

CASE REPORT

AN UNUSUAL CASE OF DENTIGEROUS CYST

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ABSTRACT

The purpose of this paper is to present a unique case of a Dentigerous Cyst, developed in relation to the left unerupted mandibular canine, crossing the midline and extending to the opposite direction.

It is one of the rare cases involving non-adjacent teeth and crossing the midline, reported in literature. Treatment of dentigerous cyst normally involves enucleation of the cystic sack with epithelial lining along with the unerupted tooth. The criteria for selecting the treatment modality is based on the age, size, location, stage of root development, position of the involved tooth and relation of the lesion to the adjacent tooth and vital structure. The prognosis is excellent when the cyst is enucleated in-toto and recurrence is rare.

Keywords: Dentigerous Cyst, crossing midline, Enucleation, Curettage, Orthopantomogram

INTRODUCTION

Dentigerous cyst is one of the most common developmental cyst of the jaws exhibited by marked

displacement of the unerupted tooth within the jaw.¹ With the pressure of the fluid, cyst enlarges in size and the unerupted tooth can be pushed away from its direction of eruption.² The conservative techniques of treatment for large cysts usually is the decompression and marsupialization. Conservative treatment is quite effective in such cases in preserving the jawbone and adjacent teeth.

Clinically, patients had difficulty in eating the food and swelling over the face near chin region which aesthetically affected the patient's facial appearance. [fig 1] These lesions are normally detected during routine dental check-up in the radiographs. The confirmation of the diagnosis is by the histopathological examination. The management of dentigerous cyst depends on the clinical condition and includes total enucleation, marsupialization and decompression. Best treatment option is total enucleation without extraction of any permanent teeth. The case report illustrates surgical management of a large dentigerous cyst crossing the midline in the lower jaw without removing permanent teeth.

CASE PRESENTATION

A 27-year-old female patient came to the Clove Dental Clinic with a complaint of dull pain & swelling in lower front jaw for the past one month. On examination, the patient's dental and general health was unremarkable with non-specific general medical history and no contra-indication to dental treatment & surgical procedure. Intraoral examination revealed missing left permanent canine.[Fig2] Radiological evaluation of an orthopantomogram (OPG) revealed the presence of large

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Fig. 1: Preoperative profile

radiolucent area in mandible involving an impacted #33, extending from second lateral incisor on left side to second molar on right side while crossing the midline. The impacted permanent canine was pushed to the lower border. The roots of 31, 32, 41, 42, 43, 44, 45, 46, and 47 were involved in the lesion; however, teeth were firm with good bone support.[fig 5] The patient was explained about clinical diagnosis and different treatment options. A written and informed consent was taken from the patient before undergoing the surgical procedure. Thereafter, permanent teeth with root involvement were endodontically treated one week before the surgical procedure.

SURGICAL PROCEDURE

Under sterile and aseptic conditions, general anaesthesia was administered and Naso-Endotracheal intubation was done. Patient’s face was painted with povidone iodine and draped. Local anaesthesia with adrenaline was administered at surgical site. Crevicular incision was made from 47 to 36 regions with bilateral relieving incision placed distal to 47 and 36, and a full thickness mucoperiosteal flap was raised. Subperiosteal dissection was done and the mental nerve was identified and preserved. A perforation in buccal cortical plate was



Fig. 5: Preoperative orthopantomogram

seen. Markings were made and osteotomy of the buccal cortical plate was done. Thereafter, cystic soft tissue was enucleated *in toto* and the pathological tissue was preserved for histopathological examination. The impacted permanent canine was extracted atraumatically. Apicoectomy of root canal treated teeth done. Bio-Oss bone graft, 7cc, mixed with PRF (Sticky bone) was placed in the empty bone space, covered with collagen membrane. Primary closure was done with 3-0 silk. Haemostasis was achieved and pressure dressing was done externally at chin region. Patient was extubated & shifted to post-op ward.

The cystic lining was sent for histopathological examination. The examination revealed presence of hyperplastic stratified squamous lining epithelium with focal ulceration. The subepithelial connective tissue shows moderate chronic inflammatory infiltrates composed of lymphoplasmacytic cells admixed with few neutrophils. The wall is fibro-collagenous with chronic granulation tissue, cholesterol clefts and intraluminal necrotic debris. This confirms the impression of consistent with Dentigerous Cyst.

