

DIAGNOSTIC DILEMMA IN ODONTOGENIC KERATOCYST MIMICKING DENTIGEROUS CYST: A CASE REPORT

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Abstract:

Impacted mandibular third molars are commonly associated with pericoronal radiolucencies. Dentigerous cyst is the most common developmental cyst of the jaw. Ameloblastoma, Dentigerous cyst and Odontogenic keratocyst have similar clinical and radiographic features but they differ in histopathological features and treatment modalities. This article presents the case of a 35-year-old male patient with complaint of mild pain and swelling, posteriorly in mandibular right quadrant. On clinical and radiographic examination the diagnosis was Dentigerous cyst but on aspiration cytology it was suggestive of Odontogenic keratocyst. Pericoronal radiolucencies are relatively common in most cases related to impacted mandibular third molars therefore it should be carefully evaluated with respect to clinical, radiographic and histopathological aspects.

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INTRODUCTION:

Pericoronal radiolucencies are common radiographic signs in relation to impacted mandibular third molars. In most cases, they are associated to Dentigerous cysts since it's the most common developmental cyst of the jaw region.^[1] Pericoronal radiolucencies associated

with the impacted mandibular third molars may have identical clinical and radiographic features, although they have different histopathological aspects, biological behavior, and management. This is true for dentigerous cyst, ameloblastoma and odontogenic keratocyst. The differential diagnosis may be explored

by careful examination of the clinical and radiological findings.

A radiolucent lesion, located in the mandibular posterior area, can be more or less aggressive in nature. Differential diagnosis must therefore be executed in order to accurately identify the lesion. [2]

We report a case of a 35-year-old male patient presenting with a mild pain and swelling in the mandibular posterior right side region.

Case Report

A 35-year-old male patient was reported with mild pain and swelling in the mandibular posterior right side since 3 months duration. The medical history was not significant. The Extra-oral evaluation showed mild swelling in relation to mandibular posterior right side region.

The intra-oral examination revealed the absence of the tooth 48 region. It did not show clinical signs of inflammation such as swelling or pain and the mucosa around the tooth site was clinically normal.

An IOPA revealed a well-defined radiolucent area associated with the right third molar [Figure 1], Panoramic radiograph (OPG) view evidenced a well-defined radiolucent lesion attached with the crown and root of the mandibular right third molar tooth. [Figure 2],.

The clinical and radiographic features lead us to diagnose this as dentigerous cyst pathology. Aspiration biopsy was performed which revealed a cheesy aspirate [Figure 3] which led us for the suspicious diagnosis of keratocyst. As the lesion was smaller in size, total enucleation with chemical cauterization with carnoys solution was planned under general anesthesia. The surgical enucleation with curettage of the pathology associated to the impacted 48 extraction was done [Figure 4]. The patient was prescribed antibiotic amoxicillin+clavulanic acid, analgesic and chlorhexidine mouth wash for 5days duration to manage pain and infection of the operative zone.

The histopathological analysis showed that the cystic lumen filled with keratin, having lining epithelium of stratified squamous cells with corrugations. The lining of 6-8 cells thick associated with the fibrous capsule showing few satellite cysts and is composed of fibrous stroma and few blood vessels [Figure 5]. These features supported the diagnosis of OKC. The patient had uneventful postoperative Recovery and showed satisfactory bone healing in the followup period.

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. Diagnosis of keratocyst is often difficult because its clinical and radiographic signs are aspecific. Common radiographic features are unilocular or multilocular well circumscribed radiolucent lesions surrounded by a thin sclerotic border.^[2] While the multilocular variant lesions is difficult to differentiate from other odontogenic or nonodontogenic neoplasms like ameloblastoma, 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.

However other benign and malignant lesions may present radiographically as pericoronal radiolucency associated with an impacted tooth, resulting in different treatment and prognosis outcome. The differential diagnosis of pericoronal radioluculent lesions associated with impacted mandibular third molars should include keratocystic odontogenic tumor, unicystic ameloblastoma, solitary bone cyst, odontogenic epithelial calcified tumor, and in rare cases intraosseous squamous cellcarcinoma.

