEREST: None
BIBLIOGRAPHY:


