



ODONTOGENIC KERATOCYSTIC TUMOR- A CASE REPORT

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ABSTRACT

Odontogenic keratocysts (OKCs) are benign, they are often locally destructive and tend to recur after conservative surgical treatment. They must therefore be distinguished from other cysts of the jaw. Keratocysts have multiple daughter cysts, with high potential increased mitotic activity epithelium due to that recurrence rate of OKC is usually high, delicate epithelium lining which is difficult to remove in toto is also the one of the reason of high recurrence rate of OKC. The cyst usually behave like tumor growth hence its also called as Keratocystic odontogenic tumour (KCOT).

KEYWORDS: Keratocystic odontogenic tumor (KCOT), odontogenic keratocyst, radicular cyst, multi locualr appearance, recurrence rate.

INTRODUCTION

First described by Philipsen in 1956,¹ the odontogenic keratocyst (OKC) is now designated by the World Health Organization (WHO) as a keratocystic odontogenic tumour (KCOT) and is defined as "a benign uni- or multicystic, intraosseous tumour of odontogenic origin, with a characteristic lining of parakeratinized stratified squamous epithelium and potential for aggressive, infiltrative behaviour. WHO "recommends the term keratocystic odontogenic tumour as it better reflects its neoplastic nature."¹ KCOTs are thought to arise from the dental lamina and associated with impacted teeth. Multiple odontogenic keratocysts are a feature of nevoid basal cell carcinoma syndrome. Odontogenic Keratocysts are derived from the remnants of the dental Lamina.

However main features of OKCS were described in 1963 by Pindborg and Hansen.⁴

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. It has a high recurrence rate and is associated with the basal cell nevus syndrome.²

Male to female ratio of 1.6:1, except in children. OKCs may occur in any part of the upper and lower jaw, with the majority occurring in the mandible, most commonly in the angle of the mandible and ramus.² The OKC involves approximately 11% of all cysts in the jaws and is most often located in the mandibular ramus and angle. This lesion can be associated, although not in all cases, with an impacted third molar. Radiographically, it appears as a unilocular or multilocular lesion with a scalloped border.³

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Radiographically, OKCs demonstrate a well-defined unilocular or multilocular radiolucency with smooth and often corticated margins. OKCs tend to grow in an anteroposterior direction within the medullary cavity of the bone without causing obvious bone expansion. Displacement of teeth adjacent to the cyst occurs more frequently than resorption. OKCs of the maxilla are smaller in size compared to those of the mandible. When they are large, they tend to expand bone.³

CASE REPORT

A 34 years old female patient reported to the Dept. of Oral Medicine and Radiology on 19/7/2011 with a complaint of mild solitary swelling in the lower right posterior region of her face since the last 2-3 months.(fig. 1) No significant medical, dental / habit history reported.

Patient was apparently asymptomatic 6 months back, following which she experiencing mild pain and swelling in lower right posterior region of her face. Patient reports increase in the size of the swelling twice during this period and experiencing pain only during that time.

Clinical evaluation revealed single extra oral, non tender swelling in the right mandibular region. Mandible: mild swelling over right side angle of the mandible
Inspection: Site- right side angle of the body of mandible, Size-1x1.5 cm, Overlying skin is normal
On Palpation, border:-well defined, Consistency – firm, tenderness- absent.

Single, extra oral, non tender mild swelling present in the right mandibular angle region about 1x1.5 cm in diameter extending mesiolaterally. Drainage of slight purulent exudates from 47.

Clinical Diagnosis

Dentoalveolar abscess in relation with 47.
Class I caries in 46,36, 28.

Differential Diagnosis:- a) Odontogenic keratocyst b) Ameloblastoma.

Investigations Required Pulp vitality of 47.

OPG
Lateral oblique radiograph of right side of the mandible
Computed tomography of mandible
Aspiration cytology
Incisional biopsy

Results of Investigations: Aspiration yielded thick cheesy aspirate. Histopathological evaluation of aspirate shows 'infected odontogenic cyst (fig 3). Histopathological evaluation of cystic lining was suggestive of Odontogenic keratocyst (report attached)(fig 4).

