



ODONTOGENIC KERATOCYST ASSOCIATED WITH ECTOPIC TOOTH IN MAXILLARY SINUS (A RARE CASE REPORT)

Maxillofacial Surgery

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ABSTRACT

One of the most aggressive odontogenic cysts is the Odontogenic Keratocyst (OKC). Less than 1% of maxillary OKC instances have been documented in the literature, making them extremely uncommon. A 20-year-female, complained of discomfort and swelling in the right facial region. Imaging revealed a maxillary OKC and an aberrant tooth at the posterior wall of maxillary sinus. Ectopic molar was found at the posterior wall of maxillary sinus after these was removed by surgery.

KEYWORDS

Odontogenic Keratocyst, Enucleation, Chemical cauterization

INTRODUCTION

The Odontogenic Keratocyst (OKC) is one of the most aggressive odontogenic cysts owing to its high recurrence rate and tendency to invade adjacent tissues⁽¹⁾. Dental lamina remnants give rise to OKCs⁽²⁾, which can develop in isolation or as a swarm of cysts and are associated with syndromes like Gorlin-Goltz. Instead of being thought of as a typical cyst, OKCs may be considered a benign neoplasm⁽³⁾. However, the OKC was renamed as a keratocystic odontogenic tumour (KCOT) by the World Health Organization (WHO) in 2005. Since there was no evidence for their justification as a tumor entity as of 2017⁽⁴⁾, the WHO switched KCOT back to OKC. Less than 1% of cases of OKCs of the maxilla have ever been documented⁽⁵⁾.

CASE REPORT

A 20-year-female patient who visited the Department of oral and maxillofacial surgery at the Meghna Institute of Dental sciences (Nizamabad), complaints of swelling in the upper right side of the face since 15 days. Discharge of pus from past 10 days. A review of the patient's medical history showed that no systemic illness was evident. When questioned about their personal history, they denied having any negative habits like drinking alcohol, chewing tobacco, or betel nut.

The extraoral examination of the patient revealed mild swelling on the upper right side of the face, which was approximately 2 cm x 3 cm in size and extended 2cms away from the lateral wall of nose to 1cms anterior to tragus of ear posteriorly. Superio-inferiorly, lateral cantus of eye to commissure of lip. On palpation soft in consistency, tenderness, non-fluctuant.

Intraoral examination revealed that there was obliteration of right buccal vestibule with pus discharge irt 15, 16, and 17 tooth region, surrounding mucosa was reddish in colour. On palpation, tenderness and discharge was present. Cortical expansion noticed irt 15, 16 and 17. On aspiration, straw-coloured fluid was present. With the above clinical finding, provisional diagnosis of OKC irt 15, 16, and 17 tooth region.

Enucleation is the surgical removal of a cystic lesion in its entirety and unaltered from the tissues around it. In the reported enucleation, recurrence incidence ranges from 17 to 56%. In order to remove any remaining cyst lining or islands within the cyst wall, many surgeons favour combining enucleation and adjunctive treatments. Utilizing modified Carnoy's solution, which uses chemical method to eradicate cyst remnants, is an example of adjunctive treatment that aims to lower recurrence rates^(10,11). It contains 6 ml of absolute ethanol, 1 ml of glacial acetic acid, and 1 g of ferric chloride and is frequently used as an additional therapy for lesions like the okc⁽¹¹⁾.



Figure 1. Orthopantomogram Depicting The Ectopic Tooth In The Right Maxillary Sinus.



Figure 2. Axial CT Image Of The Ectopic Tooth In The Right Maxillary Sinus.



Figure:- 3 Intra Operative Image Of Right Posterior Region Of Maxilla



Figure:- 4 Removal Of Ectopic Tooth From Right Maxillary Sinus

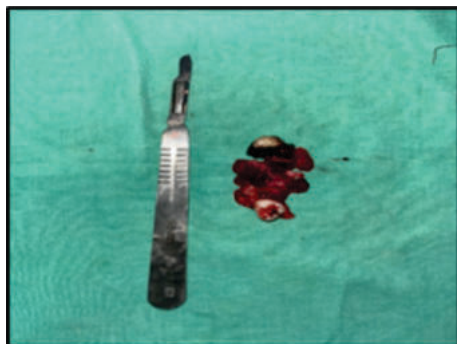


Figure:- 5 Cystic Lining Post Enucleation

DISCUSSION

Maxillary OKCs are unusual and are more frequently discovered in the canine region. The cyst foundation was discovered by CT imaging to be at the third molar, which would be more typical of a dentigerous cyst. The ectopic eruption of teeth in regions other than the oral cavity is rare⁽⁶⁾, though they have been reported. However, to find a tooth at the maxillary sinus is extremely atypical. It is hypothesized that as an OKC develops, it encroaches on the sinus space and shifts its boundaries, dislodging tooth buds and causing an ectopic tooth to erupt⁽⁷⁾.

Orthokeratotic and parakeratinized forms of OKC have been classified histologically. The parakeratotic subtype is the most common (80%) and has a high propensity for recurrence⁽⁸⁾. It is also considerably more aggressive than its counterpart. Syndromes associated with multiple OKCs are Nevoid basal cell carcinoma, marfans syndrome, Ehlers danlos syndrome, noonans syndrome and Gorlin-Goltz syndrome sufferers frequently have numerous cysts, dental, skeletal, neurological, and ophthalmic abnormalities, as well as a greater recurrence rate. None of the aforementioned characteristics were present in our case.

Reasons for Recurrence of OKC (13–62%) Thin walls and fragile epithelial lining, Epithelial lining is weakly attached to capsule, Extension of the cyst into cancellous bone, Dental lamina remnants in bone/overlying mucosa, Growth of new OKC from satellite cyst or daughter cyst or remnant or cell rests. In the case of perforation of the cortex, cyst lining adheres to adjoining bone or buccal or lingual mucosa (especially, lingual perforation is difficult to access during enucleation), In dentate area (residual remnants in intraradicular areas), Scalloped margins in multilocular variety, Desire to preserve adjacent vital structures, Location with difficult access and Extensive lesion involving coronoid/ascending ramus (difficult access).

Modified Carnoy's solution had been suggested as an adjuvant therapy following enucleation due to the worry about recurrence. The solution is made up of absolute ethanol, glacial acetic acid and ferric chloride⁽⁹⁾. There is a risk regarding damage to soft tissue and neurovascular structures with its application, and for this reason, it was utilized with caution. Given the patients age and low chance of malignant transformation, the more extensive surgical option of a maxillectomy and flap reconstruction was not indicated.

CONCLUSION

Following observation of its biological activity and genetic anomalies

consistent with neoplastic progression, OKC was classified as a "cyst". This case report of OKC describes the clinical and radiographic presentation, diagnosis, treatment, and follow-up of a 20-year-old female patient in the right side of the maxilla. Due to the genetic and molecular underpinnings of OKCs, research on suitable treatment methods is still ongoing. Surgeons should carefully review every case individually and should offer patients better treatment choices.

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