

Adenomatoid Odontogenic Tumor: Case Report

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Abstract

Adenomatoid Odontogenic Tumor (AOT) is a benign tumor, most common in the maxilla, characterized by slow, progressive, painless growth of firm consistency, the size of which usually does not reach large proportions. There are three types: extrafollicular, follicular and peripheral. It usually develops around or overlaps adjacent teeth. This article describes a case of extra-follicular adenomatoid odontogenic tumor in a 13-year-old male, located in the maxilla treated by enucleation. The patient is in postoperative follow-up, without any clinical and radiographic signs of lesion recurrence.

Keywords: Odontogenic tumor; Maxilla; Pathology

Introduction

Adenomatoid Odontogenic Tumor (AOT) is a benign lesion from the dental lamina or its remains. It is a relatively uncommon neoplasm that accounts for about 3% of all odontogenic tumors being more common in the maxilla and in females, more often associated with impacted canines [1-3]. There are three pathological types of AOT, follicular, extrafollicular and peripheral, all of which have the same histological identity. The follicular type is a central lesion associated with an impacted tooth, while extrafollicular is similar to the follicular type but has no relation to an even tooth. It usually develops around or is superimposed adjacent teeth [4-6]. Radiographically, AOT is usually unilocular, although some cases have been reported multilocular, the differential diagnosis should include a dentigerous cyst. Radiographically, the pericoronal radiolucency of a dentigerous cyst occurs more frequently in the mandibles, and does not extend over the cemento-enamel junction. However, AOT often involves the crown, expansion of the tumor causes displacement of adjacent teeth, and tooth displacement is more common than root resorption [7].

Case Report

Patient D.E.V.R., male, caucasian, 13 years old, asymptomatic sought care at the dental clinic in Sorocaba, São Paulo. He presented a panoramic x-ray in April 2005 showing the lesion in the region of element 14 (Figure 1). Clinically presented a volumetric increase in maxilla, with perception by the patient about 6 months ago, he also did orthodontic treatment until 2009 (Figure 2). Computed tomography and panoramic radiography revealed a well-defined unilocular radiolucency of the maxilla region in the right upper premolar (14) (Figure 3). The differential diagnosis based on the clinical and radiographic findings included a dentigerous cyst, unicystic ameloblastoma and AOT. As treatment, intraoral surgery was performed, with a mucoperiosteal flap elevated to expose the lesion (Figure 4). The lesion was carefully separated from the surrounding bone and the enucleation and removal of the dental

element were performed. The surgical specimen was fixed in 10% formol and sent to the anatomopathological examination, where the diagnosis of Adenomatoid Odontogenic Tumor (AOT) (Figure 5 and 6). In January 2011, the patient returned, and new exams were requested, such as panoramic radiography and tomography, where there was no recurrence of the lesion (Figure 7).



Figure 1: Radiograph of April 2005, showing the beginning of the lesion in the right upper premolar region

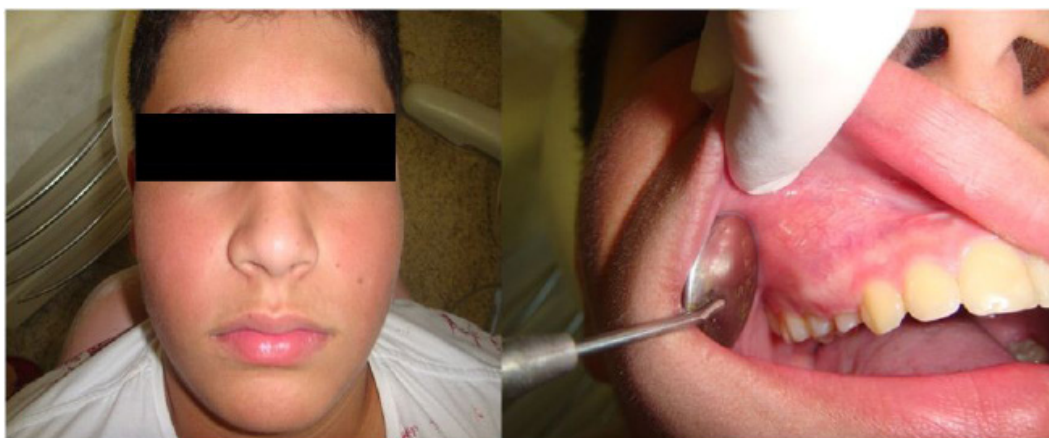


Figure 2: (A) Initial image: clinical profile and intra-oral aspect. (B) volumetric increase in the right upper jaw region

