CASE REPORT

ODONTOGENIC KERATOCYST IN RIGHT MAXILLA: A CASE REPORT

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INTRODUCTION

The odontogenic keratocyst is well known for its high recurrence rate, aggressive behavior and defined histopathological features. It's occurrence in the maxilla is unusual and its appearance in the maxillary sinus very uncommon. This article reports a case of odontogenic keratocyst in relation to right maxilla and its surgical management.

Keywords: *OKC- odontogenic keratocyst*

CASE REPORT

A patient aged 65 years reported to our clinic with the chief complaint of missing teeth i.r.t right maxilla and the patient wanted the missing teeth to be replaced with implants. The patient was asymptomatic and appeared to be in good health. On oral examination 16 and 17 were missing and the ridge area seemed to be normal. History of dental of implant with respect to 14 and 15 done 3 years back. IOPAR of 16 and 17 region showed ill- defined radiolucency (Fig 1).

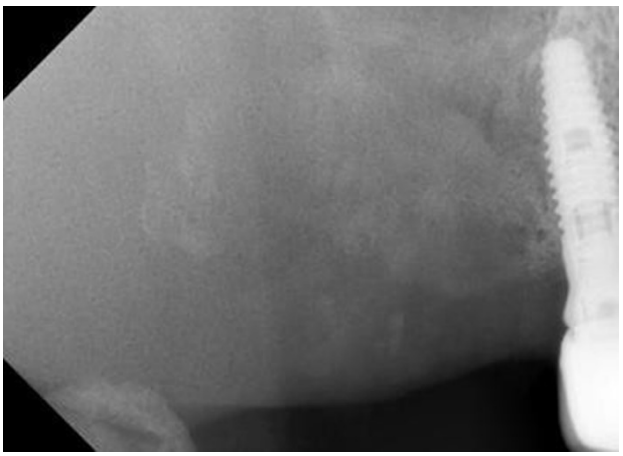

Fig. 1

1. MDS
2. MDS
3. MDS
4. BDS

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Patient was advised a CBCT panoramic view which showed extreme bone loss in the whole alveolar region upto the tuberosity and typical moth eaten appearance (Fig 2). Based on the radiological findings, patient was informed that placement of implants would not be possible. However, patient was very keen that he should be provided a fixed type of prosthesis. So, it was decided with patient's consent that sinus lift may be tried along with bone augmentation and in case implant could not be placed the ridge will be prepared to receive an alternate prosthesis. After due pre-operative preparations, right posterior and middle superior alveolar nerve block along with greater palatal nerve block was administered. While administering anesthesia, a small drop of pus like fluid came out at point of needle insertion. Patient was informed immediately that the area is infected and we would like to inspect the area and then proceed accordingly. An incision from mesial of 14 to right maxillary tuberosity was made. While giving incision a thick creamy fluid started draining out in large quantity. Carefully the flap was reflected which revealed paper thin cortical bone in 16,17 region and no bone in tuberosity area. The findings pointed towards the presence of a large cystic lesion. Carefully the lining along with the involved buccal cortical plate which was already eroded, was dissected out and removed. Cystic lining was extremely thin and friable. The cystic lesion involved the whole maxillary sinus, infratemporal crest and pterygoid plates which were also eroded. Superiorly, the lesion extended upto the infraorbital region (Fig 3,4). During the surgery, thick cartilaginous like lining which was about 4 cm x 2cm peeled off from the base of infraorbital floor. The outer surface showed greyish white smooth wall, thickness measuring 0.1 to 0.2 cm.

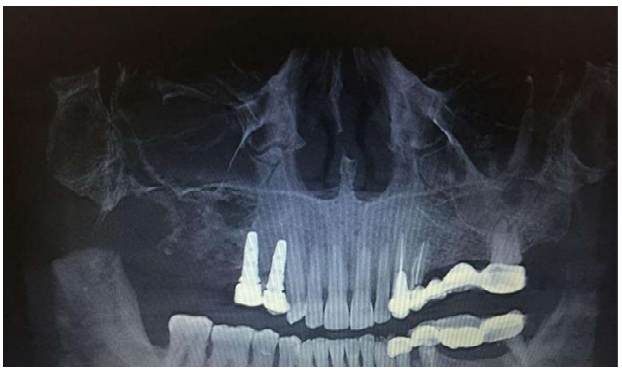

Fig. 2

The distal wall of implant in relation to 15 was also involved in the cystic lesion and thus implant was removed (Fig 5 & 6).

Whole cystic cavity was examined for any bleeding points or damage to any vital structures. A ribbon gauze soaked in betadine lotion was packed into cystic cavity. Patient was given post-operative instructions for ice pack application and necessary antibiotics, analgesics and supportive therapy. Another point to be considered is that the complete surgery was performed under local anesthesia with no post-operative complications.

Post operatively a 3D CT scan of maxilla was advised which showed the extent of the lesion.

