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Case Report Open Access

Ameloblastic Transformation in Dentigerous Cyst of Ectopic Tooth in Maxillary Antrum – A Rare Entity

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Abstract

Dentigerous cysts are commonest type of developmental, epithelial-lined, odontogenic cysts arising in the jaw from the crowns of impacted, unerupted or embedded tooth, most often third molar. But dentigerous cysts arising from ectopic tooth in maxillary sinus is quite rare. Ameloblastoma changes in the dentigerous cysts are rare and to the best of our knowledge have not been reported to be arising from ectopic tooth in maxillary antrum. In this article, we present the radiological diagnosis, clinical features and management of this rare case of ameloblastic transformation in dentigerous cyst arising from ectopic tooth in maxillary antrum.

Keywords: Ameloblastoma; Dentigerous cyst; Ectopic; Maxillary antrum

Introduction

Dentigerous cyst is the commonest developmental odontogenic cyst arising from crowns of impacted or unerupted or embedded tooth, most commonly from mandibular molar & maxillary canine [1]. It usually arises from permanent teeth with few case reports of dentigerous cysts arising from deciduous teeth [2]. Dentigerous cysts arising from supernumerary teeth are fairly rare and constitute only 5-6% of all with majority arising from maxillary tooth [3]. Only 20 cases of dentigerous cyst arising from ectopic tooth in maxillary antrum have been reported in medline from 1980 [4,5]. Rarely, the dentigerous cyst may transform in to unicystic ameloblastoma producing pathological fracture or in to squamous cell or mucoepidermoid carcinoma secondary to chronic infection [6-9] mandating thorough histopathological examination of excised lesion.

Case Report

A 30-year old female came to the outpatient department of our hospital with a chief complaint of pain on left side of face for last 20 to 25 days. Patient was apparently alright 25 days back when she developed pain in the left zygomatic region which was dull & persistent. It was radiating to the left temporal region. It subsided temporarily but completely on taking pain relievers. There was no significant family or personal history. General physical examination was normal. However, deep palpation revealed slight pain over the left malar region.

Past history revealed that patient had developed some swelling in left upper third molar region few years back, which was associated with pus discharge and dull localized pain. Above problem had been occurring time and again for which the patient had been taking pain relievers.

Radiograph of the paranasal sinus region in posteroanterior projection (Water's view) was advised that revealed ovoid radiodense focal lesion in left maxillary sinus region associated with partial opacification of left maxillary antrum without any obvious bony destruction [Figure 1]. As oral examination revealed absence of left maxillary third molar, hence an Orthopantomogram (OPG) was advised which revealed ectopic location of the left maxillary third molar tooth in the left maxillary region [Figure 2].

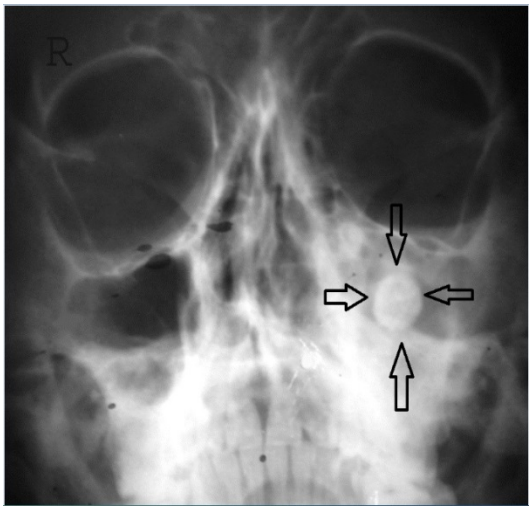

Figure 1: PA radiograph of PNS region shows an ovoid focal radiodensity (arrows) in left maxillary region with partial opacification of left maxillary sinus.

To confirm the above findings, noncontrast computed tomography examination of the maxillary region was performed which revealed complex mass with predominant radiolucent area corresponding to fluid-attenuation and radiodense component corresponding to bone

attenuation, epicentered in left antral cavity with presence of ectopic left maxillary third molar tooth in the antral cavity [Figure 3]. A provisional diagnosis of dentigerous cyst arising from ectopic, left maxillary third molar tooth with possibility of chronic sinusitis was suggested on imaging.

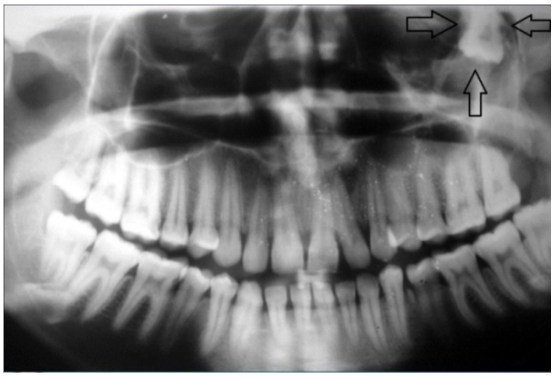

Figure 2: An OPG show ectopic left maxillary third molar in the left maxillary region (arrows).

