Case Report

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OKC as an Accidental Finding: A Case Report

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ABSTRACT

Background: The term odontogenic keratocyst (OKC) was first used by Philipsen in 1956. OKC has been characterized by aggressive Conservative treatments have a risk of higher recurrence rate, but preserve the anatomical structures. The recommended treatment of OKC includes peripheral ostectomy, chemical curettage with modified Carnoy's solution, or en bloc resection. This article reports a case of large OKC of posterior mandible.

Keywords: Odontogenic keratocyst, Mandible, modified Carnoy's solution.

INTRODUCTION

The term odontogenic keratocyst (OKC) was first used by Philipsen in 1956. [1] OKC has been characterized by aggressive or destructive behaviour and propensity to recurrence, comprises of a unique pathological entity. The World Health Organization (WHO) reclassified this lesion in 2005 as a KCOT, [2, 3] and defined it as "a benign uni- or multicystic intraosseous tumor of odontogenic origin, with a characteristic parakeratinised stratified squamous epithelium lining and is usually potentially aggressive, with distinct infiltrative behavior. It may be solitary or multiple. Multiple OKC's have usually been associated with various syndromes including inherited nevoid basal cell carcinoma syndrome (NBCCS)," ICD-O code 9270/0. [3] Longstanding KCOTs have been reported to transform into primary intraosseous carcinoma (PIOSCC) or an ameloblastoma.[4]

CASE REPORT

A 29-year-old male reported to the department with the chief complaint of a pain over right lower back tooth region since 10 days. Pain was sudden on onset, mild to moderate in intensity, non-radiating, aggravated on chewing and relieved on taking medication in the form of tablets for which patient does not remember the name. There was no associated history of swelling, fever, or pus discharge. Patient could not recollect any past history of trauma.

On examination, no gross facial asymmetry or neurosensory deficit was elicited. (Fig 1 & 2)

Fig 1: Extraoral photograph.

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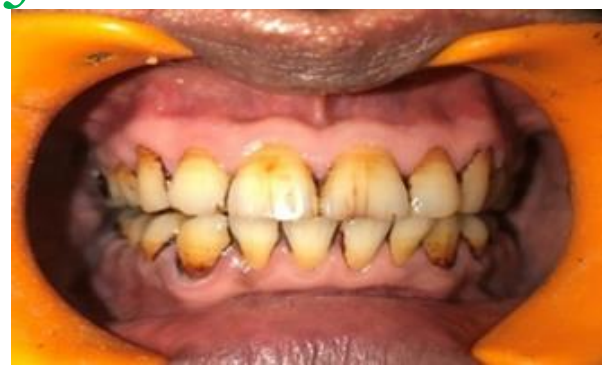

Fig 2: Intraoral photograph.

Right and left submandibular lymph nodes were palpable and his mouth opening was restricted approximately 35 mm. Patient's 38 and 48 were clinically missing. There was no obliteration of the buccal and lingual vestibule in 37 region and the mucosa appeared intact. On palpation, mild expansion of the buccal and lingual cortical plates were evident immediately distal to 37 but the area was non-tender. There was no mobility of the adjacent teeth. (Fig 3 & 4)

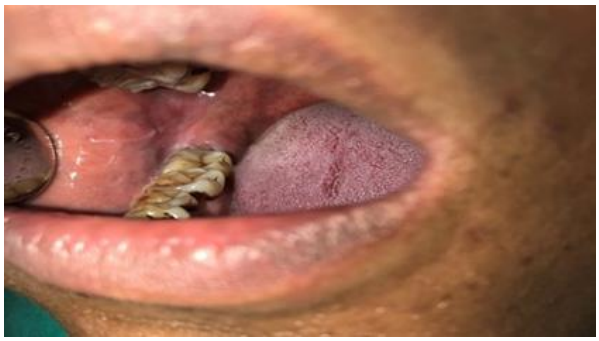

Fig 3: Left intraoral photograph.

