

Odontogenic Keratocyst (OKC)

Masquerading as Dentigerouscyst: Case Report

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Abstract

Impacted mandibular third molars are commonly associated with pericoronal pathologies. Dentigerous cyst is the most common developmental cyst of the jaw. Some of the other pathologies related to impacted teeth are adenomatoid odontogenic tumor (AOT), pindborg tumor, ameloblastoma and sometimes odontogenic keratocyst. Sometimes these pathologies can be differentiated only after histopathological examination. This article presents the case of a 25 year old male patient with complaint of pain in left mandibular posterior region. Clinico-radiographic diagnosis was dentigerous cyst however histopathological report after biopsy was suggestive of Odontogenic keratocyst. Odontogenic keratocysts (OKCs) often occur in the molars in the mandibular ramus; they often progress asymptotically and are discovered only after widespread development. As the recurrence of OKC is higher than dentigerous cyst so the clinical, radiological and histological features of this tumour along with its surgical management have been discussed.

Keywords: Dentigerous cyst, odontogenic keratocyst, impacted tooth, histopathological report

INTRODUCTION

Impaction of the teeth especially third molars is most common amongst young adults. Impacted mandibular third molars are commonly associated with pericoronal pathologies. In most cases, they are associated with a dentigerous cysts in since it is the most common developmental cyst of the jaw region.¹ Other pathologies related to impacted teeth are adenomatoid odontogenic tumor (AOT), pindborgs tumor, ameloblastoma and sometimes odontogenic keratocyst. Odontogenic keratocysts (OKCs) account for 11.7% of all jaw cysts worldwide, making them the third most common type of cyst in the jaws after radicular and dentigerous cysts.²

OKCs are characterized by aggressive behaviour and have a relatively high recurrence rate.²

The differential diagnosis may be explored by careful examination of the clinical and radiological findings.

OKCs originate in tooth-bearing regions, and they occur twice as often in the mandible as in the maxilla.² Some cases of OKC progress to the mandibular condyle; however, very few cases exist only in the condyle.² Differential diagnosis must therefore be executed in order to accurately identify the lesion.¹

This is a case report of a 25-year-old male patient presenting with a pain in left mandibular posterior region.

CASE REPORT

A 25-year-old male patient reported with mild pain in left mandibular posterior region since 8 days. The medical history was not significant. In dental history, patient had undergone extraction of 34, 35 before 8 years due to caries. On extra-oral examination no swelling was present. The intra-oral examination revealed the absence of the tooth 38 region. It did not show clinical signs of inflammation such as swelling or pain and the mucosa in that region was clinically normal.

An OPG (Figure1) revealed a well-defined unilocular radiolucent area associated with the impacted third molar and with sclerotic borders and scalloped margins along with thinning of lower border of mandible in left mandible extending anteroposteriorly from mesial of 36 to mid ramus region and superoinferiorly from alveolar crest to 0.5 cm above the lower border of mandible.



Figure 1: Panormic Radiograph (OPG)

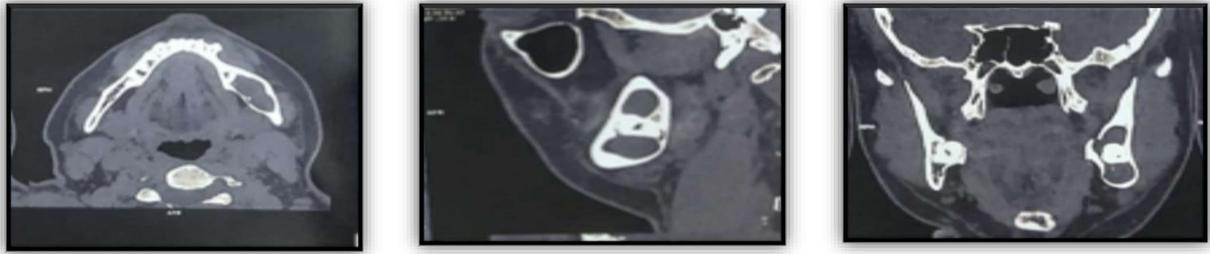


Figure 2: CT of left mandible showing various sections (a) Axial (b) Sagittal (c) Coronal

Additional finding of thinning of lingual cortical plate was seen in CT (Figure 2).