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.^[3] Currently, there is ample proof that the molecular and genetic alteration that affects

odontogenic keratocysts may affect their biological behaviour also. Actually Relapse rate of KOT can be related to the expression of specific biological markers in the epithelial cells, in the Epithelial-mesenchymal transition cells layer and in the fibrous capsule.^[4]

In our case, initial radiographic analysis and the position of the lesion related to the third mandibular tooth caused us to mistakenly diagnose lesion as dentigerous cyst. We were only able to find the cyst as an OKC rather than a dentigerous cyst after histological evaluation only. From a histological perspective, there are many differences between the two types of 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.

Source of Funding

None.

Conflicts of Interest

None.

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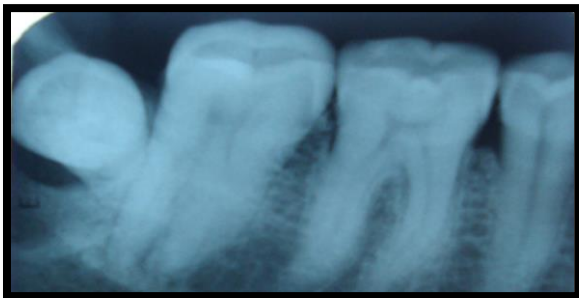


Figure 1: IOPA revealed a well-defined radiolucency associated with the right third molar

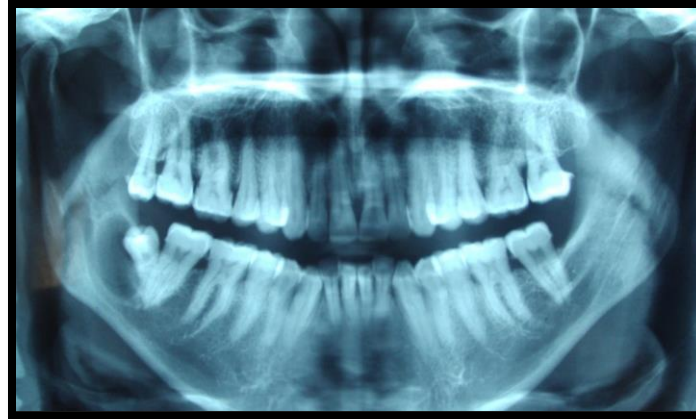


Figure 2: Panoramic radiograph (OPG)



Figure 3: Aspiration biopsy revealed a cheesy aspirate

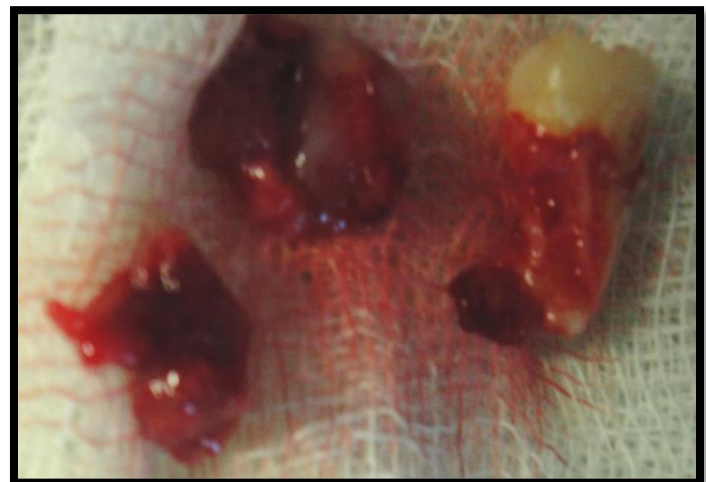


Figure 4: Cystic lining with extracted tooth



Figure 5: Histopathology slide showing the cystic lumen filled with keratin and lining of stratified squamous epithelium