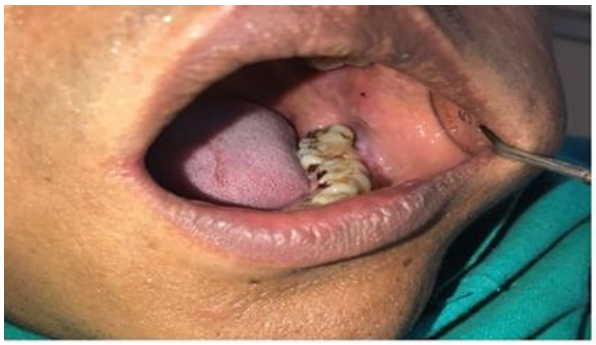

Fig 4: Right intraoral photograph.

Panoramic radiograph (OPG) revealed a well-defined unilocular radiolucency involving the distal aspect of 37. The radiolucency measured approximately 2 cm × 1 cm in its largest dimensions and was irregular in shape with well corticated scalloped borders. Antero-posteriorly, it extended from the distal aspect of 37 to the coronal portion of 38. Supero-inferiorly, it extended from the anterior border of the ramus of the mandible to the inferior border of the mandible. Within the radiolucency, some evidence of internal septa and impacted 38 were present in an inverted pattern. Inferior alveolar nerve was traceable and was involved in the lesion distal to 37. (Fig 5)

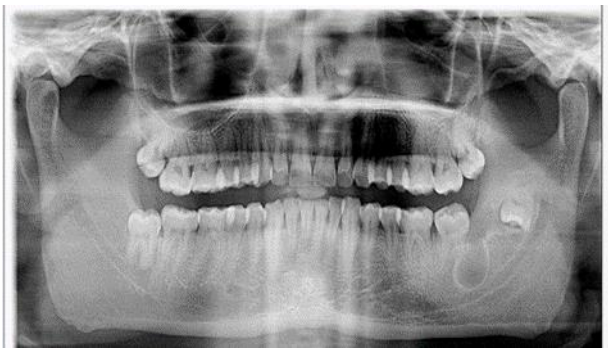

Fig 5: OPG.

Fine-needle aspiration cytology (FNAC) of the lesion did not yield any exudate. CBCT Cone Beam Computed tomography was performed which demonstrated no expansion of the buccal and lingual cortical plates and the extension of the lesion anteroposteriorly. The inferior alveolar nerve was intact. Varying values of Hounsfield units were noted within the osteolytic area. Differential diagnosis based on radiology was made of KCOT and ameloblastoma. Exploratory surgery was recommended and informed consent was obtained. (Fig 6)

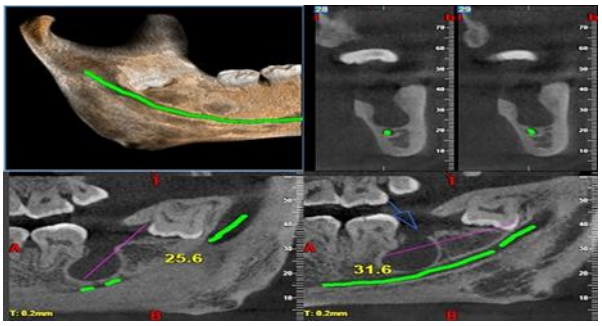

Fig 6: CBCT irt 37, 38.

The patient was treated under general anesthesia. A modified T ward incision was given extending from the mesial aspect of 36 extending to the distal aspect of 37 with the posterior limb of the incision

extending to the anterior border of ramus of mandible. A full-thickness mucoperiosteal flap was elevated to gain access to the involved area. The cyst with its contents was evident over the distal aspect of 37, bone around the cystic lining was removed to gain complete access to the cystic lining also involving the cyst around 38 region. Enucleation in relation to the cyst was done and the obtained cheese like material and was sent for histopathologic examination. The area was then treated with modified Carnoy's solution. The bony defect was thoroughly debrided until it bled. The walls were decorticated using a vulcanite bur. Surgical removal of 38 was also performed at the same time. (Figure 7, 8 & 9).