Interpretation of Radiographs

Radiograph made

1) OPG

Teeth present-11-17,21-28,31-37,41-47
Multilocular radiolucency present in the right mandibular body and ramus region about 5x 3.5 cm in diameter associated with 46,47 ,extending from distal to root of 46 to the ascending ramus reaching up to the condyle and coronoid process but not involving the process. Borders are well defined well corticated and scalloped. Internal structure shows thin curved internal septa giving multilocular appearance.(fig. 2)

2) CT imaging

Well defined expansile cystic lesion in the ramus of the right angle of mandible, measuring app.3.7x2.4 cm in its maximum axial dimension, thinning of cortices noted with undulating margins and presence of septum.(fig 5)

Intraoral examination revealed no cortical plate expansion, with mild tenderness on percussion in relation with 47.Imaging investigations revealed multilocular radiolucency present in the right mandibular body and ramus region associated with 46,47, extending from distal to root of 46 to the ascending ramus reaching upto the condyle and coronoid process, borders are well defined and well corticated and scalloped.

Internal structure shows thin curved internal septa giving multilocular appearance.(fig. 2)

Based on the clinical, radiographic and histopathological presentation, a final diagnosis of Odontogenic keratocyst of right mandibular region was made.

Immediate treatment: not required

Pharmacological treatment: Tab Cefadur 500mg 10 tab for 5 days

Tab Diclomol 6 tab for 3 days

Planned treatment

1) Preventive phase

Patient education and counselling regarding the lesion

2) Restorative phase

Composite restoration in 46,36,28

3) Surgical phase

Right mandibular resection, followed by grafting procedure

4) Maintenance phase

Regular follow –up.

DISCUSSION

The KCOT is one of the most aggressive odontogenic tumours due to its relatively high recurrence rate, its relatively fast growth, and its tendency to invade adjacent tissues. Scharfetter et al. demonstrated both slowly and rapidly proliferating areas in different parts of the KCOT epithelium and the connective tissue wall.^[4] He suggested that the invasive growth of KCOT probably resulted from active growth of the connective tissue wall. Other possible explanations for its high recurrence are, increased mitotic activity epithelial proliferation in connective tissue, and residual dental lamina with subsequent new cyst formation. The bone resorption by the cyst is mediated by activation of osteoclast-like cells and/or biologically active collagenases.^[5]

OKCS are locally destructive jaw lesions and must be distinguished from other jaw cysts.

The diagnosis of the lesion can be confirmed by histopathological examination. Histologically in our case

epithelium is derived from the connective tissue and is stratified squamous in nature. It appears convoluted with abundant orthokeratin flakes in to lumen. Numerous daughter cysts are seen in whorls filled with keratin.(fig. 4)

OKCS frequently recur after enucleation, particularly within first 5 years.^[5] Parakeratinised OKCS have higher

recurrence rate than orthokeratin, hence complete enucleating of the keratocyst including adjacent teeth decreases the recurrence rate.^[5]

Here as the size of the lesion, location, involvement of the cortical bone, and presence of important anatomical structures in close proximity to the lesion right mandibular resection with grafting procedures was done.



Figure 1 Mild swelling over the right side of the angle of the mandible.



Figure 2: Multilocular radiolucency present in the right mandibular body and ramus region about 5x 3.5 cm in diameter associated with 46,47, extending from distal to root of 46 to the ascending ramus reaching up to the condyle and coronoid process but not involving the process. Borders are well defined well corticated and scalloped. Internal structure shows thin curved internal septa giving multilocular appearance.



Figure 3 Aspiration cytology

Aspiration yielded thick cheesy aspirate. Histopathological evaluation of aspirate shows 'infected odontogenic cyst.

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NAME: Mrs. G. G. Sujata	BIOPSY NUMBER: H-120/11
AGE & SEX: 33/F	TYPE OF BIOPSY: INCISIONAL
ADDRESS: Pune	
REFD By: Dr. Josshi, OMFS	DATE: 28.09.2011

Block received.

