

Conservative treatment of ameloblastoma in child: A case report

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SUMMARY

Ameloblastoma is the common form of aggressive benign tumor of the jaws, but it is rare in childhood. The treatment of ameloblastoma is controversial. Surgical treatment of ameloblastoma in children follows the principles of the clinical and pathological aspects of the tumor and poses a special problem due to the incomplete growth of the jaws. With a unicystic ameloblastoma, the procedure of choice is a conservative approach. This paper describes the conservative treatment of a plexiform unicystic ameloblastoma in a child involving curettage of the tumor and the extraction of two teeth under local anesthesia, with a good prognosis of the case.

Key words: ameloblastoma; child; treatment.

INTRODUCTION

Tumors that involve the jaws are usually benign and stem from odontogenic tissues (1). Ameloblastoma is the most common form of aggressive benign tumors of the jaws (2). This condition is statistically more frequent in the molar region and ramus of the mandible. In the maxilla, it is often found in the molar region and, in some cases, it may extend into the maxillary sinus, nasal cavity or base of the skull (3). According to data in the literature, ameloblastoma can occur in all age groups, but the peak incidence is in the third and fourth decades of life and occurrence in childhood is rare (4-7). Very little is known regarding the etiology (8).

Ameloblastoma is generally asymptomatic and presents as a slowly enlarging facial swelling (9). However, the presence of the tumor may cause symptoms such as pain, malocclusion, the loosening of teeth or ulceration (4). The difficulty in the diagnosis is not surprising, as the epithelium of a dentigerous cyst and that of ameloblastoma are derived from the same embryonic source; thus, biopsy

remains the only method of confirming the diagnosis (8). Radiographically, ameloblastoma may present as a unilocular radiolucent area with a well-defined margin or with a multilocular aspect, often in the shape of soap bubbles or a honeycomb (5). It has been reported that unilocular ameloblastoma tends to occur in younger age groups (10).

There is difficulty in determining the most appropriate form of treatment for benign tumors of the jaws (1). The treatment of ameloblastoma is controversial and poses special problems in children (4). Numerous factors must be considered for treatment in this group, such as negative effects on function and potential bone involvement (10). Overall health, tumor size, location, duration, psychological impact, control of possible recurrence and possibility of periodic follow-up examinations should all be considered when formulating the surgical treatment (10).

Unicystic ameloblastoma is treated conservatively with decompression, enucleation and peripheral ostectomy as well as periodic long-term follow up. A more aggressive surgical approach may be considered when the condition recurs more than twice or according to the patient's wishes (4). Multicystic ameloblastoma requires more radical treatment, such as segmental resection, hemi-sectioning and total sectioning (2,9). In order to avoid the high recurrence rates stemming from conservative treatment, a biopsy is recommended due to possible mural involvement (5).

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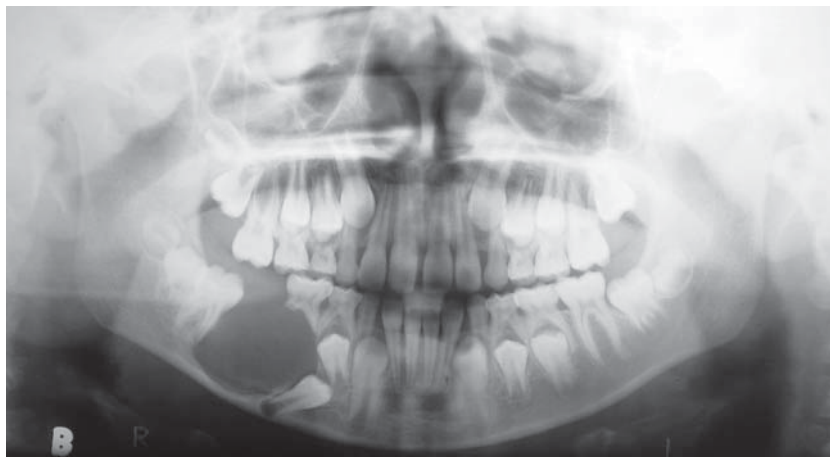


Fig. 1. Panoramic radiograph showing initial aspect of tumor



Fig. 2. Intra-oral view of tumor

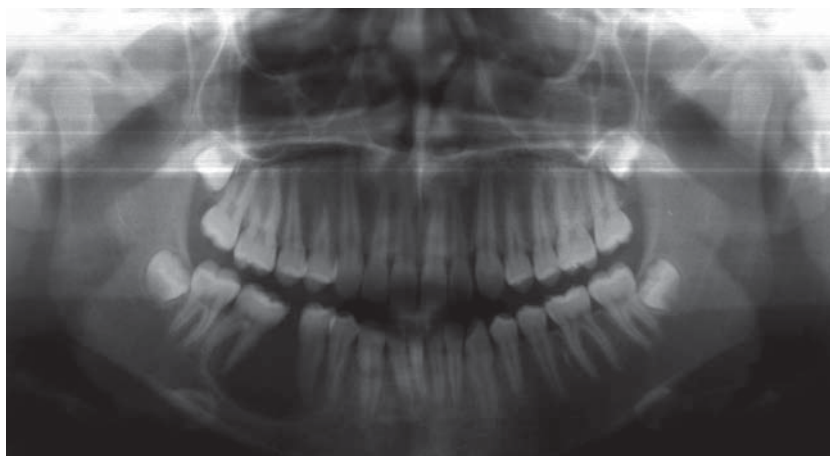


Fig. 3. Panoramic radiograph showing large unilocular radiolucent area three years after initial diagnosis

This purpose of this report is to describe the conservative treatment of a unicystic ameloblastoma in a young patient.

