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RESEARCH ARTICLE

DENTIGEROUS CYST ASSOCIATED WITH TRANSMIGRATED MANDIBULAR CANINE - A CASE REPORT

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Abstract

A dentigerous cyst is an asymptomatic lesion of odontogenic origin mostly involving the mandible. It is associated with the crown of unerupted, partially erupted, or impacted teeth with a higher incidence occurring in males. It is discovered during routine radiographic examinations unless manifests clinically as a large lesion. Radiographically, a dentigerous cyst presents as a radiolucent lesion enveloping the crown of the involved tooth. Enucleation and marsupialization are the surgical modalities. Here we report a case of dentigerous cyst involving mandibular right transmigrated canine.

Introduction:-

Dentigerous cyst or follicular cyst, thought to be developmental in origin, is a benign non-inflammatory odontogenic cyst.[1]Epithelial remnants of odontogenic epithelium result in the development of a variety of odontogenic cysts.[2] Dentigerous cyst accounts for about 16.6 % of all jaw lesions.[3] It is characterized by a symmetric radiolucent lesion that is well defined and unilocular.[4] Total enucleation, marsupialization, and decompression of the cyst via fenestration are some common surgical modalities used.[5]Hereby we report a case of a dentigerous cyst with transmigrated canine that presented as a unilateral swelling.

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Case Report

A medically fit 20-year-old male patient reported to our dental outpatient department with the chief complaint of swelling on the right side of the lower face for 3 years. The swelling had been slowly growing over the period with no history of trauma, discharge, or pain. The extraoral examination revealed no significant positive findings. [Figure 1] There was no sign of any regional lymphadenopathy. Intraoral examination revealed retained right deciduous canine and missing right permanent canine in the mandible. Swelling of size 2 x 3cm in diameter, and was firm, non-tender with ill-defined margins in the right lower vestibule. The overlying mucosa was normal. The teeth adjacent to the swelling were firm.[Figure 2] The patient was advised for an intraoral periapical radiograph which revealed periapical radiolucency concerning the mandibular right central incisor and left central incisor, and resorption of root of the deciduous canine. The root tip of the horizontally impacted mandibular right canine can also be appreciated. The mandibular occlusal radiograph reveals a well-defined radiolucency extending from the mandibular right first premolar to the mandibular right first molar region. Buccal cortical plate expansion extending from mandibular right first premolar to mandibular right first molar region is also appreciated [Figure 3]. We advised orthopantomograph to check the location of impacted mandibular right canine that revealed unilocular radiolucency extending till the mesial aspect of the mandibular right first molar, suggestive of the dentigerous cyst. Distal migration of impacted canine noted. [Figure 4] A provisional diagnosis of the dentigerous cyst was made based on the clinical and radiographic findings.

The contents of the swelling were aspirated and sent for investigation, the result of which was consistent with the diagnosis of the cystic lesion. [Figure 5] Surgical enucleation was the treatment of choice with disimpaction for the mandibular right canine. [Figure 6] The surgery was done under local anesthesia and the course of antibiotics. The cyst cavity was sterilized by irrigating with saline followed by PRF placement that accelerates the soft and hard tissue healing. The specimen was sent for histopathological examination.

H and E-stained sections of the specimen showed a lumen and capsule. The capsule was lined by the stratified squamous epithelium of 3 to 5 layers thick odontogenic cells with some areas hyperplastic, the underlying connective tissue is fibrosed and infiltrated with chronic inflammatory cells. Few odontogenic rests are seen in connective tissue capsules which confirmed the diagnosis of the dentigerous cyst. [Figure 7]

Discussion:-

Among odontogenic cysts, the dentigerous cyst is the second most common type.[6] The second and fourth decades of life are the phase during which dentigerous cysts are predominantly found. A slight male predilection is reported, with a ratio of male to the female being 3: 2.[7] In the present report, the patient was a 20-year-old male.

The mandible is the most common location in most cases.[3] Commonly involved teeth are mandibular third molar, maxillary third molar, canine, mandibular second premolar, and canine. Mandibular canine associated with the dentigerous cyst is a rare entity. [1,4] The ratio of maxillary to mandibular canine associated with the cyst is 20:1. [8] In the reported case, the cyst was associated with a mandibular right impacted canine.

