Case Report

Odontogenic keratocyst in anterior Mandible: An interesting case report

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ABSTRACT

Odontogenic keratocyst (OKC) is a common developmental odontogenic cyst affecting the maxillofacial region that arises from the dental lamina. The OKC is distinctive among jaw cysts given its tendency toward recurrence and aggressive clinical behavior. This article presents a case of OKC in the anterior mandible and a review of diagnostic aids and different treatment modalities.

Key words: Anterior mandible, enucleation, odontogenic keratocyst,

INTRODUCTION

The term odontogenic keratocyst (OKC) was first used by Philipsen in 1956.[1] It is one of the most aggressive odontogenic cysts of the oral cavity. OKC is known for its rapid growth and its tendency to invade the adjacent tissues including bone.[2,3] KeratoCystic Odontogenic Tumor(KCOT) in the jaws arise from the cell rests of dental lamina and are usually seen during the second to fourth decades of life with a slight male predilection. The majority of patients are in the age ranges of 20-29 and 40-59 years,[4] but cases ranging from 5 to 80 years have been reported.[5] A total of 70% to 80% keratocysts are most commonly found in the lower jaw in the angle between jaw and mandibular branch and in the maxilla in the area of the third molar.[1-3] Growth is chiefly in the anteroposterior dimension, and the lesions may attain remarkable size without significantly deforming the jaw skeleton. The particular tendency to rapid growth is due to the higher activity of the epithelial cells of the cyst lining, stimulating osteolytic activity of prostaglandin substances in the cell population of the cyst lining and the higher accumulation of hyperkeratotic scales in the lumen of the cyst, resulting in greater difference in hydrostatic pressure.

CASE REPORT

A 31-year-old male patient reported to the Department of Dental Surgery in MGM Government Hospital, Trichy, with the chief complaint of pus discharge in the chin region for the past 4 months. Patients' general condition was normal. On extraoral examination, a diffuse swelling was noted in the lower jaw region extending right side of the parasymphysis to the left side. The swelling is soft, fluctuant, tender on palpation and extraoral sinus opening present on the left parasymphysis region with pus discharge. On intraoral examination, there is a diffuse swelling extending from distal surface of 35 to the distal surface of 45 with the obliteration of the vestibule. Retained

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deciduous teeth 73 and 83 were noted; 33 and 43 were clinically missing. Grade II mobility was present in 35, 34, 32, 31, 41, 42, and 44. Gross displacement of 34, 35, and 44 was also noted [Figure 1].

Panoramic radiograph revealed multilocular radiolucent area extending from 37 to 47 region with well-demarcated borders. Thinning of cortical bone along with cortical expansion in mid-symphysis region was noted. Impacted 33 and 43 was noted. Resorption of root 34 was also noted [Figure 2]. CT scan mandible revealed an osteolytic lesion with buccal and lingual cortical plate expansion, and there is discontinuity of cortical plate in left parasymphysis region [Figure 3].

Fine Needle Aspiration Cytology(FNAC) was performed using 24-gauge needle attached to a 10-mL syringe. Aspirate was creamy white suspension with keratin flakes. Smears showed scattered mature and degenerated squamous cells and rare inflammatory cells in a necrotic background.

Intraosseous biopsy was done to obtain a slice of soft tissue along with the overlying bone. The histopathologic report revealed a cystic lining with orthokeratin layer, stratified squamous cells of 6-8-cell thickness, and focal granular layer was noted. Stroma was congested. No daughter cyst or epithelial detachment noted. The histological findings were suggestive of OKC [Figure 4].

Under general anesthesia, through intraoral incision, the mass was exposed. Enucleation of the lesion and removal of the involved teeth were accomplished. Soft tissues adhering to the capsule of the lesion in the buccal fenestration were also removed [Figure 5]. Then, peripheral ostectomy of the whole surgical bed was completed, followed by a single application of Carnoy's solution. The thinned out inner cortical lining of the bone was removed. The lesion contained white, cheesy material. The multilocular cystic lesion was sent for histopathologic examination.