CASE REPORT

Patient LRS, female, 9 years of age, was referred to the Oral and Maxillofacial Surgery Service of

the Universidade Federal do Paraná, Curitiba, Brazil, for evaluation, complaining of swelling in the jaw on the right side. According to the parents' report, the patient had no systemic health conditions. The extra-oral examination revealed swelling in the region of the right mandibular body. The intra-oral examination revealed mixed dentition, the absence of right mandibular first molar and increased volume in this region. Panoramic (Fig. 1) and lateral oblique mandible radiography revealed the presence of a circumscribed radiolucent area approximately 40 mm in diameter located in the region of the right mandibular molars. There was also severe dislocation of right second premolar, which was lying horizontally on the base of the jaw.

Initially, the patient underwent exploratory puncture and incisional biopsy of the lesion under local anesthesia. The material was sent for histopathological analysis, which found fragments of odontogenic epithelial neoplasm with plexiform pattern invasion compatible with plexiform ameloblastoma. Following the diagnosis, the parents were informed of the condition and proposed treatment. However, there was treatment dropout for personal reasons. After three years, the patient returned to the treatment.

In a new clinic examination revealed swelling in the right posterior mandible. The intra-oral examination revealed a reddish lesion on the gums between the permanent right second premolar and first molar (Fig. 2). A new panoramic radiograph (Fig. 3) was performed, which revealed a large well-defined unilocular radiolucent area involving the region of the erupted right mandibular premolars.

Due to the patient's age and the biological behavior of the tumor over the three-year period, the treatment option was for curettage (Fig. 4) with the extraction of two adjacent teeth in order to generate a margin of safety. The procedure was performed under local anesthesia. The material was sent for histopathological analysis, which revealed a different aspect of ameloblastoma, most likely the plexiform

variety with dentigerous cyst walls (Fig. 5). The patient has been in follow up for two years with no functional or aesthetic complaints (Fig. 6).

DISCUSSION

The treatment of ameloblastoma is controversial. In children, the treatment is complicated by three factors: 1) continuing facial growth, different bone physiology (greater percentage of cancellous bone, increased bone turnover and reactive periostium) and presence of unerupted teeth; 2) difficulty in initial diagnosis; and 3) predominance of the unicystic type of ameloblastoma (1).

Unicystic ameloblastoma is radiologically characterized by a unilocular aspect and it is less aggressive than the solid type, but has the potential for recurrence (5). A unicystic lesion involving a tooth may simulate a dentigerous cyst (9).

However, there is more extensive root resorption/amputation in the standing teeth in comparison to that found with a dentigerous cyst (11).

The treatment of ameloblastoma ranges from a conservative approach to radical resection (12). The evaluation of effectiveness of the treatment is based on the rate of recurrence, which varies with the different types of ameloblastoma (12). The rate of recurrence following radical treatment is lower than that following conservative treatment (5). A large number of studies report difficulties in determining the type of treatment for each patient (13,14).

Radical resection of an ameloblastoma in children should be avoided (15). Such treatment could result in deformity and dysfunction of the face, which are bound to influence both the physical and psychological development of the child later in life (5). Conservative treatment is widely employed for pediatric unicystic ameloblastoma, despite the potential for recurrence. A number of authors argue that, in cases of recurrence, a second surgery should be more extensive, but overtreatment should be avoided (16).

Conservative treatment consists of decompression followed by enucleation and enucleation alone. Before making the decision, the following factors

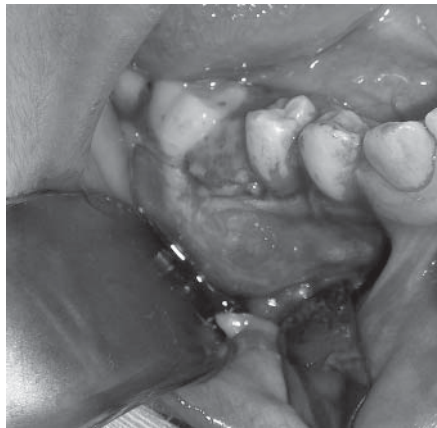


Fig. 4. Curettage of tumor

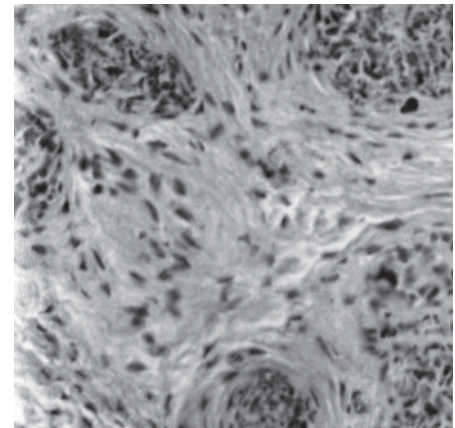


Fig. 5. Histological image of tumor confirming diagnosis of ameloblastoma



Fig. 6. Panoramic radiograph after two years of follow up

should be evaluated: clinical type, subdivision of cystic type, age, site, size, patient's wishes, compliance and understanding, projected recurrent condition and rate, physical and psychological impacts and the development of new materials and surgical techniques (4).

In the present case, the choice of conservative treatment with curettage and the extraction of two teeth proved effective. If the diagnosis had been a condition with a lower rate of recurrence, the extraction of teeth would not be performed. However, as ameloblastoma is an aggressive condition, the extraction of two teeth is a way of minimizing the possibility of recurrence. In the case reported here, the conservative surgical treatment of mandibular ameloblastoma resulted in no recurrence as well as excellent postoperative function and aesthetics.

CONCLUSIONS

Conservative treatment should be the first choice for treating ameloblastomas in children. The treatment should be performed as soon as possible after diagnosis in order to prevent possible proliferation in adjacent tissues.

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