

Tooth in the Maxillary Sinus: A Rare Entity

This article was published in the following Scient Open Access Journal:

Journal of Dental and Oral Health

Received September 03, 2016; Accepted September 21, 2016; Published September 28, 2016

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Abstract

The odontogenic keratocyst (OKC) is an epithelial developmental cyst. It is the third most common odontogenic cyst. It comprises about 12% of all cysts occurring in the maxillofacial region. The occurrences of this lesion in maxilla and mandible have been reviewed extensively. However, there are very few reports of OKC, occurring in maxillary sinus. Here we highlighted a report comprises of clinical features, radiographic findings, histopathology and treatment considerations of OKC in maxillary sinus.

Keywords: OKC, Maxillary sinus, Enucleation

Introduction

The OKC is an epithelial developmental cyst of the jaw. For the age predilection, it has got a bimodal distribution, i.e. second peak in the fifth decade or later. The most important peculiarity of the lesion is its recurrences. Several reasons attributed to its recurrence are occurrence of satellite cysts after enucleation, and thinness of keratocyst lining [1]. In this report, we describe a case of OKC in relation to displaced maxillary third molar into the maxillary sinus of a 28 year old female.

Case Report

A 28 year old female reported with a complaint of pain and pus discharge wrt left upper back teeth region since 3 months. The pain was intermittent, dull-aching, of moderate intensity and was radiating to the ear and eye. It was also associated with pus discharge wrt upper left last molar since 3 months. General physical examination revealed no evidence of pallor, cyanosis, edema, icterus and clubbing. The head and neck examination revealed two submandibular lymph nodes on the left side measuring approximately 1 cm x 1cm were palpable, tender, mobile and compressible. Intra oral examination revealed a slight unnoticeable diffuse swelling on buccal aspect with ill-defined margin and irregular shape measuring approximately 1.2 cm x 1.8 cm obliterating the mucobuccal fold of 25, 26, 27 (Figure 1). The swelling was soft to firm in consistency and was tender on palpation wrt to mucobuccal fold, alveolar mucosa of 25, 26, 27 and distal to 27. Hard tissue examination was shown missing 28 and tender on percussion wrt 26. The pulp vitality test revealed no response for 25, 26 and 27. Intra oral periapical radiograph showed a diffuse radiolucency wrt the periapical region of 24, 25, 26 and 27 with loss of lamina dura and missing 28.



Figure 1: A slight unnoticeable swelling on buccal aspect which obliterates the mucobuccal fold of 25, 26, 27 wrt anterior and left posterior body of mandible.

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A panoramic radiograph revealed, a well- defined corticated radiolucency irt left maxillary sinus and periapical to 23, 24, 25, 26,27 (Figure 2). A well-defined radiopacity seen above the left lateral wall of maxillary sinus below the floor of left orbit suggestive of missing 28. Paranasal sinus view showed missing 28 with diffuse radiopacity irt left maxillary sinus (Figure 3). Lateral skull radiograph revealed displaced 28 with radiolucency in maxillary sinus (Figure 4). All the blood parameters were within the normal range. The aspiration cytology showed only crowded red blood cells and inflammatory cells. The enucleation (Figure 5a, 5b) of the cyst was advised and the specimen was sent for

histopathological examination. Microscopic examination revealed that parakeratotic epithelial lining with absence of rete pegs and distinct columnar cells seen in basal layer of epithelium suggestive of tombstone appearance and in relation to connective tissue there was presence of few collagen fibers, and blood vessels (Figure 6a, 6b). All these features suggestive of infected odontogenic keratocyst with respect to impacted 28. The decision was made to enucleate the lesion through a Caldwell-Luc approach and extracted the maxillary 3rd molar under general anesthesia. The surgical site was sutured. The patient tolerated the procedure well and healed unremarkably on follow up. On 1 year follow up, the patient was healthy and reported an uneventful recovery. Further, the patient has been followed up for 5 years and there was no sign of recurrence.

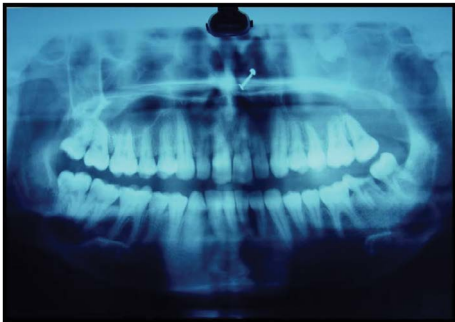


Figure 2: Orthopantomograph revealed, a well- defined corticated radiolucency irt left maxillary sinus and periapical to 23, 24, 25, 26, 27.



Figure 3: Paranasal sinus view showed missing 28 with diffuse radiopacity irt left maxillary sinus.