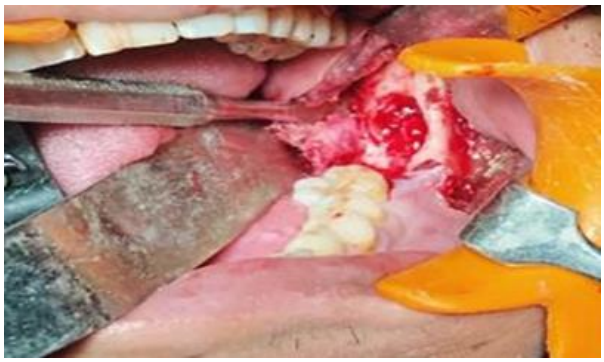

Fig 7: Exposure of the cystic lesion.

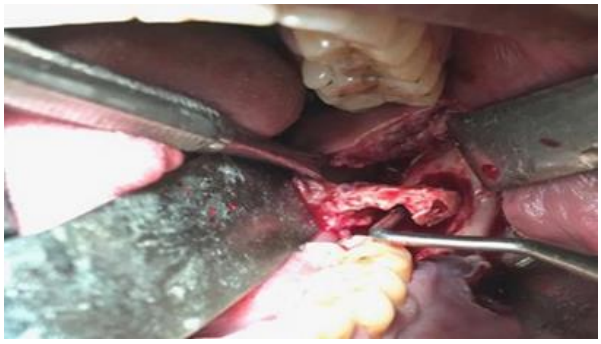

Fig 8: Exposure of the cystic lining.

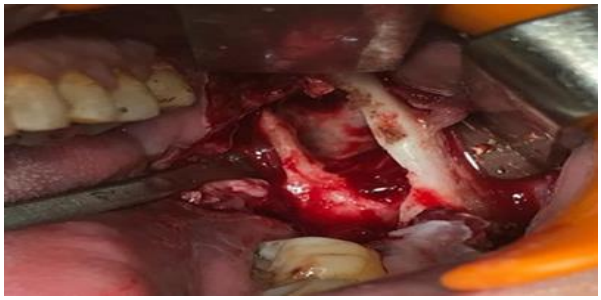

Fig 9: Post Removal of cystic lining and treatment with.

The flap was replaced and sutured using simple interrupted sutures of 3-0 vicryl, and primary closure was achieved. The patient was put on post of antibiotics as Inj Monocef (Ceftriaxone 1gm), Inj Metrogyl 500 mg and Inj voveron 75 mg along with written and oral instructions. He was prescribed 625 mg Tab Augmentin (Amoxcillin 500 mg and Clavulinic acid 125 mg), 3 times a day for 5 days and 0.12% chlorhexidine rinse twice a day for 7 days. Uneventful healing was seen and, at the 3-month recall appointment, results were satisfactory.

Histopathologic evaluation disclosed parakeratinised stratified squamous cystic lining overlying fibrocellular connective tissue capsule. The cystic lining was 6 – 10 cells in thickness with flattened epithelial connective tissue interface. The basal cells are columnar with hyperchromatic nuclie in palisaded arrangement. The lining also shows surface corrugation with keratin flecks in cystic lumen. The connective tissue capsule is fibrocellular with thick and thin bundles of collagen fibres, fibroblasts and blood vessels in varying sizes. Mild chronic inflammatory infiltrate composed of lymphocytes is also seen, marking the histopathological characteristic of OKC.

At 9 months follow-up, the area was completely healed and probing depths were normal. The patient reported that he was comfortable. Radiographic examination showed normal radiopacity from various angles and no evidence of recurrence.(Fig 10)

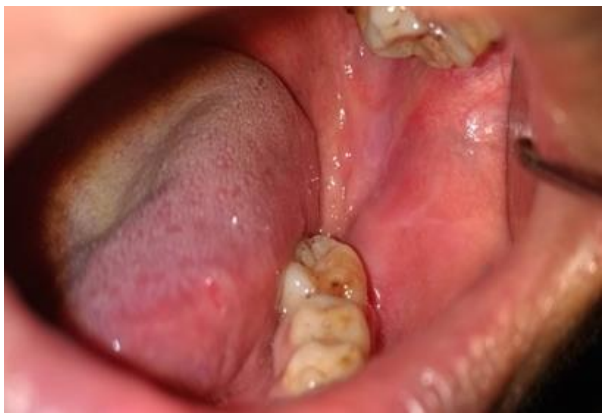

Fig 10: clinical site after 9 months follow up.