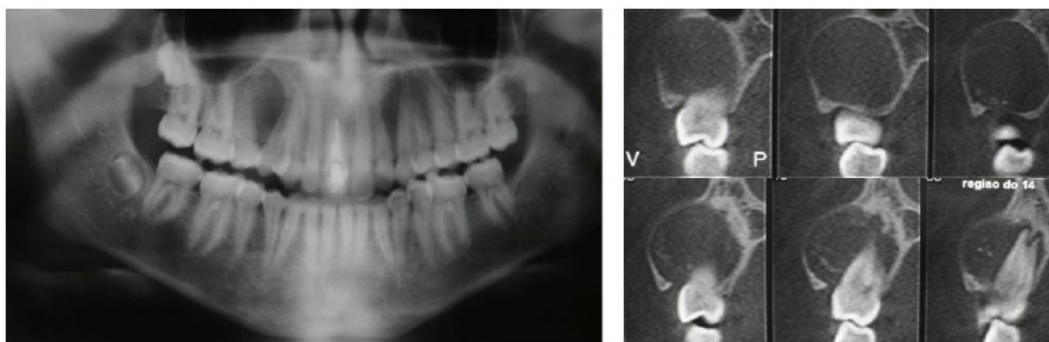


Figure 3: Panoramic radiograph and tomography of the patient's return in August 2009. Presenting a unilocular image in the right upper premolar region



Figure 4: (A) Access surgery in the maxilla region. (B) Enucleation of AOT and removal of the dental element (14). (C) Surgical specimen

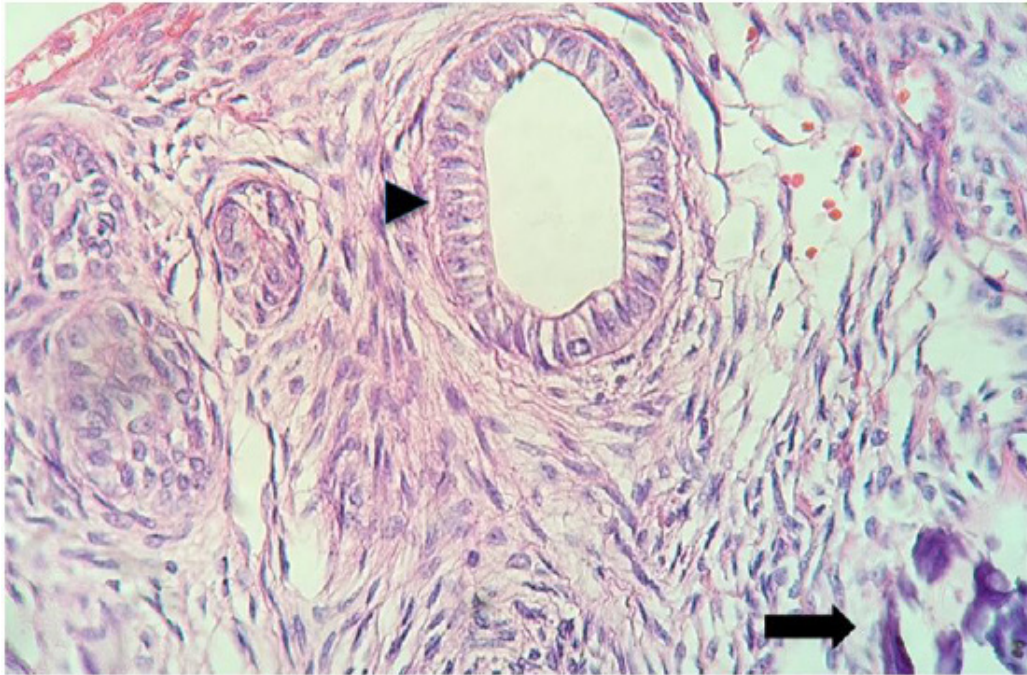


Figure 5: AOT – observation of follicular structures with palisade cylindrical cells and polarized nuclei (arrowhead). It is also observed a region with presence of calcification area (arrow). 400x

