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Dentigerous Cyst in The Maxillary Sinus Associated With An Ectopic Tooth: A Case Report

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Abstract: *Ectopic teeth are those teeth that are located in the jaw bones or regions other than the alveolar arch. Ectopic eruption of tooth is rare. There have been a few case reports of teeth erupting in mandibular condyle, coronoid process, chin, palate, maxillary sinus. Ectopic tooth/teeth in the maxillary sinus are usually found incidentally on routine radiological examination, same time they can be symptomatic and associated with pathologies usually dentigerous cyst or okc. Hereby we report a management of dentigerous cyst associated with an ectopic tooth in the maxillary sinus.*

Keywords: *Dentigerous cyst, Ectopic tooth, Impaction, Maxillary sinus.*

I. Introduction

Ectopic teeth are those teeth that are located in the jaw bones or regions other than the alveolar arch. Ectopic eruption of tooth is rare. There have been a few case reports of teeth erupting in mandibular condyle, coronoid process, chin,palate, maxillary sinus[1]. Ectopic tooth/teeth in the maxillary sinus are usually found incidentally on routine radiological examination, same time they can be symptomatic and associated with pathologies usually dentigerous cyst or okc.

The maxillary canine and mandibular third molars are involved with dentigerous cysts surrounding impacted teeth often displace them into the ectopic positions. In the maxilla, these teeth are often displaced into the maxillary sinus.[2] Dentigerous cyst in the maxillary sinus associated with an ectopic tooth are rare.

Paget in 1853, first coined the term "Dentigerous cyst". These cysts are the most common type of developmental odontogenic cyst arising from the crowns of impacted, embedded, or unerupted teeth. [3] These cysts occur due to the accumulation of fluid between an unerupted tooth and surrounding reduced enamel epithelium. Male are more commonly involved than female. About 70% of dentigerous cysts occur in the mandible and 30% in the maxilla.

Removal of the cyst is necessary if it is left untreated it has a tendency to form a cyst or tumor and/or the lesion may cause perforation of the orbital floor and can obliterate the nasal cavity. Hereby we report a management of dentigerous cyst associated with an ectopic tooth in the maxillary sinus.

II. Case Report

A 20 year old female reported to the Dept. of Oral & Maxillofacial Surgery with complaints of pain and pus discharge from upper right back tooth region since 4-5 days(Fig.1). The pain was intermittent and severe in nature which was radiating to the forehead. There were no aggravating factors, but the pain was relieved by taking analgesics. On extra oral examination, there was no swelling present and on intra oral examination, there was pus discharge from the distal surface of upper right second molar and missing third molar.

OPG revealed all third molars were impacted and upper right third molar was displaced above the level of the apex of upper right second molar in the right maxillary sinus(Fig.2). Coronal view of cone Beam Computed Tomography (CBCT) showed the presence of cystic lesion along with impacted third molar approximately 2.5cm × 2cm within the right maxillary sinus(Fig.3).

Caldwell-Luc procedure was planned under Local anesthesia, an incision made in the upper right vestibular region extending from the medial aspect of upper right first premolar to the distal aspect of the second molar, mucoperieostial flap was elevated and bony window created posterior to the canine fossa(Fig.4).

Impacted third molar was accessed through a window. Enucleation of cyst was done along with along with removal of tooth(Fig.5). Irrigation and debridement was done. Primary closure was done using 4.0 Vicryl. Tissues were sent for histopathological examination.h&e stained section shows cystic lining and connective tissue capsule.the cystic epithelial lining is off 2-3 layered cells resembling reduced enamel epithelium.the connective tissue stroms is bland and primitive. Few odontogenic epithelial islands and rests are evident(Fig.6a-6b). Histopathological report suggested dentigerous cyst. Postoperative healing was good and patient was kept on regular follow up and there was no postoperative complication seen.

III. Discussion

The ectopic eruption of teeth into the regions other than the oral cavity is rare, although there have been reports of teeth in the ectopic eruption of tooth into maxillary sinus is very rare. mandibular condyle, coronoid process, chin, palate and nasal cavity. The causes of ectopic eruption of the tooth has not been completely identified, but many authors have suggested trauma, infection, developmental disturbances and pathologic conditions, such as dentigerous cysts. It is believed that the displacement of tooth buds by the expansion of the cystic lesion result in the "ectopic" eruption of teeth.

Dentigerous cysts are most common type of developmental odontogenic cyst derived from epithelial remnants of tooth forming organs. [(1)] Dentigerous cyst develops by accumulation of fluid between the reduced enamel epithelium and the enamel or between the layers of reduced enamel epithelium.

Dentigerous cyst usually occurs in second and third decades of the life. Male are more affected than the female. Mandibular third molar is the most commonly involved than maxillary canine, mandibular premolar and maxillary third molar and dentigerous cyst in the maxillary sinus associated with an ectopic tooth is a rare phenomenon. 12 cases of dentigerous cyst in maxillary sinus has been reported among them nine cases are associated maxillary third molars, one pre-molar and two canine. All the cyst treated with cald well luc procedure[1-8,10,11]. Suvarna Gowda[et al] reported a case of keratinizing dentigerous cyst in maxillary sinus associated with supernumery tooth which was treated with cald well luc procedure[12].Hyuk Il Kwon[et al] reported odontogenic keratocyst associated with an ectopic tooth in the maxillary sinus which was removed by cald well luc procedure[13].