Figure 4: Lateral skull radiograph revealed displaced 28 with radiolucency in maxillary sinus.

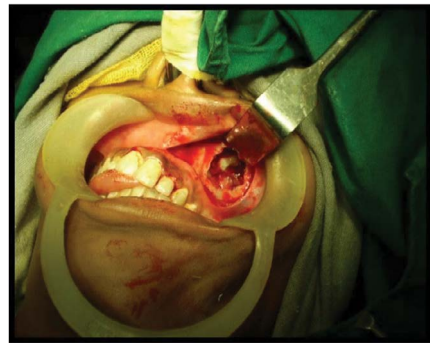


Figure 5a: The enucleation of the cyst.

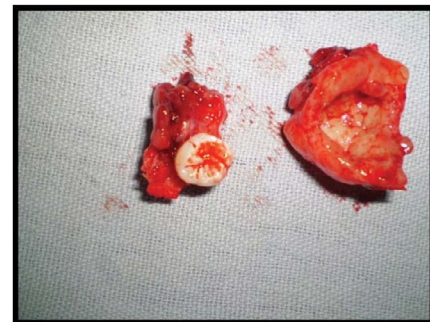


Figure 5b: Gross Specimen

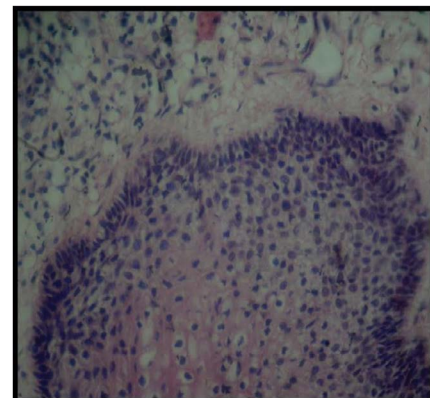


Figure 6a: Histopathological examination revealed that parakeratotic epithelial lining with absence of rete pegs and distinct columnar cells seen in basal layer of epithelium [40X].

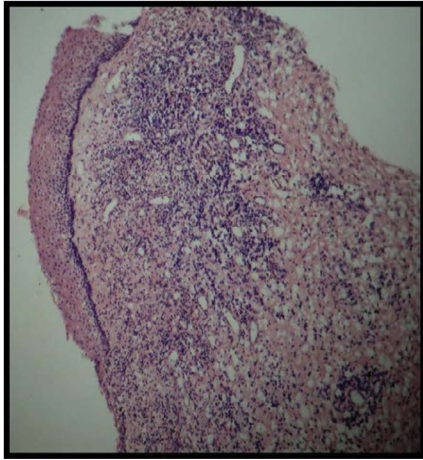


Figure 6b: 10X

Discussion

The OKC, which is reclassified into benign odontogenic tumor by world health organization in 2005, is well known for its 3 main characteristics. Recurrence, aggressive behavior and histopathological features [2]. Several suggested pathogenesis of this lesion are a) remnants of dental lamina b) primordium of the tooth before mineralization has taken place c) basal cell hamartomas. Although etiopathogenesis is not yet entirely clear, most frequently, this lesion are asymptomatic. But in severe cases, symptoms such as pain, swelling, discharge or paresthesia of the lower lip [3]. In the mandible, the growth of the lesion is in an anteroposterior direction without obvious expansion of bone. On the other hand, in maxilla lesion tends to expand the bone in its early stages [4].

The case study observed here affirms the literature data, since the lesion, invasive was painless and affect the adjacent maxillary third molar teeth. In this case, the histopathological examination revealed tomb stone appearance of basal layer of epithelium along with absence of rete pegs. The OKC is most commonly seen in the posterior region of the mandible, mainly occurs in men from second and third decades of life. Among this, less than 1% of all cases of this lesion occur in the maxillary sinus. one interesting aspect in our presented case is that large OKCs that probably developed in the maxillary bone and expanded into sinus [5].

The major drawback of this lesion is its recurrence rate. it was found to be varying from 0% to about 62%.The most critical period is first five years after the operation. So, complete eradication of epithelium components of this lesion and the excision of the mucosa is the only solution [6-8]. In our case, OKC was treated with enucleation and curettage. No recurrence was found even after 5 years of follow up.

Conclusion

In any patient with OKC, the presence of multiple lesions and malignant transformation should be considered. Therefore, the proper evaluation of its histopathological features should be done to rule out its tendency to become ameloblastoma. Additionally, long term follow up must be done to detect any recurrence associated with the lesion when it occurs in the maxillary sinus.

Acknowledgement

The work was supported by USM Global Fellowship from Universiti Sains Malaysia.

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