

Inferior alveolar nerve paresthesia caused by a dentigerous cyst associated with three teeth

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ABSTRACT

The dentigerous cyst is a common pathologic entity associated with an impacted tooth, usually third molars. They generally are asymptomatic, being found on routine dental radiographic examination. This report describes the case of a 43 year old male with a large dentigerous cyst associated with mandibular canine, first and second premolar teeth that caused paresthesia of the inferior alveolar nerve.

Key words: Dentigerous cyst, inferior alveolar nerve paresthesia, mandible.

INTRODUCTION

The dentigerous or follicular cysts are the second most common type of odontogenic cysts and the most common developmental cysts of the jaws (1). Typically, they are associated with the crown of an unerupted or developing tooth, usually third molars. Although they are usually asymptomatic and diagnosed on routine dental radiographs they can enlarge, causing bone expansion and even pathologic fractures (2).

Dentigerous cysts are not typically associated with nerve disturbance.(1) Nerve disturbance is usually related to malignancies, direct or indirect injury to the neurovascular bundle, various systemic diseases, or neurological diseases(3). Inferior alveolar nerve is sometimes affected by periapical pathoses and mandibular cysts (4). There are few reports in the literature about mandibular cysts that causes inferior alveolar nerve disturbance (2,4). Therefore we aimed to describe an additional case associated with an inferior alveolar nerve paresthesia caused by a dentigerous cyst and to confirm that benign odontogenic cysts might also create neurosensory disturbance.

Case report

A 43-year-old male was referred to the Oral and Maxillofacial Surgery Clinic with the complaint of a swelling overlying the left side of the mandible. He also had mandibular paresthesia involving the left lower lip and chin for about 3 months. To explore the lower lip paresthesia, pin prick and light touch sensation test were done. Nerve function was evaluated using a wisp of cotton to determine sensitivity of the lip and a 27-gauge needle to test for the perceive pain. Extraoral examination revealed mild soft tissue swelling and tenderness in the left masseter region. There was a palpable hard mass at the base of the vestibule in intraoral examination. Radiographic examination showed a large radiolucent lesion from the mandibular left lateral incisor tooth to the left third molar area. The mandibular canine, first and second premolar teeth were displaced to the inferior border (Figure 1). A fine-needle aspiration biopsy was performed and suggested that the lesion was cystic. Fine-needle aspiration (FNA) biopsy has proved to be a cost-effective technique, with low complication risks and high diagnostic value in distinguishing neoplastic versus nonneoplastic lesions in many organs.(5)

The operation was performed under local anaesthesia. After a buccal mucoperiosteal flap had been elevated, the cyst was totally enucleated and the associated teeth were removed. Care was taken to preserve the inferior alveolar nerve. A specimen was sent for histopathologic examination, and a diagnosis of dentigerous cyst was revealed. Microscopic examination showed a cystic structure lined by a thin layer of stratified squamous epithelium (Figure 2). One year after surgery, he had full return of neurologic function.

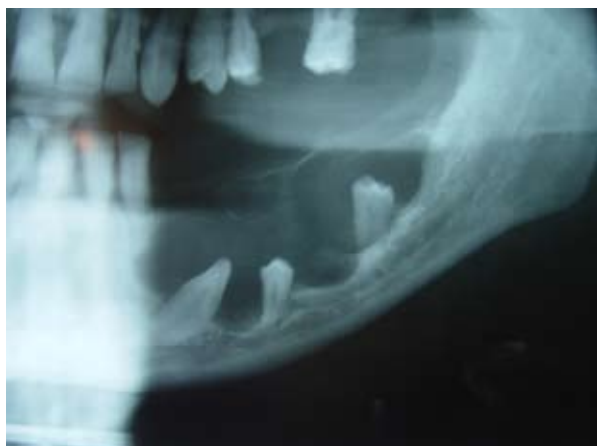


Fig. 1. Panoramic radiograph showing radiolucency in the left posterior mandible.

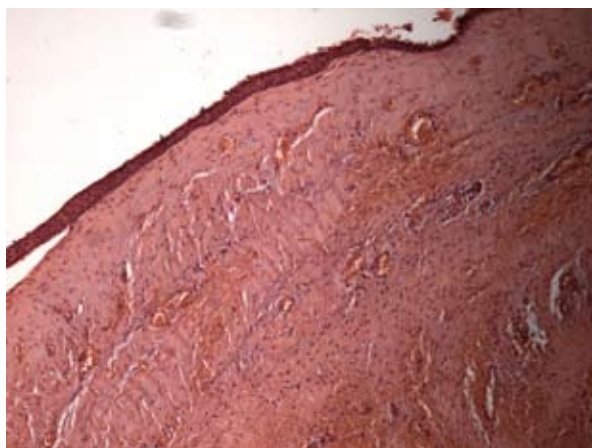


Fig. 2. Microscopic examination showing a cystic structure lined by a thin layer of stratified squamous epithelium.

DISCUSSION

Because they are typically asymptomatic, dentigerous cysts are usually diagnosed on routine dental radiographs. The diagnosis of dentigerous cyst is based on a combination of radiographic and histologic features. Radiographically, a dentigerous cyst presents as a well defined unilocular or occasionally multilocular radiolucency with corticating margins in association with the crown of an unerupted tooth (1). If a follicular space on radiography is more than 5 mm, an odontogenic cyst can be suspected (6). Delayed eruption is the most common indication of dentigerous cyst formation. In the present case, canine, first and second premolar teeth were absent in the dental arch. Dentigerous cyst associated with three teeth especially in an elder patient is an extremely uncommon pathologic entity. Radiographic examination revealed that the cyst led to the displacement of three teeth and inferior alveolar nerve to the lower border of the mandible.

Like other cysts, uncomplicated dentigerous cyst causes no symptoms until the swelling becomes noticeable. Infection of dentigerous cyst causes the usual symptoms of pain and accelerated swelling (7). Nerve paresthesia is an extremely rare symptom for dentigerous cysts. It is usually related with serious illnesses such as malignancies or neurological diseases (4). According to our knowledge, this was the third case of this nature noted in the literature that shows benign odontogenic lesions may also create neurosensory disturbance (2). The reason of the nerve damage is unclear. Possible explanations are that the paresthesia is secondary to the inflammation in the cyst wall or it can be caused by simple mechanical compression of the expanded cyst.(2,4) In this case, the extension of the cyst into the neurovascular bundle might caused the nerve disturbance. After removal of the lesion, patient had full return of neurologic function. The lesions mimicking dentigerous cysts are radicular cysts, odontogenic keratocysts and ameloblastomas. Ameloblastoma is the most common radiolucent, benign odontogenic tumor that may be unilocular or multilocular. It may cause expansion and destruction of the maxilla and mandibula. Ameloblastic transformation of a dentigerous cyst lining should also be a part of the diagnosis (1). 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 marsupialise a dentigerous cyst to allow the tooth erupt (6). In the present case, because of the patient's age and the unfavorable positions of the teeth, it was decided to perform enucleation.

CONCLUSION

The present report showed that although neurosensory disturbance was an uncommon clinical feature of dentigerous cyst, one should remember that especially large dentigerous cysts might create nerve disturbance.

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