Dentigerous cysts are completely asymptomatic and painless in the initial stage and in maxillary may become painful due to secondary infection. If it gets infected it can cause the facial swelling, sinusitis, sensory changes, oroantral communication with purulent discharge. Expansion of the cyst may cause the obstruction of the sinus, elevation of the orbital floor, epiphora due to nasolacrimal duct obstruction, purulent rhinorrhea.

The cyst may be identified during routine radiological examination. In asymptomatic cases conventional radiographs are sufficient for the diagnosis of the lesion. But advanced imaging modalities like the computed tomography (CT) and the cone beam computed tomography (CBCT) are of the most useful in the management of these cysts involving the maxillary sinus.

There are two types of treatment options available either by enucleation or marsupialisation. In our case enucleation and removal of tooth was carried out by Caldwell-Luc technique under local anesthesia. Recurrence rate of dentigerous cyst is very low as compared to other jaw cysts[7].

IV. Conclusion

Dentigerous cyst associated with ectopic tooth in maxillary sinus is a rare phenomenon. Our patient presented with a history of pus discharge from upper right posterior tooth region since 4-5 days. After radiologic and CBCT evaluation a cystic lesion associated with an ectopic maxillary third molar within the maxillary sinus was established. Enucleation of the entire cyst along with the removal of the tooth was carried out via Caldwell-Luc procedure. Histopathological examination of the cyst excluded any associated malignancies. The recovery was uneventful.

Figures:

Fig-1

Fig-2

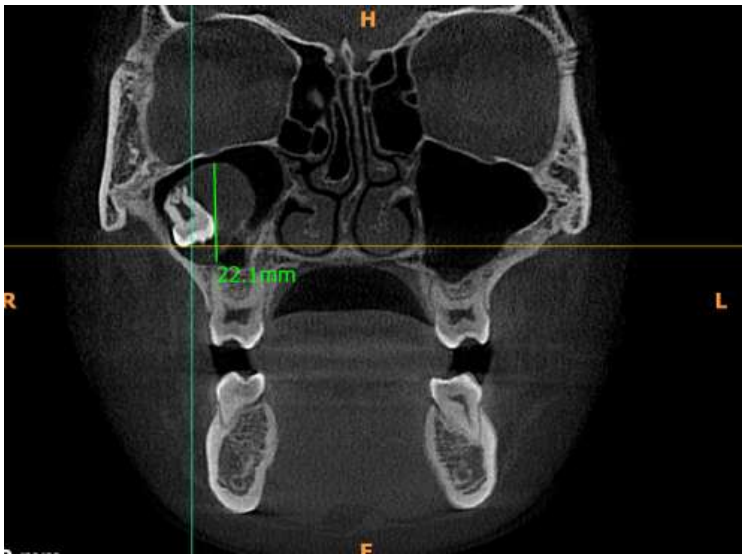

Fig-3

Fig-4

Fig-5

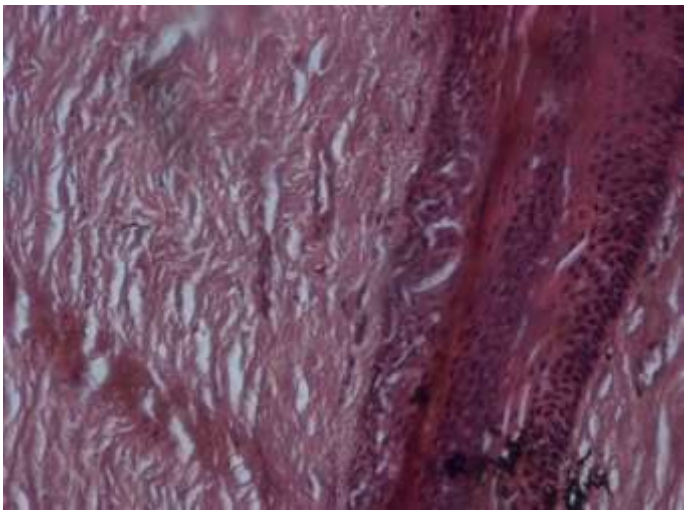

Fig-6a

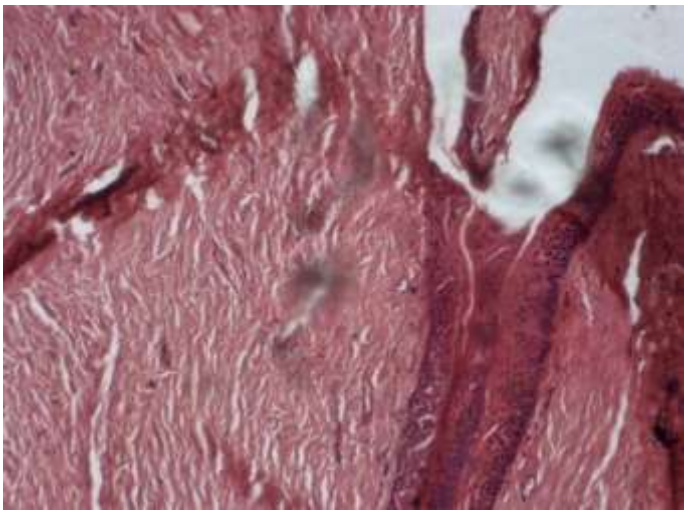

Fig-6b

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