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Decompression as a Primary Approach to Treat Large OKC –A Case Report

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ABSTRACT
The odontogenic keratocyst (OKC) is the most aggressive and recurrent of all odontogenic cysts which have a specific and unique entity both histopathologically and behaviorally. Decompression of a large OKC as a primary treatment permits preservation of vital structures and regeneration of bone with least morbidity. A 21-year-old woman reported with a chief complaint of swelling on the left side of her face since 1 month. Cone Beam Computed Tomography showed the overall size was 74.44mm 26.52mm with perforation of the buccal cortical plate. Incisional biopsy reported as OKC.On taking into account the patient's age and extent of the lesion, decompression was done using customized fabricated acrylic plate. Serial radiographs showed significant decrease in the size and bone formation at the cystic periphery. Decompression may be considered using customised designed device for large OKCs, as it is easy to fabricate and maintain.*
***Keywords**: Large OKC, Decompression, customized device*

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INTRODUCTION

The odontogenickeratocyst known as OKC was originally identified in 1956. The World Health Organization (WHO) now refers to OKC as a keratocysticodontogenictumour (KCOT), which it defined as "a benign uni- or multi-cystic, intraosseoustumour of odontogenic origin, with a characteristic lining of parakeratinized stratified squamous epithelium and potential for aggressive, infiltrative behaviour . Odontogenic[1-2].One of the most aggressive odontogenic cysts is the KCOT. Due to its capacity for substantial expansion, extension into neighbouring tissues, and quick growth, it may grow to be extremely enormous [3-4]. Keratocyst (OKC) has been widely studied among various jaw cysts with a continuously changing nomenclature from a 'primordial cyst' to 'keratocysticodontogenic tumor' and to OKC again[5]This is the most interesting of jaw cysts. The treatment of this aggressive pathology is still debatable, varying from the most conservative, like enucleation and peripheral ostectomy, to more aggressive treatments like radical resection[6]. Oftentimes, in large cysts, complete enucleation may be impractical, which may result in greater morbidity and secondary reconstruction[7].Therefore, we presented a case of large OKC, where it would be wise to reduce the lesion's size by decompression via successful use of a custom made acrylic plate with suction tube as drain prior to definitive surgical treatment.

CASE REPORT

A 21-year-old woman reported to the Faculty of Dental Sciences ,SGT University Gurugram with a chief complaint of swelling on the left side of her face since 1 month. Orthopantomogram (OPG) showed unicystic radiolucent lesion with septe in the left side of the mandible, extending anteroposteriorly from the region of 34 (in the body of mandible) to the sigmoid notch (in the ramus of mandible). Involvement with respect to 36, 37 was also noticed, and 38 was displaced near the region of the sigmoid notch (Figure 1). Cone Beam Computed Tomography (CBCT) showed the overall size was 74.44mm* 26.52mm. Perforation of the cortical plate on the buccalside was noticed in the region of 36, 37 (Figure 2). Keeping in mind the patient's age and extent of the lesion, we opted for decompression.

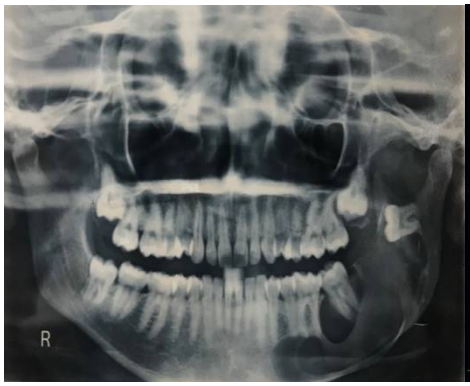
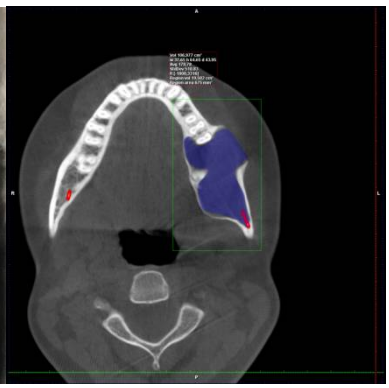

Figure 1 region of the sigmoid notch Figure 2 : CBCT- Axial section.

Pre-operative OPG showing an unicystic radiolucent lesion in the left side of the mandible, extending anteroposteriorly from the region of 34 (in the body of mandible) to the sigmoid notch (in the ramus of mandible) and 38 present just below the sigmoid notch. The Shaded portion in the image shows the overall size and volume of the cystic lesion with perforation of the buccal cortical plate in the region of 36, 37(fig 2).An acrylic plate with C-clasp was fabricated after mock surgery on the cast. Under local anesthesia, decompression was done by raising a mucoperiosteal flap, extracting 36, 37 and exposing the lesion (Figure 3). White keratinous suspension was found inside the cavity and suctioned from the cystic cavity. A device was then fashioned to cover the defect using the end of a suction tip to facilitate drainage from the cystic cavity. A C-clasp incorporated in the acrylic plate enhanced retention (Fig. 4). It was confirmed that the drain was positioned properly to provide access to all cystic regions.and tension free closure done.Figure 3 : Intra-operative image showing the cystic cavity after extraction of 36 and 37.


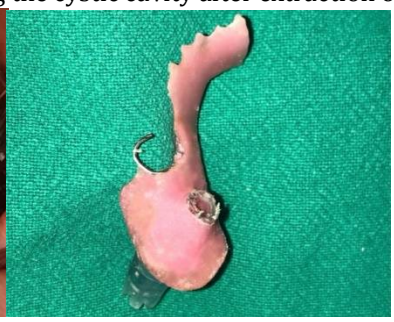

Figure 3 : Intra-operative image Figure 4 C-clasp incorporated

Figure 4 showed an acrylic plate was designed using the end of a suction tip to facilitate drainage from the cystic cavity with a C-clasp incorporated in the acrylic plate enhanced retention. Postoperative recovery was uneventful. The patient was instructed to clean the acrylic plate and self-rinse the drain with normal saline every day. Serial radiographs were used to examine the lesion at regular intervals to ensure the reduction in the size of the cyst (fig 5). The treatment of the OKC is a topic of debate for long due to its aggressive nature and a propensity for recurrence. From least invasive treatment approach as enucleation with peripheral ostectomy and carnoy's solution application or cryotherapy for treatment of small cyst to more aggressive treatment as radical resection for large cyst is suggested.

Figure 5 post-operative OPG

DISCUSSION

Decompression of the cyst permits definitive therapy with little morbidity, as well as bone regrowth and preservation of the inferior alveolar nerve [8-9]. In the present case, post-operative OPG after 3 months showed significant decrease in the size and bone formation at the cystic periphery. In Figure 5, downward displacement of the impacted third molar can be appreciated as compared to pre-operative OPG. Figure 5:3 months post-operative OPG after the decompression using the designed device, showing decrease in the size and bone formation at the cystic periphery with downward displacement of the impacted third molar [10]. About more than 10 % of jaw cysts are OKCs, which are frequently related to impacted third molars. They appear as a scalloped-bordered unilocular or multilocular lesion on plain radiography [11-12].

CONCLUSION

Decompression may be considered as primary treatment for large OKCs, as it conserves bone and neighboring anatomical structures. An acrylic plate designed with an incorporated suction tip not only helps in decompression, but is easy to fabricate and maintain.

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