HISTOPATHOLOGY REPORT

The given H and E stained section shows epithelium and connective tissue. The epithelium is displaced from the connective tissue and is stratified squamous in nature. It appears convoluted with abundant keratin flakes into the lumen. The connective tissue shows epithelial rests at places. Numerous daughter cysts are seen in whorls filled with keratin. Connective tissue is highly inflamed showing increased vascularity and plenty of inflammatory cells, chiefly lymphocytes and plasma cells.

The overall picture is suggestive of-

"INFECTED ODONTOGENIC KERATOCYST"

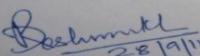
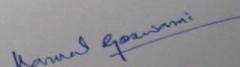
 Signature of the Staff in charge	 Signature of the HOD	 Signature of the P.G student
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Figure 4 Histopathological report



Figure 5 Well defined expansile cystic lesion in the ramus of the right angle of mandible, measuring app.3.7x2.4 cm in its maximum axial dimension, thinning of cortices noted with undulating margins and presence of septum.

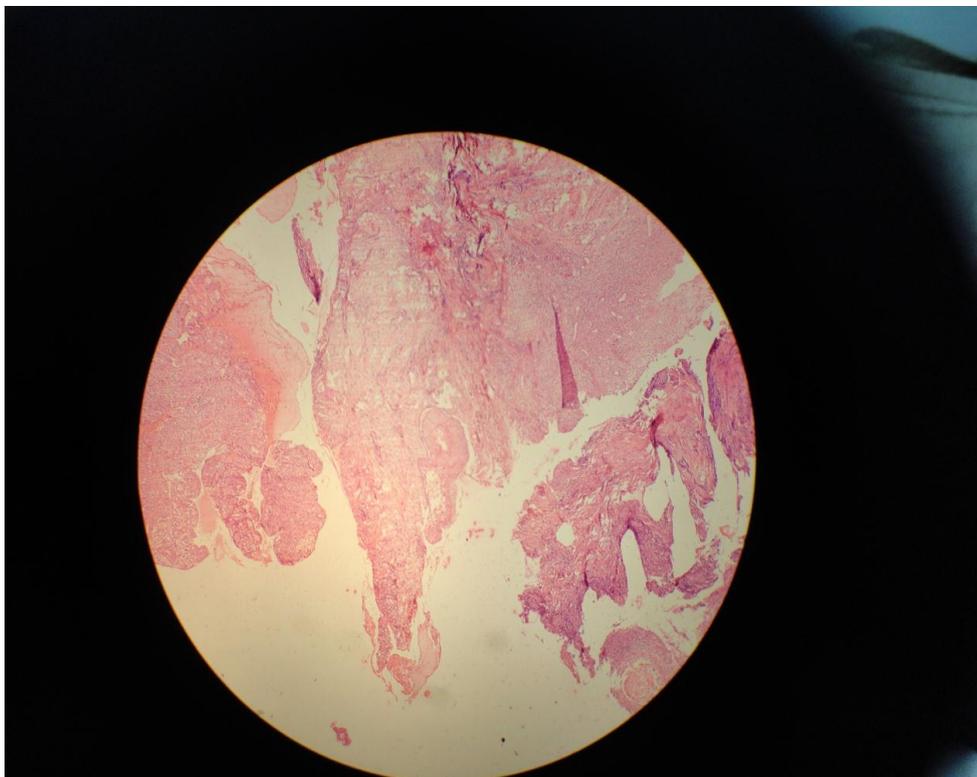


Figure 6: Histopathological slid.



Fig. 6: Intra oral photograph 15 days after surgery showed uneventful healing.

CONCLUSION

OKCS usually have lot of controversy in the management and diagnosis, in treatment procedures. Clinically most of the OKCS do not shows cortical plate expansion, or obvious large swelling.

Recurrence is usual challenge for the management, because of its increased mitotic activity, numerous satellite daughter cysts, parakeratinized epithelium.

Here in our case as the size of the lesion, location, involvement of the cortical bone, and presence of important anatomical structures in close proximity to the lesion right mandibular resection with grafting procedures was done.

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