# Management of a large dentigerous cyst occurring in a six-year-old boy

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*A case of dentigerous cyst in a six-year-old healthy Brazilian boy, who had a diagnostic hypothesis of ameloblastoma and keratocyst because of the extension and radiographic appearance is presented. The importance of a previous incisional biopsy and consequent conservative treatment is discussed.*
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## INTRODUCTION

The dentigerous cyst (DC) is the most common of development odontogenic cysts of the jaws and accounts for approximately 20 percent of all epithelial-lined jaw cysts. It develops around the crown of an unerupted tooth by expansion of its follicle, when fluid or a space occurs between the reduced enamel epithelium and the enamel of an impacted tooth.[1,2] DC is more common around the crown of mandibular third molars, followed by maxillary canines and then maxillary third molars.[3] It has even been reported, albeit rarely, in association with impacted deciduous teeth.[4]

Clinically, it is often asymptomatic, so, generally, it is discovered by routine radiographic examination. However, it can become extremely large and is sometimes associated with cortical expansion and erosion.[5] In these cases, the differential diagnosis can be done with keratocyst and ameloblastoma.

This article describes a case of a large DC in a young boy, the diagnosis, treatment and follow up.

## CASE REPORT

A six-year-old white male was referred to the Special Care Dentistry Center (SCDC) of School of Dentistry of São Paulo University for investigation of a radiographic finding during orthodontic documentation. The lesion was asymptomatic and the past medical history of the boy was non-contributory. Clinical examination did not reveal any expansion in the right mandible, and it was covered by healthy-appearing and freely movable mucosa.

The panoramic radiographic exam revealed a large radiolucency multilocular lesion, extending from deciduous first molar to permanent second molar germ, measuring approximately 20 millimeters. Sclerotic border was presented in inferior border of the mandible. The root of the permanent first molar was preserved (Figure 1A).

Under the diagnostic hypothesis of ameloblastoma or keratocyst, an incisional biopsy was performed and the specimen examinated at the Department of Oral Pathology, School of Dentistry, University of Sao Paulo.

A computed tomography (CT), axial view, was requested and demonstrated a unilocular image circumscribed (Figure 1B).

Microscopic examination showed a fragment of fibrous connective tissue with a chronic inflammatory cell infiltrate and some small islands of inactive odontogenic epithelial rests. In some areas, the epithelial lining was composed by some layers of cuboidal stratified squamous epithelium with the formation of rete ridges. Histopathological diagnostic was dentigerous cyst (Figure 1C).

Under general anesthesia, curettage of the lesion was done, and the second deciduous molar and the germ of the performed permanent second molar, which were involved by the lesion, were removed.

The post-operative course was uneventful. At one-year follow-up, the patient had a good bony consolidation (Figure 1D).

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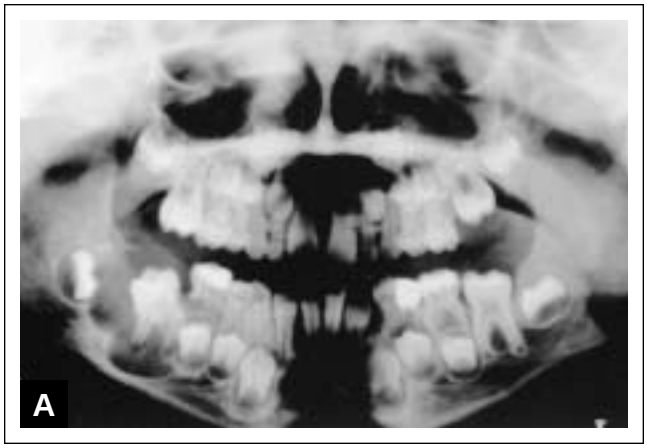