Migration of pre-eruptive tooth across the midline is described as transmigration. Five types of migratory teeth patterns are observed based on position in the jaw. Type 1, canine impacted mesioangularly across the midline; Type 2, canine horizontally impacted near the inferior border of the mandible, inferior to the apices of the incisors; Type 3, canine erupted mesially or distally when compared to the other side; Type 4, canine horizontally impacted below the apices of posterior teeth on the opposite side, near the inferior border of the mandible;Type 5, canine positioned vertically in the midline and crossing the midline.[1] In the present case, the canine has erupted distally to the opposing canine which belongs to the Type 3 migratory tooth pattern.

Complications of dentigerous cyst include its potential to become large resulting in erosion and expansion of the cortical bone. Roots of an adjacent tooth being resorbed are a common finding when compared to odontogenic keratocyst or radicular cyst. Occasionally, squamous cell carcinoma, mucoepidermoid carcinoma, and ameloblastoma might result from the transformation of a dentigerous cyst from its epithelial lining.[8] In this case, resorption is present in the apical region of the mandibular right second premolar and first molar.

Marsupialization has opted in cases where enucleation with curettage might result in neurosensory dysfunction.[9] In the reported case, based on the patient's age, size of the cyst, and position of the tooth, enucleation was preferred along with the extraction of impacted mandibular right canine to prevent any recurrence.

Dentigerous cysts are often solitary lesions. Maroteaux–Lamy syndrome and cleidocranial dysplasia are often associated with multiple and bilateral cysts.[10]

Conclusion:-

The prognosis for most of the dentigerous cysts is excellent when it is backed by histopathological, radiographic diagnosis before surgical treatment. It is documented that dentigerous cyst lining has the potential to develop into ameloblastoma, mucoepidermoid carcinoma, and squamous cell carcinoma, though recurrence is rare when it is completely removed. Hence through the right surgical approach, the problem can be alleviated in the best long-term interest of the patient.

Figures:-

Figure 1:- Extraoral view

Figure 2:- Missing 43, Retained 83 along with vestibular expansion irt 83-45 region.

Figure 3:- Occlusal radiograph showing unilocular radiolucency.

Figure 4:- Panoramic radiograph showing distally migrated canine with unilocular radiolucency.

Figure 5:- Fine needle aspiration revealed blood-tinged purulent aspirate.

Figure 6:- Surgical enucleation, Impacted tooth removal.

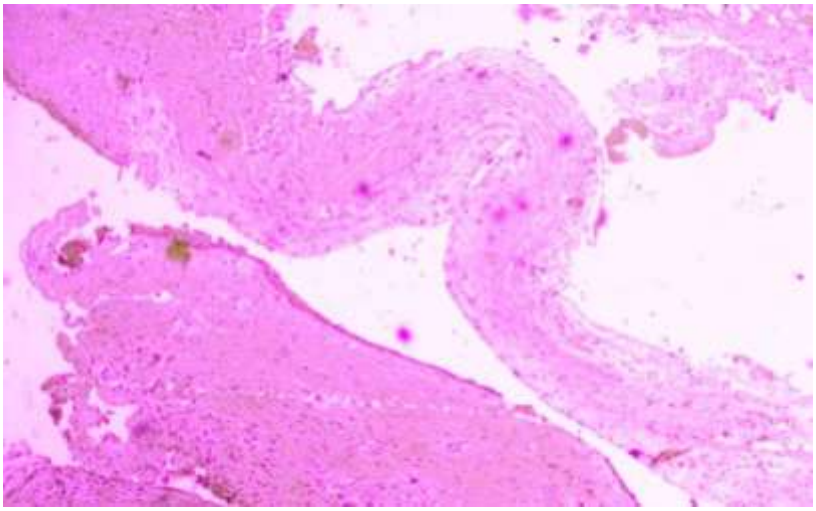

Figure 7:- Histopathological section showed stratified squamous epithelium of 3 to 5 layers thick odontogenic cells with some areas hyperplastic.

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