Histopathologic evaluation revealed cystic lining with hyperplastic squamous cell with mild hyperparakeratosis and acanthosis. Stroma was congested with focal inflammatory cell infiltration. The fibrous connective tissue wall exhibited cholesterol clefts and "daughter cysts," which are considered characteristic of OKC found [Figure 6].

DISCUSSION

OKC is a common developmental odontogenic cyst, and its biologic behavior is similar to a benign neoplasm.[6] Therefore, in the latest WHO classification of odontogenic

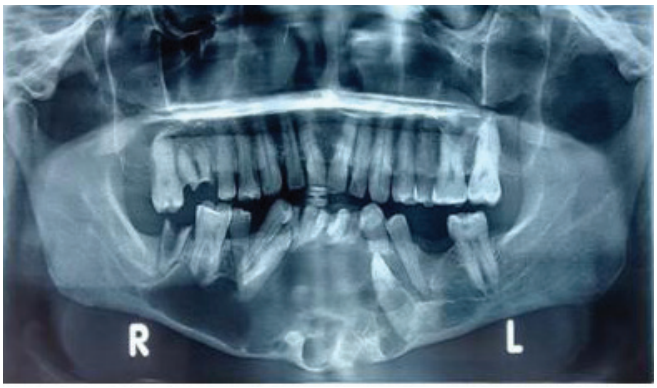

Figure 1: (a and b) Clinical presentation: extraoral and intraoral images.

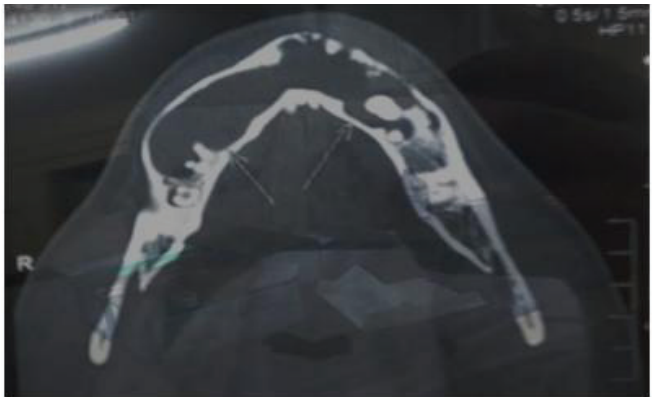

Figure 2: Panoramic radiograph showing multiple unilocular radiolucency.

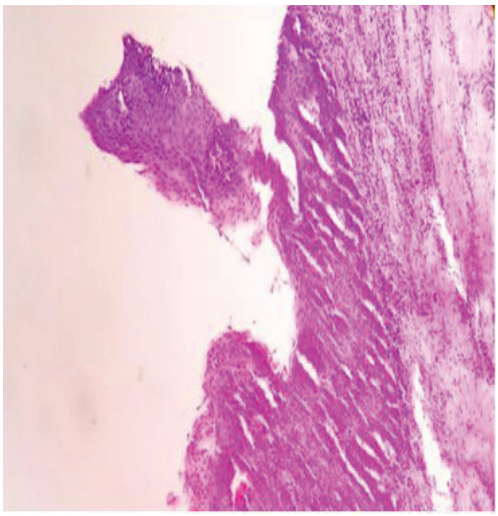

Figure 3: CT scan showing cortical bone expansion.

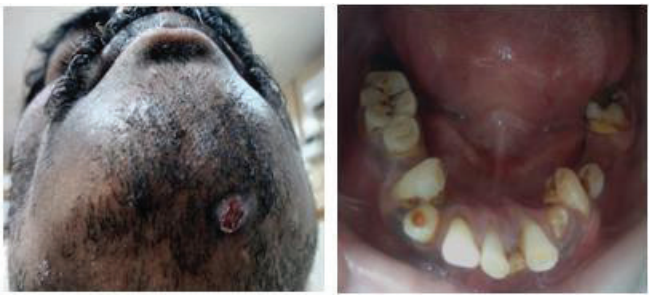

Figure 4: Preoperative intraosseous histological picture.