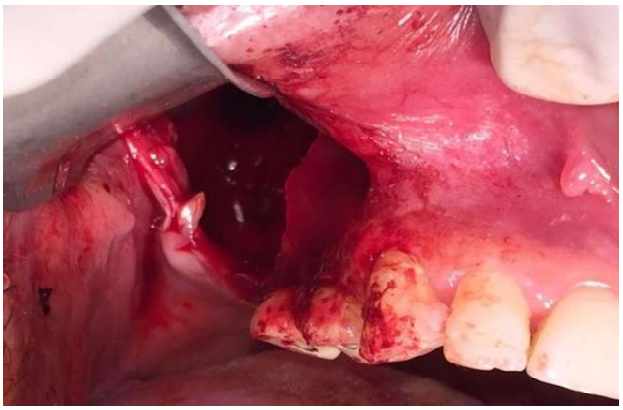

Fig. 3

Fig. 4

HISTOPATHOLGICAL FINDINGS:

The bone cyst lining along with removed tissue were send for histopathological examination (Fig 6). Section showed a cyst lined by stratified squamous epithelium

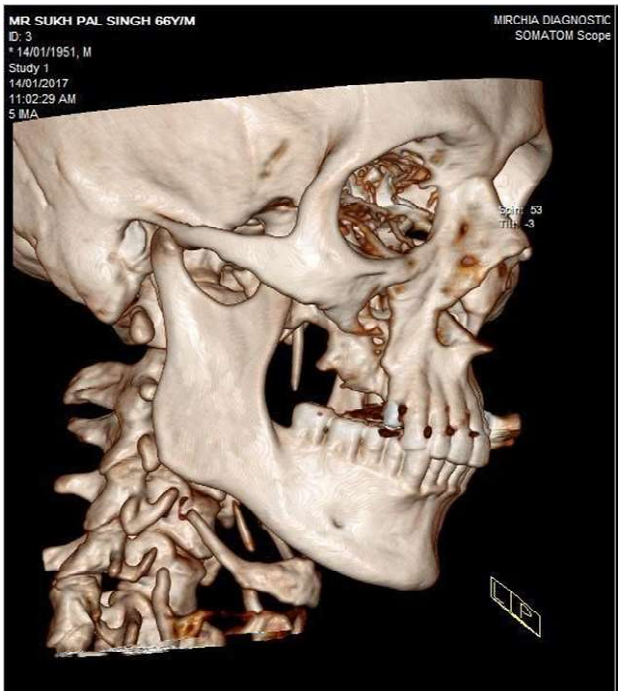

Fig. 5

Fig. 6

of 5 to 8 cells thick. The surface of the lining epithelium was corrugated and showed superficial keratinization. There was mild to moderate chronic inflammatory cell infiltrate in the sub-epithelium.

DIAGNOSIS: Odontogenic keratocyst

DISCUSSION:

The recurrence rate for odontogenic keratocyst is very high and patient should be reviewed periodically [1,2,6,8,14,14,15,16,17]. Recurrence occurs principally in the first 5 years after operation[2,15,17,18,19], but may occur in much longer time intervals. Recurrence rate was found to vary from 0% to about 62%, depending on the kind of treatment management and follow-up period[13,14,15,16,17]. The recurrence of OKC is thought to be based on great mitotic activity and growth potential found in epithelium, further than other sources of recurrences such as remnants of dental lamina and epithelial islands. These findings suggested surgical management of the cystic lesion to eradicate epithelium components along with attached mucosa.[8]

It has been suggested that OKC originates from dental lamina remains.[7] Some authors support that it should be considered a benign cystic neoplasm[8,9,10,] due to its growth capacity and development characteristics related to the mutation of a suppressor tumor gene, PTCH, and is associated to basal cell nevus syndrome keratocysts.[11] Recently, intracystic fluid pressure was found to be involved in OKC growth.[12]

The OKC has a predilection for men, occurs significantly more in the posterior region of the mandible and mostly affects people in second and third decades of life[1,2,8.13,14,15,16]. It seems that less than 1% of all cases of OKC occur in the maxilla with sinus involvement[2,14.]

Various treatment alternatives based on surgical approaches have been suggested, such as marsupialization, enucleation, enucleation with Carnoy's solution, enucleation with cryotherapy, curettage and resection[13-18]. Simple enucleation was associated to a higher recurrence rate,[13- 18] while resection[17] and enucleation with bone curettage presented lower rates.16 So, enucleation along with bone curettage was performed in this case. Special attention should be given to the dentate area if the enucleation is chosen as treatment, due to higher rates of recurrence found in OKC associated with teeth.[13] Keeping this point in mind the involved implant with respect to 15 was also removed.

As OKC appearance in the maxillary sinus is rare, its radiographic image in such situation may be misinterpreted. Computed tomography can provide information on the extent of these lesions, contributing to diagnosis and preoperative preparation. OKC has clinical diagnostic difficulties due to relative lack of specific clinical and radiographic characteristics.18 Because OKC has features similar to dentigerous cyst (radiographic image) and ameloblastoma (mean age at diagnosis, mandibular predilection, propensity to recur and radiographic appearance), and these are the most common provisional diagnoses for OKC.[2] Ideally, accurate clinical and radiographic examination, surgical exploration and histological examination of the biopsy specimenare essential to determine the most effective treatment in order to avoid recurrence[17,19.] In this case, our findings were confirmed by CT scan and biopsy results.

The patient needed to be recalled for change of dressing till the complete epithelization of the cavity had taken place. A suitable prosthesis would be fabricated once tissues can bear the load of obturator. We have been following the patient for past 3 months and good healing and epithelization of the cavity has taken place with no discomfort.

CONCLUSION:

Odontogenic keratocyst has very rare occurrence in Maxillary sinus area. Its management requires a very precise and careful surgical procedure to prevent its recurrence. In this case we focused towards conservative but complete surgical eradication of the lesion and a detailed follow up of the patient post operatively.

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