



FOLLICULAR CYST ASSOCIATED WITH CHOLESTROL CLEFTS -A CASE REPORT

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ABSTRACT Dentigerous cyst is the intrasosseous odontogenic cyst mostly associated with the impacted or unerupted teeth. They are usually accompanied with the crowns of the permanent teeth especially mandibular 3rd molars, canines and 3rd molars of maxilla and rarely in the anterior of the maxilla. They often grow as a larger cyst and also affects the symmetry of face, disturbance of dentition and predisposing the fractures to the jaw. Dentigerous cysts if left untreated could cause serious complications as they have capacity to develop into other malignancies. This case report is about the dentigerous cyst with cholesterol clefts in the mandibular 3rd molar region which was been treated.

KEYWORDS : odontogenic cysts, dentigerous cysts, mandibular 3rd molar.

INTRODUCTION:

Ever since man or animal has evolved with the presence of the teeth, occurrence of the diseases associated with it has begun. Once such occurrences are the cysts of jaw. The cysts are broadly classified in to odontogenic (from the tooth forming tissues) and non-odontogenic (during the development). Dentigerous cysts was classified by Robinson (1945) and Gorlin (1964) as odontogenic cyst and as developmental odontogenic cyst by WHO ICD-DA in 1995 and as developmental (follicular type) by WHO Classification of Odontogenic Lesions (2017)(1). Dentigerous cysts are the second most common bone cyst affecting 0.91-7.3% of the population.(2) These can be found in individuals of all ages, however they are most commonly discovered in children. Patients between the ages of 10 and 30 are most susceptible. There is a little masculine preference, the incidence is quite high and Whites have a greater rate than blacks.(3) Though cysts enclose the unerupted teeth and covers neck of the crown ,resorption of the root are less common. DCs arise as a consequence of cystic change in the remnants of the enamel organ after enamel formation is complete. Complications occur when the cysts become large and depends on the area it enlarges ,in the maxillary region it may displace and obliterate the maxillary antrum and nasal cavities; while in mandible it may cause paraesthesia of inferior alveolar nerve, or metaplastic and dysplastic changes may occur.(4)

Case report

A 30 year old male reported to the department of oral medicine and radiology with a chief complaint of pain in lower left back tooth region since few days .When asked to elaborate on the main complaint, the patient stated that he had very moderate pain in that location before one year and was hesitant to treat it. After a year, he was experiencing dull, constant discomfort in the lower left back tooth region, which had become acute and prickly in character three months ago. Mastication aggravated the pain, which was eased by relaxation. His medical history revealed that he was on medication for hypothyroidism. On inspecting the oral cavity, presence of erythematous inflamed area was visible on the lingual aspect of 38, extending from the mesial aspect of.(Fig 1)The inflamed area was painful and was firm in consistency. There was no sign of pus discharge while palpating. A provisional diagnosis of Impacted 38 region was given.

OPG was taken and the revealed ,presence of well-defined homogenous radiolucent area measuring about 3x2 cm extending from the cementoenamel junction of on both proximal sites displacing the teeth in the inferior cortex of the mandible. Dentigerous cyst was given as diagnosis and other differential diagnosis including odontogenic keratocyst, eruption cyst ,ameloblastoma was

considered. Surgical enucleation was planned and CBCT images of that area was taken. The region of interest revealed presence of well-defined homogenous radiolucent area extending anteriorly to the distal aspect of 37 with no obvious buccolingual expansion, the inferior alveolar canal was seen ascending to the ramus of the mandible lying buccally on to the horizontally impacted 38 region.(Fig 2) Careful enucleation was carried out under LA. The cystic content was drained and the epithelium along with the tooth was carefully disposed into the formalin solution and was sent to histopathological evaluation. Histopathological evaluation revealed that it was a fibrovascular connective tissue associated with non-keratinised stratified squamous cystic lining epithelium exhibiting mild focal aggregate of chronic inflammatory cell infiltrates and cholesterol clefts (Fig 3). A histopathological diagnosis of Dentigerous cyst in 38 region was given. Postoperative radiographs were taken and 3 month follow up radiograph showed satisfactory healing(Fig 4).