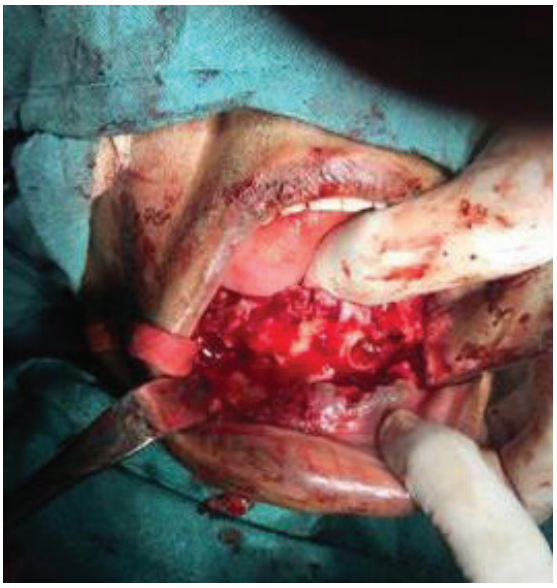

Figure 5: Intraoperative photograph of mandible after cyst enucleation.

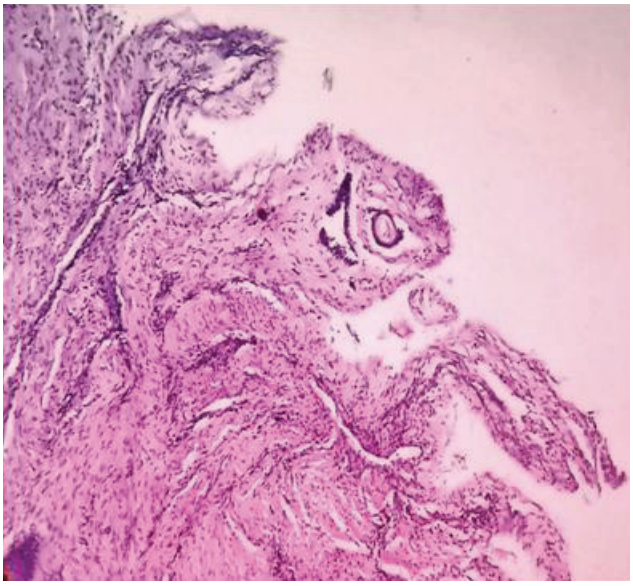

Figure 6: Postoperative histological image.

tumors in 2005, it has been given the term keratocystic odontogenic tumor.[7] OKCs are generally thought to be derived from either the epithelial remnants of the tooth germ or the basal cell layer of the surface epithelium.[8-9]

KCOT may be found in any age, with peak the prevalence between the age 10 and 40 years.[9] The mandible is involved in 60% to 80% of cases with a marked tendency to occur in the posterior body and ascending ramus.[10] However in this case, the lesion was present in anterior mandible associated with impacted canine and involving contralateral jaw bone. Small OKCs are usually asymptomatic, but larger ones may show clinical manifestations such as pain, swelling, or drainage.[11] Radiologically, KCOTs demonstrate a well-defined radiolucent area with smooth and often corticated margins and may be unilocular or multilocular. In 25% to 40% of cases, an unerupted tooth is seen in association with the lesion.[10] The diagnosis of OKC is based on the histopathologic features. The radiographic findings, although often highly suggestive, are not diagnostic.

Therapeutic interventions of KCOT include marsupialization and enucleation, combined with adjuvant cryotherapy with Carnoy's solution, and marginal or radical resection.[8] OKCs/KCOTs are characterized by high tendency to postoperative recurrence (30%-60%). Causes of high recurrence rates include incomplete removal, remnants of dental lamina, and presence of daughter/satellite cysts within the cyst wall.[12] Because recurrence may be long delayed in this lesion, follow-up of any case of OKC with annual radiographs is essential for at least 5 years after the surgery.

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Conflicts of interest
There are no conflicts of interest.

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