

A Rare Incidence of Dentigerous Cyst Associated with Impacted Mandibular Canine

Pavan Vairagar¹, Aditya Jangam¹, Nakul Parashrami¹, Amit Sangle², Rakesh Oswal³, Shehzad Sheikh¹, Aniket Pujari¹

¹Graduate Student, Department of Oral & Maxillofacial Surgery, M. A. Rangoonwala College of Dental Sciences & Research Centre, Pune, Maharashtra, India, ²Professor, Department of Oral & Maxillofacial Surgery, M. A. Rangoonwala College of Dental Sciences & Research Centre, Pune, Maharashtra, India, ³Reader, Department of Oral & Maxillofacial Surgery, M. A. Rangoonwala College of Dental Sciences & Research Centre, Pune, Maharashtra, India

The dentigerous cyst, theoretically, must be associated with the crown of an unerupted or developing tooth or an odontoma. Most cases are reported in second and third decade of life, and it shows slight male predilection. In most of the cases, dentigerous cyst is an accidental finding when a radiograph is taken for some other therapeutic purpose. A dentigerous cyst is a benign lesion, but it has the potentiality to become an aggressive lesion. Radiographic findings cannot be considered as final tool to diagnose dentigerous cyst because odontogenic keratocysts, unilocular, ameloblastomas, and many other tumors show similar radiological findings as that of the dentigerous cyst. Thus, histopathological examination is utmost important in the large cystic lesion. Cyst size and site, involvement of dentition and surrounding structures should be considered while treatment planning. On the basis of these criteria, different treatment modalities should be chosen. This includes cyst enucleation and extraction of impacted tooth, cyst enucleation, and preservation of impacted tooth or decompression with surgical access. The most common sites for dentigerous cysts are mandibular third molar region and maxillary canine region, as they are the most commonly impacted teeth. We are presenting a case of dentigerous cyst at an unusual place, mandibular canine region.

Keywords: Decompression, Impacted tooth, Surgical access

INTRODUCTION

The dentigerous cyst is defined in the textbook as an odontogenic cyst that surrounds the crown of an impacted tooth caused by fluid accumulation between reduced enamel epithelium and the enamel surface.¹ Dentigerous cysts are mostly associated with impacted teeth. The dentigerous cyst, theoretically, must be associated with the crown of an unerupted or developing tooth or an odontoma.² Most cases are reported in second and third decade of life, and it shows slight male predilection (M:F: 3:2). In cases of bilateral or multiple cysts, almost all of the cases are found associated with cleidocranial dysplasia and maroteaux-lamy syndrome.¹ The dentigerous cyst almost always involves permanent teeth, but involvement with deciduous are also reported.² In most of the cases, the dentigerous cyst is an accidental finding when a radiograph is taken for some other therapeutic purpose. A dentigerous cyst is usually

not associated with pain or any kind of discomfort, but it can be present if cyst gets infected. It has the potentiality to become an aggressive lesion.¹ Radiographic examination reveals a unilocular radiolucent lesion in association with the crown of an unerupted tooth, but larger lesions may show multilocular appearance.³ There are three radiological variations of dentigerous cysts *viz.*; central lateral and circumferential. Histologically, it is composed of a thin connective tissue wall with a thin layer of stratified squamous epithelium lining.¹ The most common sites for dentigerous cysts are mandibular third molar region and maxillary canine region, as they are the most commonly impacted teeth. We are presenting a case of dentigerous cyst at an unusual place, mandibular canine region.

CASE REPORT

A 28-year-old male reported to our department with the chief complaint of swelling in lower left tooth region since a year. Patient was apparently alright 1-year back when he noticed swelling in the lower left tooth region. Swelling was painless and hard in consistency and gradually increased slowly over the period of time (Figure 1). He underwent extraction with lower left deciduous canine 2 weeks before coming to us from a local dentist. On clinical examination, facial asymmetry was noted due to swelling on the lower

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Corresponding Author:

Dr. Aditya Jangam, Department of Oral and Maxillofacial Surgery, M. A. Rangoonwala College of Dental Sciences & Research Centre, Pune, Maharashtra, India. Phone: +91-9730486048. E-mail: dr.aityajangam@gmail.com

border of the mandible on the left side. Swelling was approximately 30 mm × 45 mm in size. Swelling was painless and hard in consistency. Intraorally swelling was present in lower left buccal sulcus extending from 41 to 35 regions. A total of 33 were missing (Figure 2). No disturbance in the occlusion noted. Considering the signs and symptoms and the fact that 33 were missing, a provisional diagnosis of “dentigerous cyst” was reached. Patient was advised for an orthopantomogram. Radiographic examination showed radiolucent lesion with thin borders, extending from apices of 42 to 35. A total of 33 were involved in the radiolucent lesion (Figure 3). Incisional biopsy was planned and done under local anesthesia. Oral mucosa along with cystic lining was retrieved (Figures 4 and 5) and sent for histopathological examination. Histopath reports were suggestive of the dentigerous cyst. Treatment plan made was endodontic treatment with 31, 32, 34, enucleation of a cyst under general anesthesia. For enucleation crevicular incision was made from 36 to 41 regions. The full thickness mucoperiosteal flap was raised. Due to the very thin and fragile lining excision was done in fragments; along with

the extraction of the involved tooth, i.e. 33. Boney margins were curetted and smoothed carefully (Figures 6 and 7). Thorough irrigation was done with betadine solution. Closure was done with 3-0 vicryl. A small window is kept at 33 regions. Betadine ointment coated roller gauze packed in the boney cavity.