**Figure 1A.** Panoramic radiography showing a large multilocular radiolucent lesion in the right mandible.

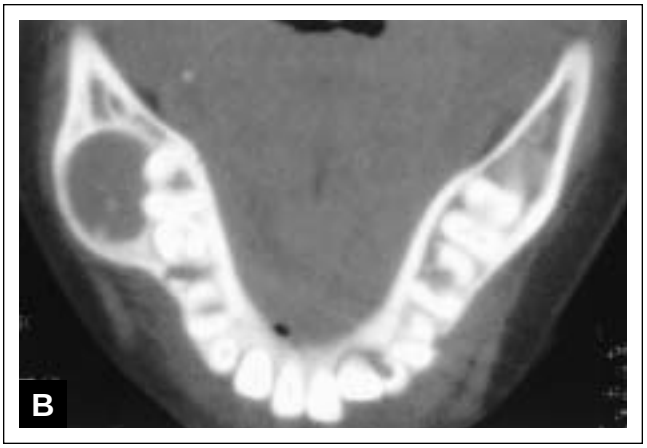


**Figure 1B.** CT (axial view) showing buccal and lingual expansion of the cortices, well-defined unilocular lesion.

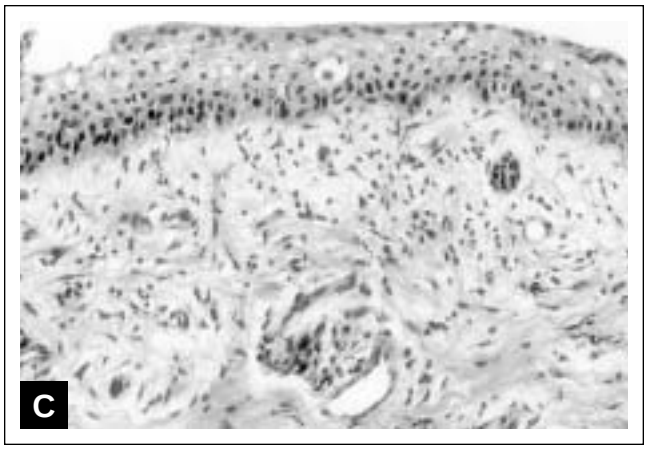


**Figure 1C.** Histological findings of DC

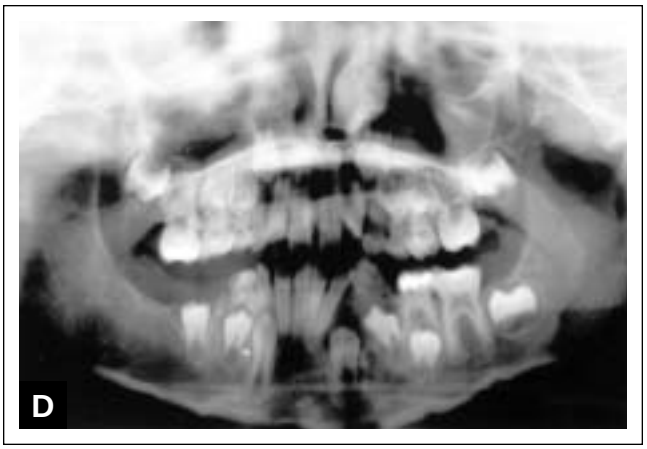


**Figure 1D.** One-year post-operative panoramic radiography demonstrating good osseous healing.

## DISCUSSION

Dentigerous cyst is commonly encountered in the practice of dentistry and oral and maxillofacial surgery. In pediatric patients, it also seems to be a common odontogenic lesion. However, in this reported case, the extension of the lesion and its radiographic aspect as well as patient age, 6 years old, were unusual.

Sousa *et al.*[6] studied the oral lesions in 2,356 biopsies of pediatric patients, over a 15 years period, in Oral Pathology Service at the University of São Paulo, Brazil, and observed that DC was the most frequent in the group of cystic lesions and the second most frequent lesion in the total survey. However, the youngest patient was 9 years old, 3 years older than our patient.

Most DC is painless and is found as an incidental radiographic finding. Generally, radiographs of DC show a well-defined, unilocular radiolucent lesion surrounding the crown of an unerupted tooth, which often has a sclerotic border.[7]

In the present case, a panoramic radiograph showed the multilocular appearance lesion. This imaging technique is useful as a first line film because it provides a survey of the entire mandible and a part of the maxilla. In some cases, CT scan is more helpful, especially for the assessment of large lesions like the present one. Axial sections can demonstrate buccal and lingual surfaces and can define areas of expansion and erosion.

Since DC is generally asymptomatic, they can damage surrounding structures before the cyst can be noticed. Possible complications of this cyst include: permanent bone deformation or pathological fracture, loss of essential permanent dentition, or development of an ameloblastoma or epidermoid carcinoma from the epithelial lining of the cyst. But this is still controversial. We agree with Shear[8] that ameloblastomas are not likely to arise from the epithelial lining of a DC.

In spite of the extension of the lesion, complications related in the literature as permanent bony defect or pathological fracture from its expansive destruction of bone did not occur in the present case.[9] Nevertheless, permanent second molar germ was lost during surgical intervention. The patient was orientated to do an osseous integrated implant to his rehabilitation when he achieves 18 years of age.

We point out the importance of an accurate diagnostic of the lesion for correct surgical planning, because the recommended therapy for ameloblastoma is more radical and the prognosis more obscure.

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