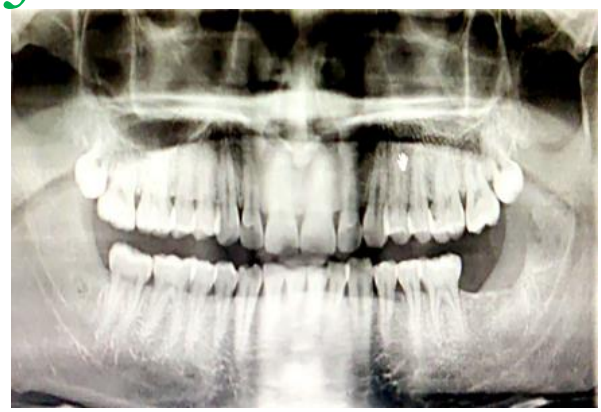

Fig 11: OPG depicting 9 months follow up.

DISCUSSION

OKC is found more frequently in the posterior part of the mandible and anterior maxilla, especially in the canine regions [5] as reported in our case. It may mimic other lesions, making it difficult to diagnose based on clinical and radiographic information alone [6] as it may mimic dentigerous cyst if related to an impacted tooth. It has a high rate of recurrence, with reports ranging from 20% to 60% [6]. Complete surgical excision of the cyst is the treatment of choice.

Radiographically, OKCs can appear either as a unilocular or multilocular lesions [7]. Small unilocular cysts can be mistaken as periapical cyst, dentigerous cyst, lateral periodontal cysts or gingival cysts, and larger can mimic ameloblastomas [8]. The pathognomonic histological feature of OKC: the cystic cavity is lined with a thin layer of connective tissue covered by ortho or parakeratinized stratified squamous epithelium.

OKC in the mandibular third molar area has been reported quite frequently and is usually related with presence of swelling and pain in the involved area. In our case, the cyst did not show any osseous defect and was also not accompanied by soft tissue swelling.

Non erupting third molars are the most common involved sites for dentigerous cyst and are common in young adults, some of these cases are diagnosed clinically but others histologically from biopsied specimens. They may include bone involvement and may cause displacement of teeth and may even lead to the resorption of roots. The bony involvement follows an antero-posterior pattern of spread of the lesion.

OKCs are most often located in the mandibular third molar regions, but may occur anywhere in the jaws. OKC has also been reported in gingival soft tissues[13]. Radiographically, OKCs appear as a round or ovoid radiolucency, which may be multilocular. Diagnosis of the unilocular cystic lesions is based on histopathological reports.

Dentigerous cysts, ameloblastomas, radicular cysts, simple bone cysts, and central giant cell granulomas need to be differentiated from KCOT.[9] Morgan and colleagues categorize the surgical treatment methods for KCOT as conservative and aggressive. The conservative treatment modalities includes enucleation, with or without curettage, or marsupialization. Conservative treatments have a risk of higher recurrence rate, but preserve the anatomical structures.[24] The recommended treatment of OKC includes peripheral ostectomy, chemical curettage with Carnoy's solution, or en bloc resection.[10]

Marsupialization and enucleation, combined with adjuvant cryotherapy with Carnoy's solution, and marginal or radical resection are the various therapeutic interventions of KCOT include

The average reported recurrence rate ranges from 30 to 62%. One of the suspected contributing factors for the high recurrence rate or presence of satellite cysts in the cyst wall is the presence of residual epithelium or an epithelial remnant after the treatment.[11]

If the cyst is infected, inflammatory cells are present. They may also contain cholesterol clefts, as in the case described above. OKCs tend to recur, especially the parakeratinized type. Due to this, continued regular examination of the patient is recommended.

In our case, at 9 months recall the patient was completely asymptomatic.

CONCLUSION

OKC though a common occurrence amongst the cysts seldom remain asymptomatic because of its aggressive nature. Various treatment protocols have been designated to avoid the recurrence. Proper

follow up to eliminate the presence and absence of the recurrence stands as a key factor for the clinician.

CONFLICTS OF INTEREST

The authors declare they have no potential conflict of interests regarding this article.

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