

Case Report & Review of Literature

Palatal Dentigerous Cyst Mimicking Radicular Cyst: A Case Report & Review of Literature

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Abstract

Dentigerous cysts are benign odontogenic cysts that are associated with the crowns of permanent teeth and rarely recur. They are usually single in occurrence and located in the mandible. Multiple cysts are reported in patients with conditions such as mucopolysaccharidosis and basal cell nevus syndrome. Here, we report a case of impacted maxillary cuspid with dentigerous cyst in a nonsyndromic patient.

Keywords: Dentigerous cysts, Enucleation, Marsupialisation, Mucopolysaccharidosis, Basal cell nevus syndrome.

INTRODUCTION

A dentigerous cyst is one that is linked to the tooth's neck and encloses the crown of an unerupted tooth by growing into its follicle. According to Browne and Smith (1991), the term "dentigerous cyst" is preferable than "follicular cyst" because the latter suggests a connection to the mesodermal tooth follicle.^[1] It is the second most common jaw cyst comprising 14–20 per cent of all jaw cysts, and are more frequent in males and in the mandible.^[2-4]

Usually, a dentigerous cyst is found during a regular radiography examination or when images are obtained to establish the cause of a tooth's inability to erupt. They are always radiolucent and usually unilocular, have well-defined sclerotic margins unless they become infected (painful), although large lesions occasionally show a scalloping multilocular pattern.^[4,5] Three radiological variations of the dentigerous cyst may be observed- central variety, lateral type and circumferential dentigerous cyst.^[1] Third molars followed by maxillary canines and occasionally supernumerary teeth or odontomas are involved in cyst formation.^[1-4]

Dentigerous cysts may grow to a large size before they are diagnosed and then treatment is more difficult as associated teeth are often impacted and displaced a considerable distance due to cyst pressure; surgery may require removal of several teeth or tooth buds or endanger vitality of adjacent teeth.^[1-4] Although patients may give a history of a slowly enlarging swelling

(common form of presentation), Seward (1964) has shown radiologically that lesions 4–5cm in diameter may develop in 3–4 years.^[1]

Dentigerous cysts must be surgically removed, despite the numerous negative side effects. Decompression, marsupialization, and enucleation are some of the elimination techniques used.^[1-4] However, the criteria for selecting these treatment modalities (indications and contraindications) are not clearly defined. Moreover, large study series and long-term follow-up to assess various treatment results, recurrence, and to compare demographic data, are lacking in the literature.

CASE REPORT

A thirteen year old boy was referred to the Oral and Maxillofacial Surgery Department with anterior palatal swelling antero-posteriorly extending from 64 to 21, sideways from midline to the palatal gingiva (Fig. 1). An intraoral examination indicated that the palatal cortical plates of the alveolar ridge at the location of teeth 21, 22, 63, and 64 were expanding compressibly and painlessly, with no signs of sinus infection or a pus discharge. No change in colour of overlying gingiva and was non tender on palpation.

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Intraoral periapical radiograph w.r.t. 63, Ortho-pantomogram (Fig. 2) and Occlusal view was advised which showed radiolucency around the left impacted canine. Dentition was mixed, carious involvement of 64, with the eruption of multiple teeth were delayed including maxillary canine. Except for his palatal swelling, his physical examination was unremarkable, and routine laboratory tests were within normal limits.

Radiographic findings revealed a well delimited radiolucent area, measuring approximately 20 mm in its largest diameter, with sclerotic margins, completely associated with the crown of the involved permanent teeth

(23). Aspiration of the lesion fluid revealed a serous, straw coloured and blood tinged liquid content in which inflammatory cells were found.

The lesion was treated by enucleation with preservation of impacted 23 and acrylic plate was applied for support after suturing (Fig.5,6) During the surgical procedures, 64 was extracted and also a biopsy was sent for histopathological examination which confirmed the clinical diagnosis of the dentigerous cyst for the lesion. (Fig.3,4) No dysplastic changes were observed. At 7 and 30 days, the follow-up was completed.



Fig.1. Clinical picture showing left sided anterior palatal swelling. Alveolar ridge expansion at the palate.

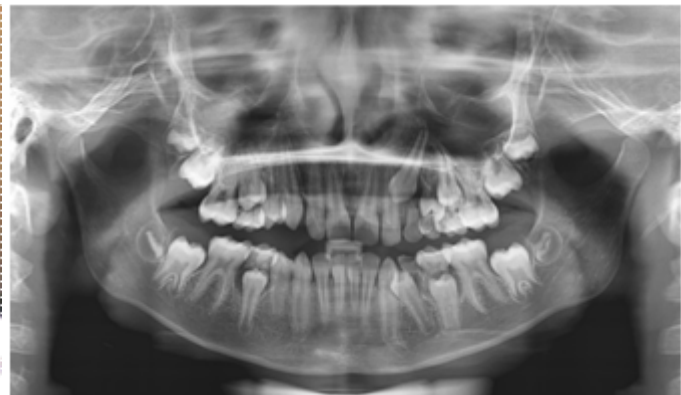


Fig.2.OPG and occlusal view showing radiolucency around the left impacted canine.

