

Huge Dentigerous Cyst in the Mandible Treated under Local Anesthesia

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ABSTRACT

A case of a dentigerous cyst located in the mandible of a 32-year-old male was reported. The patient was consulted to our clinic with complaining discomfort in the retromolar area of the left mandible. Radiographic examination revealed regularly demarcated huge bone resorption in the left molar area. Under local anesthesia, lesion was excised and specimen was sent for pathological examination. Microscopic examination of the excised tissue showed it to be well-circumscribed with fibrous tissues, and the cystic space lined by keratinized epithelium. There was no evidence of recurrence of the cysts. The patient remained in good health during the 1 year follow-up.

Keywords: Mandible, Cyst, Enucleation.

How to cite this article: Findik Y, Baykul T. Huge Dentigerous Cyst in the Mandible Treated under Local Anesthesia. *Int J Exper Dent Sci* 2012;1(1):45-47.

Source of support: Nil

Conflict of interest: None declared

INTRODUCTION

Cystic and cyst-like lesions of the mandible are primarily radiolucent and well demarcated and may be odontogenic or nonodontogenic. Odontogenic cysts and tumors develop during or after the formation of teeth.¹ A dentigerous cyst is an epithelial-lined developmental cavity that encloses the crown of an unerupted tooth at the cemento-enamel junction. The dentigerous cyst is the second most common type of odontogenic cyst and the most common developmental cyst of the jaws.² A dentigerous cyst almost exclusively occurs in the permanent dentition, especially in association with third molars and maxillary canines, which commonly remain impacted. Removal of the associated tooth and enucleation of the lesion are considered as a definitive therapy in the management of dentigerous cysts but marsupialization provides a less extensive and safe surgical procedure.³ The aim of this case report was to discuss the treatment of a large dentigerous cyst associated with mandibular third molar.

CASE REPORT

In 2010, a 32-year-old male patient consulted to the Department of Oral and Maxillofacial Surgery of the Faculty of Dentistry, Süleyman Demirel University, Isparta, Turkey, for the evaluation and assessment of a large radiolucent lesion, associated with an impacted third molar, located at the left posterior region of his mandible (Fig. 1). He was asymptomatic and unaware of this occurrence. There was

no swelling over the inner and outer aspects of the ramus and posterior part of the body of the mandible and the color of the mucous membrane was normal. He also had no paresthesia. The patient's general health was good, and his medical history was unremarkable.

The clinical diagnosis was dentigerous cysts. Under local anesthesia, the buccal flap was raised and periosteal dissection was done buccally to expose the ascending ramus and corpus of the mandible. Cyst enucleated together with the associated third molar teeth. Cyst epithelium pushed the alveolaris inferior nerve to the base of the mandible. Lesion was enucleated with preserving the nerve and alveolaris inferior nerve was seen at the base of the cyst cavity (Fig. 2). Fracture of the mandible was not seen while removal of the cyst epithelium and teeth. The enucleated soft tissues were sent to pathology and the wound was sutured after irrigation. Healing was uneventful, and 1 week after the operation, the surgical sites showed good healing. Paresthesia was not seen and there was also no evidence of recurrence of the cysts in 2 years follow-up (Fig. 3). The pathology report revealed tissue compatible with a dentigerous cyst.

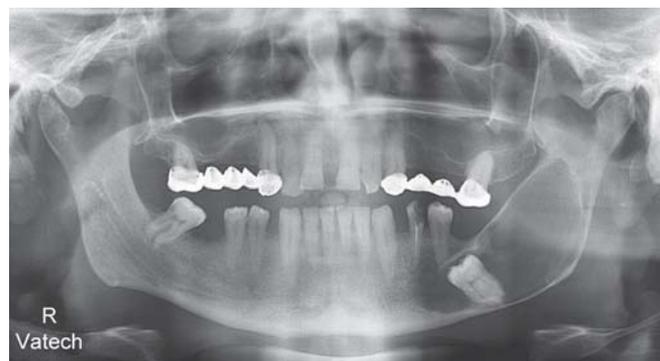


Fig. 1: Panoramic view of the huge cyst



Fig. 2: View of the cyst, impacted tooth and alveolaris inferior nerve at the base of the cyst cavity



Fig. 3: Panoramic view of the lesion after 2 years

DISCUSSION

The dentigerous cyst is the most common type of noninflammatory odontogenic cyst and the most common cause of a pericoronal area of lucency associated with an impacted tooth.⁴ A dentigerous cyst forms within the lining of the dental follicle when fluid accumulates between the follicular epithelium and the crown of the developing or unerupted tooth. Most dentigerous cysts manifest in adolescents and young adults and often form around the crown of an unerupted mandibular third molar like our case. Small dentigerous cysts are usually discovered in radiographic examinations that are taken to investigate other symptoms or a failure of tooth eruption. However, they can grow extremely large asymptotically like presented case and remain undetected until they enlarge enough, causing bony expansion and asymptomatic facial swelling.⁵ Nerve paresthesia is an extremely rare symptom for dentigerous cysts. It is usually related with serious illnesses, such as malignancies or neurological diseases.⁶ In radiographic examination, dentigerous cysts appear as well-defined, round, corticated, lucent lesions around the crowns of impacted teeth, usually third molars.¹ In the mandible, the associated radiolucency may extend superiorly from the third molar site into the ramus or anteriorly and inferiorly along the body of the mandible. In maxillary dentigerous cysts involving the canine region, extension into the maxillary sinus or to orbital floor may be noted. Resorption of roots of adjacent erupted teeth may occasionally be seen.⁷ In the presented case, lesion was asymptomatic and radiographically extends mandibular premolar region to the ramus of the mandible.

A differential diagnosis of pericoronal radiolucency should include odontogenic keratocyst, ameloblastoma and other odontogenic tumors. Ameloblastic transformation of a dentigerous cyst lining should also be part of the differential diagnosis. Adenomatoid odontogenic tumor would be a further consideration with anterior pericoronal

radiolucencies and ameloblastic fibroma would be a possibility for lesions occurring in the posterior jaws of young patients.⁷

The methods of surgical removal include extraoral approaches and the intraoral route.⁸ The most commonly used extraoral approaches were submandibular access and preauricular access.⁹ These external accesses have the advantage of good exposure of the surgical site but may result in complications, such as extraoral scar formation, damage of joint components, facial nerve injury in the case of preauricular access, or damage of the marginal branch of seventh cranial nerve in the case of submandibular access. The intraoral route may avoid these problems but provides a smaller surgical site. Treatment of dentigerous cysts is often enucleation. However, larger dentigerous cysts also may be treated with marsupialization. The cyst can then be excised at a later date with a less extensive surgical procedure. If the tooth is in a favorable position and space is available it may occasionally possible to marsupialize a dentigerous cyst to allow the tooth erupt.¹⁰ In the present case, because of the patient's age and the unfavorable positions of the teeth, it was decided to perform enucleation with intraoral approach.

CONCLUSION

The original features of this case among the others are the young age of the patient, the extent of the lesion, the provision of adequate bone regeneration without the use of any graft material, and also no nerve injury was seen after the operation. This case highlights the advantages of the enucleation method intraorally and also the importance of performing a biopsy to define the histologic type of these lesions in the management protocol of odontogenic cysts.

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