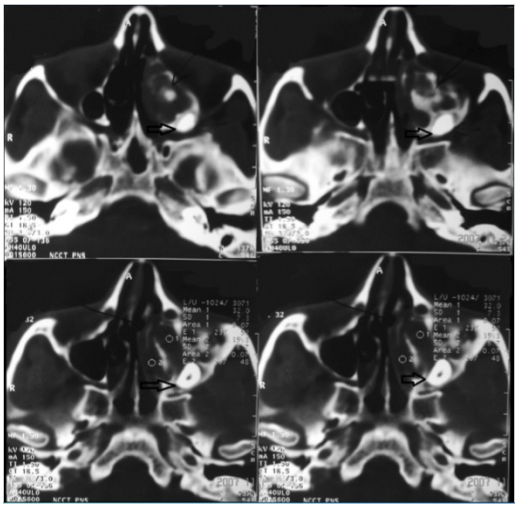

Figure 3: Transaxial CT images show presence of ectopic tooth in left antral cavity (thick arrow) with fluid collection and sclerotic / bony areas (thin arrows) and slight expansion of cavity.

Surgery was performed under general anesthesia (Caldwell Luc's procedure) to get final diagnosis as ectopic tooth with dentigerous cyst may show malignant transformation. Full thickness mucoperiosteal flap was raised and a window was created in anterior wall of antrum. Some amount of pus and soft tissue fragments that came out were preserved for histopathological examination. As the sinus cavity was divided in to multiple compartments by bony septae, a bony window was created and the tooth was delivered [Figure 4] along with pus-like fluid, epithelium like substances and necrosed bone. Tooth along with the necrosed bone were also sent for histopathological examination. Final tissue examination suggested features of dentigerous cyst transforming into unicystic ameloblastoma [Figure 5].

Figure 4: Photograph of surgically removed ectopic tooth from left maxillary antrum.

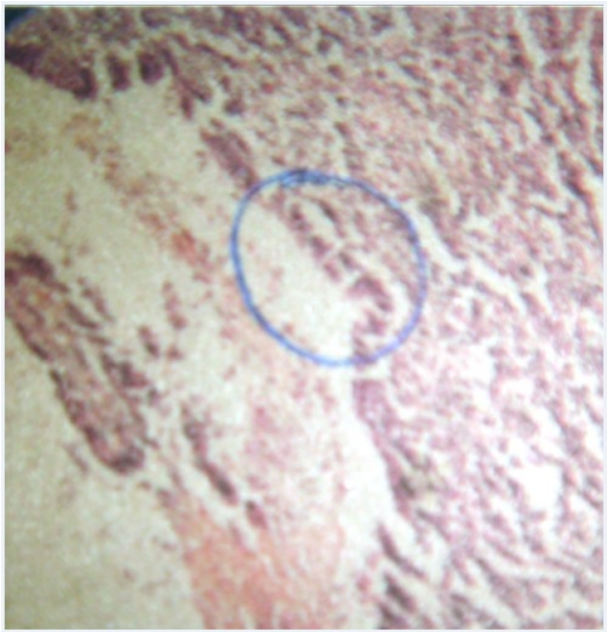

Figure 5: Histopathological section showing signs of ameloblastic tissue in dentigerous cyst.

Discussion

Ectopic eruption of tooth outside the oral cavity is quite rare and may involve nasal septum, mandibular condyle & coronoid process,

palate, chin and maxillary sinus [10]. The ectopic tooth arising from the maxillary antrum may remain asymptomatic for long period or may present with sinonasal symptoms especially chronic sinusitis.

Dentigerous cyst is the commonest development follicular cyst occurring in second & third decades of life, more commonly in males. Rarely these may occur in relation to the ectopic tooth as well [11]. Displacement of tooth buds by expanding dentigerous cyst in to ectopic locations as maxillary sinus has been described as a postulated mechanism.

Water's view of PNS region and OPG are very useful in the diagnosis of ectopic tooth in maxillary antrum where the ectopic tooth can be easily identified by its high attenuation and shape. CT scan and Magnetic Resonance Imaging (MRI) are useful in confirming the intra-sinus location of ectopic tooth and in determining associated complications as dentigerous cyst [11]. Magnetic resonance imaging shows dentigerous cyst as hypointense lesion on T1 weighted & hyperintense lesion on T2 weighted images while ectopic tooth appears hypointense on all image sequences [12].

Surgical removal of ectopic tooth in maxillary antrum is the preferred method of treatment as malignant transformation of dentigerous cyst in to ameloblastoma has been described in medical literature [9] but not in dentigerous cyst arising from ectopic tooth in maxillary antrum as seen in our case making our case unique and rare. Complete surgical excision of the lesion allows complete histopathological examination. Endoscopic removal of a dentigerous cyst related to ectopic tooth has also been described in literature.

To summarize, dentigerous cyst of ectopic tooth in maxillary antrum is rare. Optimal imaging especially CT scan or MRI are required not only for diagnosis but for planning complete surgical excision as there is a risk of ameloblastic transformation in dentigerous cyst.

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