The surgical site showed good healing and the sutures were removed after 15 days of surgery. The post-op swelling was minimal. [fig 7] The patient was recalled for follow-up after a month. The post-operative OPG taken revealed healing by secondary intention [fig 6]

DISSCUSION

The Dentigerous Cyst occurs most commonly in second and third decade.³ It shares clinical and radiographic features with other lesions such as Odontogenic Keratocyst, Ameloblastoma, Ameloblastic Fibroma and Adenomatoid Odontogenic Tumour², which can simultaneously occur with this cyst.⁴ Rohilla *et al.* stated that Dentigerous Cysts are frequently associated with impacted teeth and its occurrence in association with canines is frequent as the canines are the commonly impacted anterior teeth as was found in our case report.⁵

A case report by Gonzalez *et al.* (2011) who reported a Dentigerous Cyst encompassing the right and left



Fig. 2: Intraoral profile



Fig. 3: Intra oral exposure of cystic lesion



Fig. 4: Closer and lesion



Fig. 6: post- orthopantomogram

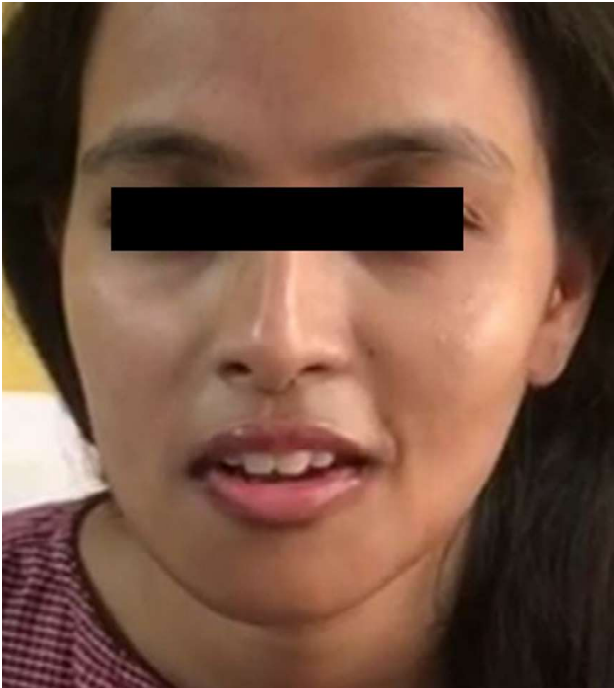


Fig. 7: postop day 1

impacted mandibular canines and crossing the midline. Hence, we are reporting this case, similar to him case in which cyst crossed the midline.⁶ In our case, there was an intact lower basal bone, which favoured the enucleation therapy.⁷ For a large cyst, Scolozzi *et al* recommended enucleation followed by an immediate bone grafting procedure.⁸

CONCLUSION:

Some of the challenges which we encountered during the surgical procedure are as follows:

1. Unerupted canine was embedded in lower border of mandible, little force in removing the unerupted canines or cutting of the bone to relieve the anchorage at root level would have led to immediate fracture of the mandible. In this case, if the mandible was fractured stabilization of fractured fragments would have been a big challenge since fixing of the bone plates was an issue.

2. 31, 32, 41, 42, 43, 44, 45, 46 & 47 were involved in the cystic lesion, preserving them without any damage to these teeth & healthy bone, removal of the cystic lining in toto in such a scenario is a very difficult task.
3. In 44 regions the area of mental foramen was not seen in the radiographic examination. Removing the lesion without damage to the mental nerve was a difficult since tunnelling has to be done.
4. Lesion being approximately 16 cms in length and involving the area right up to the inferior border of mandible was very big and to replace the lost bone tissue without taking any iliac or rib bone graft.
5. As a young female patient, the reconstruction of the mandible with autogenous bone graft was not taken as an option because it would have led to facial deformity, 2nd surgical procedure and psychological trauma, therefore bone grafting with xenograft was done.
6. Bone grafting helps in healing & restoring the shape of the face. All efforts should be made to preserve the teeth which can be saved by Endodontic procedure. All patients undergoing routine dental check-up should undergo radiological evaluation to see any underlying pathology.

Source of support: Clove Dental India

Conflict of interest: None

Acknowledgements: Clove Dental Management

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