DISCUSSION

Radiographic findings cannot be considered as final tool to diagnose dentigerous cyst because odontogenic keratocysts, unilocular, ameloblastomas and many other odontogenic, as well as non-odontogenic tumors, shows similar radiological findings as that of dentigerous cyst.⁴ Thus, histopathological examination is utmost important in large cystic lesions as we are presenting here. This separates the dentigerous cysts from other lesions where more aggressive treatment protocols are mandatory.

Cyst size and site, involvement of dentition and surrounding structures should be considered while treatment planning. On the basis of these criteria, different treatment modalities should be chosen. This includes cyst enucleation and extraction of impacted tooth, cyst enucleation, and



Figure 1: Preoperative profile picture

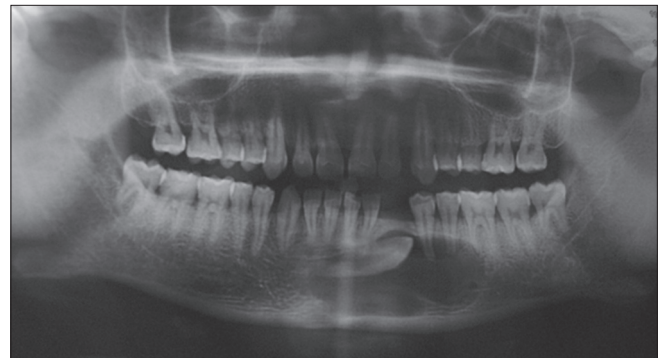


Figure 3: Radiographic appearance



Figure 2: Preoperative intraoral picture



Figure 4: Incisional biopsy



Figure 5: Biopsy sample sent for histopath studies

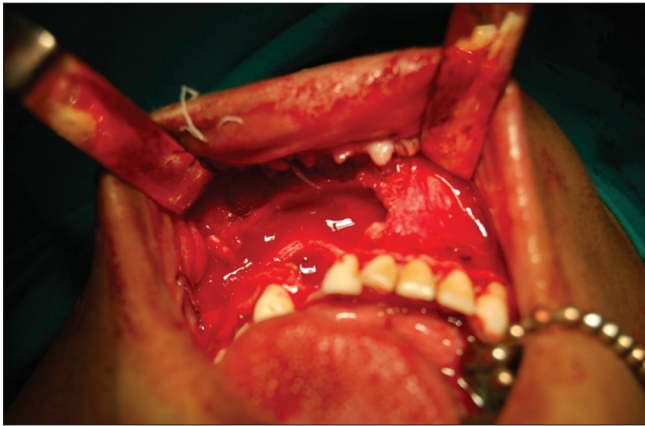


Figure 6: Excision of the lesion, bony defect seen

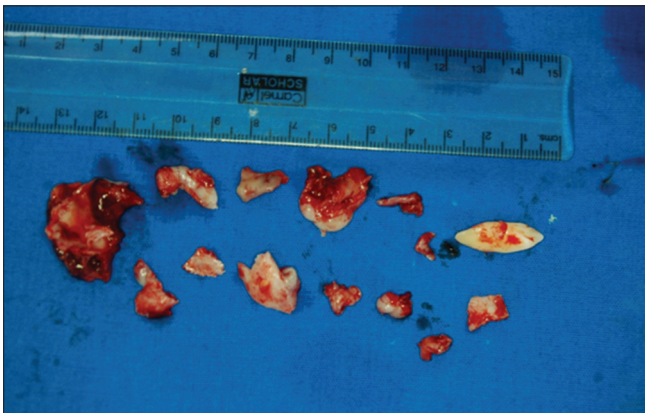


Figure 7: Excised cystic lining and associated mandibular canine

preservation of impacted tooth or decompression with surgical access. Marsupialization of odontogenic cystic lesions has been described by various investigators since 1892,⁵ with decompression being described by Thoma in 1958.⁶ Marsupialization is the specific procedure in which the cyst lining is everted and sutured to the surrounding mucosa to form a cavity that can remain open. The term decompression includes marsupialization and is any technique that decreases the intraluminal pressure of a cystic cavity by maintaining an opening into the oral cavity.⁷ It is reported that decompression, as well as enucleation, both, allow for alleviation lining of dentigerous cysts to

undergo neoplastic changes.⁸⁻¹¹ However, literature on enucleation of cyst with preservation of involved tooth; and use of orthodontic treatment to bring it to its position in the dentition is infrequent.⁴ It is mentioned in the literature that, the acceptance of dentigerous cyst decompression, describing case reports surgical access was given to cystic cavity in oral cavity some device, like rubber drain or gauze packing, was placed so that access made stays patent to permit shrinkage of the cyst, which will be enucleated at later stage.¹²⁻¹⁵ It may give rise to squamous cell carcinoma also.⁹ However, frequency for such changes is very minimal.

Surgery is recommended for dentigerous cysts because they stops the eruption of teeth, and as they grow in size they start displacing surrounding teeth, destroy bone, which may lead to pathologic fractures and also encroaches on vital structures such as alveolar nerve and maxillary sinus.¹¹ The surgery involves complete enucleation of teeth along with removal of an involved tooth.¹⁶ However, this is possible when only one tooth is involved in the lesion, like impacted lower third molar, which is practically useless for the patient. However, in cases of larger cysts multiple teeth needs to get extracted along with some bony irregularity; thus in such cases functional, cosmetic, and psychological aspects should be considered as dentigerous cyst being a benign lesion.

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