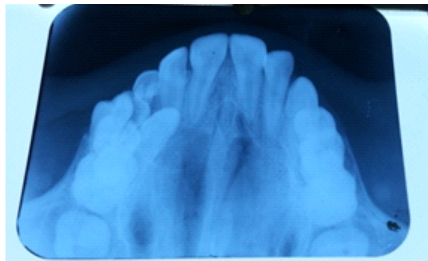


Fig.3. FNAC showing straw coloured fluid.



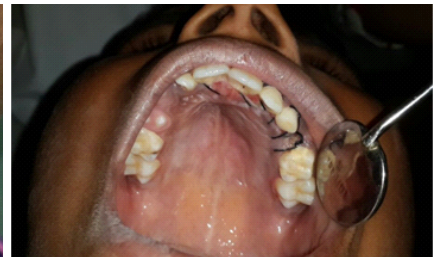
Fig.4. Intra-operative picture showing enucleation alongwith preservation of left maxillary permanent canine.



Fig.5. Post-operative acrylic plate placement for support.



Fig.6. Picture showing healing in 1 week follow-up.



DISCUSSION

Dentigerous cysts are usually solitary with multiple cysts reported on occasion in association with syndromes such as mucopolysaccharidosis, basal cell nevus syndrome and cleidocranial dysplasia.^[6]

It has also been documented that long-term concomitant usage of calcium channel blockers and cyclosporine A can result in bilateral mandibular dentigerous cysts. Gingival hyperplasia and impaired dentition are the most common features shared by most of these syndromes.^[7]

Dentigerous cysts appear to have a greater tendency than other simple jaw cysts (Radicular and OKC) to produce some resorption of the roots of adjacent teeth (Struthers and Shear, 1976). The important role of dental follicle in the resorption of bone has been demonstrated experimentally by Cahill and Marks (1980).^[1] It has been suggested that dentigerous cysts may be of either extrafollicular or intrafollicular origin and that those of intrafollicular origin may develop by accumulation of fluid either between the reduced enamel epithelium and the enamel, or within the enamel organ itself. It has also been suggested that the crown of a permanent tooth may emerge from a radicular cyst that was created at the apex of its deciduous ancestor.^[1]

The treatment choice should regard conservative managements with low morbidity particularly in young patients. Surgical excision and pathologic analysis of the lesion is essential for the definitive diagnosis. The maxillary antrum and nasal cavities may be displaced and destroyed by maxillary cysts. The cysts may cause fractures and become secondarily infected.^[1] Metaplastic and dysplastic changes may occur. An ameloblastoma, mucoepidermoid carcinoma, or squamous cell carcinoma may develop from the lining epithelium of a dentigerous cyst^[8]. Associated aneurismal bone cysts and hemangiomas have been reported in rare instances^[7]. Larger lesions may be surgically drained and marsupialized to reduce the pressure within the cysts, while smaller lesions may be completely removed to protect the affected permanent teeth. Dentigerous cysts are known to recur very rarely.^[7]

Motamedi and Talesh (2005) have detailed their experience in treating 40 large dentigerous cysts involving three or more teeth, referred to them over an 11-year period. Their view was that dentigerous cysts were usually easy to treat when small, but that the more extensive cysts were more difficult to manage. Based on the patient's age, cyst location and size, involvement of critical structures by the cyst, and likelihood of a normal eruption into occlusion of the impacted tissues, they developed therapeutic strategies in tooth involved. Aspiration with a 16 or 18 gauge needle was performed to confirm that they were dealing with cysts and not tumours, and these were followed by incisional biopsies to make definitive histological diagnoses.

In 34 cases, cyst enucleation and extraction of the impacted teeth were recommended. In these patients the impacted teeth were deemed unlikely to be useful, or lacked space for eruption. In six individuals, cyst enucleation with preservation of the impacted tooth was suggested; five had cyst enucleation with preservation of the accompanying maxillary or canine teeth, and one underwent decompression therapy. These teeth erupted normally when root formation was incomplete. Orthodontic treatment was used in cases requiring aided eruption or alignment. Only one instance of severe cyst covering the mandibular body and angle, impinging on the inferior alveolar nerve and term germs, required the use of decompression. The patient was an 11-year-old girl.^[1,9]

It should be borne in mind that radiographic findings are not diagnostic for dentigerous cysts because odontogenic keratocysts, unilocular ameloblastomas, and many other odontogenic and non-odontogenic tumours have radiographic features essentially identical to those of a dentigerous cyst. These are ruled out after a negative biopsy and histologic examination.^[3,4] Thus, in large dentigerous cysts an incisional biopsy from an accessible site is done to rule out other lesions which mandate separate, more aggressive, treatment protocols.

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