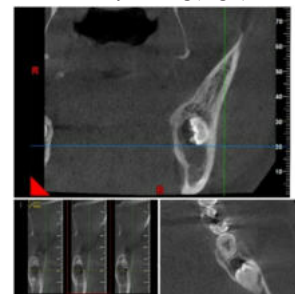


Fig 1: A:Extra oral picture, B:Intraoral picture showing inflammation in the lingual aspect 38,C:OPG of 38 region



Fig 2: A:sagittal, B:coronal and C:axial CBCT images of the 38 region

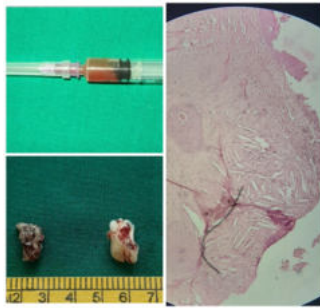


Fig 3: A. FNAC, B. Specimen with extracted tooth and C. histopathological picture showing cholesterol clefts



Fig 4: A: Post operative radiograph, B: Three month follow up radiograph

DISCUSSION

Dentigerous cysts (denti =teeth, gerous=producing, bearing) accounts for 20% of all jaw cysts, and a dentigerous cyst has occurred in 10% of impacted teeth. Paget invented the term "dentigerous cyst" in (1863). Teeth from the adult dentition were included, as well as supernumerary teeth. (5) Although the specific aetiology of this cyst is uncertain, numerous explanations have been offered. The "intrafollicular hypothesis" is a theory that implies that a DC is the result of fluid build up between the epithelium's outer and inner surfaces. The "enamel hypoplasia theory" is the second theory, it implies the formation of a cyst as a result of stellate reticulum degeneration. According to "Main's theory," the cyst is caused by an impacted tooth's hydrostatic pressure on the gums that causes the impacted crown separate from the surrounding follicles around it. (6) According to certain authors, a DC is more likely to form as a result of an inflamed nonvital deciduous tooth in the adolescent period during the permanent successor's maturation. (7) But in our case it is known that this dentigerous cyst is developmental origin not through inflammation since the molars are not succedaneous teeth. According to a study conducted by Friedlander et al., VEGF and VEGFR2 were evident in dental follicles and dentigerous cysts associated with impacted 3rd molars which may contribute to cyst development and progression. (8) Dentigerous cysts are usually asymptomatic and are discovered by chance in radiographs collected for other purposes. (9) According to Tsukamoto et al, 58 percent of the DCs they looked at were symptomatic, whereas 42 percent were asymptomatic. (10) According to Sanatkhanani et al, 15% of the DCs they examined were in pain while 80% were swollen. (11) The most common radiographic finding is a well-defined, unilocular radiolucency along with sclerotic rim. Resorption of neighbouring teeth is a possibility of DC. Central variant is most common type where the cyst develops around and surrounds the entire crown of tooth, thus tooth appears to be erupting into the cyst which is similar in our case. (12) Radiographic characteristics of more severe odontogenic lesions such as odontogenic keratocyst, ameloblastoma, and other odontogenic tumours might be similar to DC (8). The use of cone beam computed tomography (CBCT) is important in the treatment of these cysts that are closely related to essential anatomical structures which is useful for distinguishing the lesion's hard tissue perimeter from its soft tissue involvement. (13) Cholesterol clefts are usually associated with the radicular cyst rather than dentigerous cyst. According to Thoma and Goldman cholesterol accumulates in the tissues is due to degeneration and disintegration of cells, in particular epithelial cells. According to Shear cholesterol arises due to haematogenous origin. (14) Our case shows all the possible findings of dentigerous cyst clinically and radiologically but histopathologically the cholesterol clefts are prominently evident with no other similar findings related to

dental/radicular cyst. This unusual findings gives us the academic discussion of how cholesterol clefts is found in the dentigerous cyst though the treatment being common for both the cysts. Marsupialization is a surgical treatment that lowers intra cystic pressure and causes the cyst to diminish over time. The extensive postoperative treatment time and discomfort of leaving the incision exposed are also downsides of marsupialization. In adults, the cyst can also be enucleated together with the affected tooth when the likelihood of a tooth erupting is minimal. (15)

CONCLUSION:

Dentigerous cyst is a benign, slowly developing odontogenic cyst. Consequently, radiographic inspection of unerupted teeth is crucial. Because traditional radiography often fails to outline the entire extent of a lesion if one exists, more sophisticated imaging, such as CBCT, may allow for a better delineation of the lesion's size and relationship to the surrounding anatomical structures leading to better treatment outcomes. Though cholesterol clefts being the common findings of radicular clefts there are cases of dentigerous cysts associated with cholesterol clefts in the literature reported.

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