The clinic-radiographic features lead us to diagnose this as dentigerous cyst. As the lesion was smaller in size, total enucleation with chemical cauterization was planned under

general anesthesia. The surgical enucleation with curettage of the cyst associated to the impacted 38 was done (Figure 3). The patient was prescribed antibiotic and analgesic for 5 days duration to manage pain and infection of the operative zone.

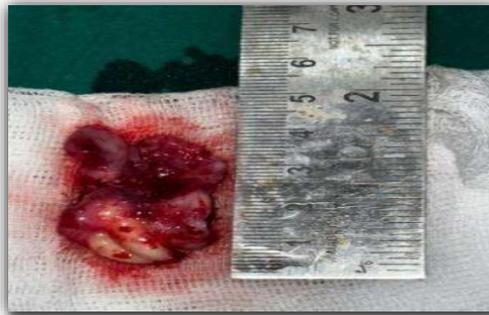


Figure3: Cystic lining with extracted tooth

The histopathological analysis showed parakeratinized corrugated uniform epithelial lining exhibiting palisading of basal cell layer. Underlying connective tissue showed collagen

fibers, fibroblasts, blood vessels and chronic inflammatory cells. Lumen showed keratin flakes. These features supported the diagnosis of OKC.

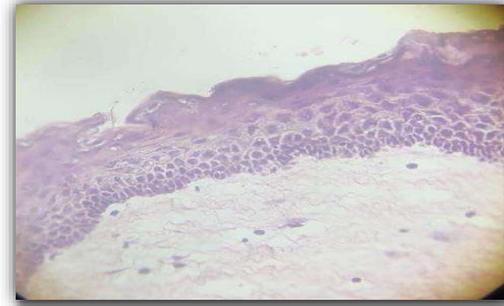


Figure4: Histopathological analysis (a)10X(b) 40X

DISCUSSION

Diagnosis of odontogenic keratocyst is highly crucial due to its aggressive behaviour and the frequency of recurrence after surgical treatment, which has been observed to happen at a rate between 2.5% and 62.5% and possible reasons for this high frequency of recurrence are a large amount of fibrinolytic activity in the cyst wall, increased mitotic activity, epithelial proliferation in connective tissue, and residual dental lamina with subsequent formation of new cysts.³ Due to high recurrence rate of OKC, histopathological confirmation via FNAC is mandatory prior to surgical removal to ensure accurate diagnosis and effective treatment.⁹

Diagnosis of keratocyst is often difficult because its clinical and radiographic signs are aspecific.⁴ Common radiographic features are unilocular or multilocular well circumscribed radiolucent lesions surrounded by a thin sclerotic border.⁴ While the multilocular variant lesions is difficult to differentiate from other odontogenic or nonodontogenic neoplasms like Ameloblastoma, odontogenic myxoma, pindborg tumoretc.⁴ The unilocular variant is also difficult to differentiate from other odontogenic or nonodontogenic cysts like periapical cysts, dentigerous cysts, lateral periodontal cysts, or paradental cysts.¹ However other benign and malignant lesions may present radiographically as pericoronal radiolucency associated with an impacted tooth, resulting in different treatment and prognosis outcome.¹⁰

Odontogenic keratocyst (OKC), was renamed as KOT by the World Health Organization in 2005 since then it has been reclassified as benign epithelial odontogenic tumor to better account for its clonal nature and high recurrence rate.^{5,8} Currently, there is ample proof that the molecular and genetic alteration that affects odontogenic keratocysts may affect their biological behaviour also.⁷ Actually relapse rate of KOT can be related to the expression of specific biological markers in the epithelial cells, the epithelial-mesenchymal transition cells layer and in the fibrous capsule.⁶ In our case, initial radiographic analysis and the position of the lesion related to the impacted mandibular third molar and also the age caused us to diagnose the lesion as dentigerous cyst.

CONCLUSION

Pericoronal radiolucent lesions are relatively common radiologic findings that are in many cases related to impacted mandibular third molar tooth. Mandibular ramus and molar area is well known to be a suspected area of many benign odontogenic lesions hence every third molar site should be carefully evaluated with extraoral radiographs so as to avoid skipping of any hidden associated aggressive lesions like odontogenic keratocyst or ameloblastoma. Also histopathological investigations through FNAC or incisional biopsy should be made mandatory prior to surgical intervention to help decide the treatment plan and avoid the chances of recurrence.

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Conflicts of Interest

None

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