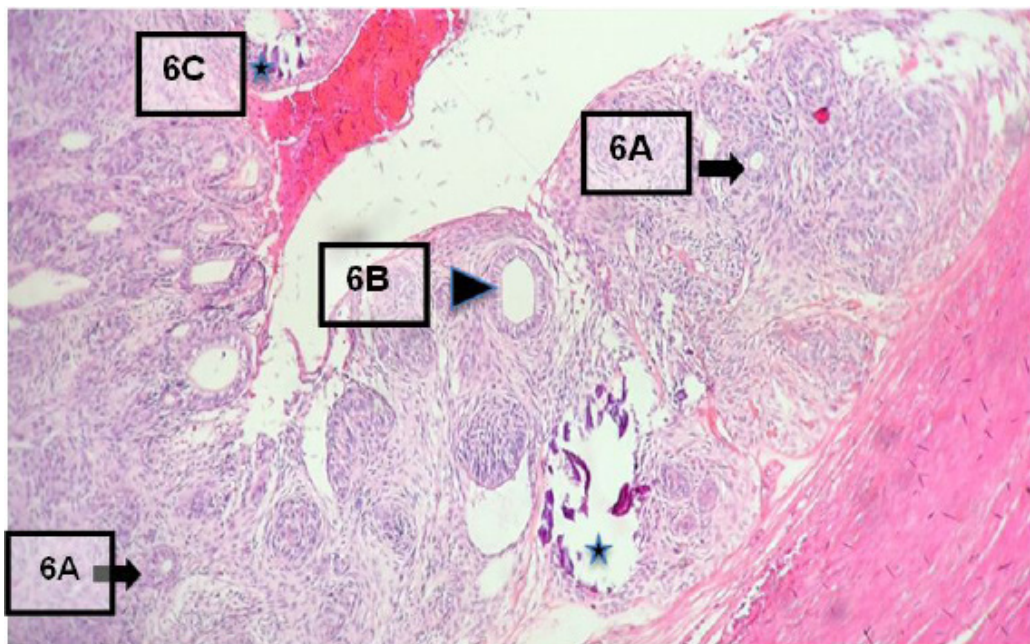


Figure 6: 100x magnification, where we observed a tumor with capsule of dense connective tissue, proliferation of tumor cells forming ductal structures (A) and follicular structures with cylindrical cells in palisade and polarized nuclei (B). Note the presence of focus of calcification (C)

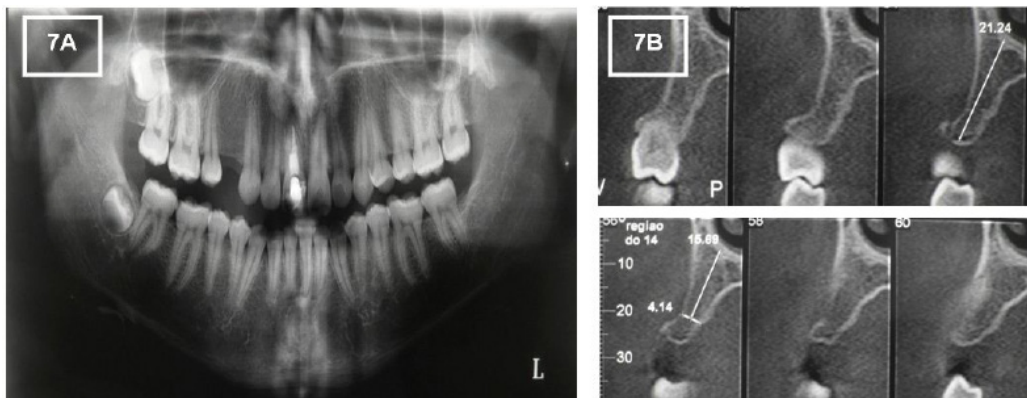


Figure 7: Panoramic radiography (A) and postoperative tomography in January 2011 (B). There is no recurrence in the region where the tumor was removed

Discussion

Adenomatoid odontogenic tumor (AOT) is a benign lesion, rare, slow growing and progressive. Its occurrence represents 3% of all odontogenic tumors [1-3]. The female population has the highest incidence of reported cases, with a prevalent age range of 10 to 30 years, mainly the second decade of life. It affects the maxilla in its anterior portion, including an impacted or supernumerary tooth, which may be the superior canine or lateral incisor, in which the first is the most affected [5,7,8]. The case report in question is within the Group of higher incidence, but male, being in the age group of 13 years, in the case reported the tooth involved was a non-impacted pre molar.

The patient did not report pain only, complaining of enlargement or swelling in the region, and clinically and radiographically presented a firm consistency with ambiguous margins [3,4].

There are three pathological types of AOT, follicular, extrafollicular and peripheral, all of which have the same histological identity [4-6]. The reported case is a extrafollicular type. The extra follicular form is rarer than the follicular form [2,9,10].

Radiographically, the AOT appears as a radiolucent image associated with an impacted tooth or lateral to the roots of teeth, with presence of calcifications, varied form, external resorption, periodontal space increase or loss of the periodontal ligament can be visualized [2]. These facts could be observed in the radiographic exams of this clinical case, such as the radiolucent image associated with a tooth, but not impacted.

The treatment performed was enucleation as well as concomitant with cases on AOT [1-3,9,10].

Histologically, this tumor is well defined and refers to the presence of various arteries, from the odontogenic epithelium, grouped in structures similar to rosettes and scrotal connective tissue stroma, the presence of follicular structures with palisade and polarized cells and regions with presence of Area in calcification. It is a capsule of dense connective tissue, proliferation of tumor cells forming ductal structures and follicular structures with cylindrical cells in palisade and polarized nuclei and the presence of foci of calcification. The histological finding of the piece corroborates the majority of the authors [2-5].

The patient arrived in 2009 at the Dental Clinic of the Faculty of Dentistry of the Paulista University in Sorocaba with a radiograph of the same year (2009). After the study of this panoramic radiograph, a computed tomography of the region suspected of injury was requested. The patient has already undergone orthodontic treatment, so we requested the radiographs performed prior to and during their treatment. In a panoramic x-ray of 2005 the lesion was already amenable to observation. That is, during the orthodontic treatment the lesion of adenomatoid odontogenic tumor was already present, but it was not diagnosed by the dental surgeon. Dentists should carefully and radiographically evaluate all their patients prior to the installation of orthodontic appliances. Early diagnosis, or as early as possible, allows the surgical therapeutic approach to involve less area. The delay in diagnosis contributed to the increase of the lesion.

Final Considerations

The treatment of choice for AOT is surgical with enucleation. The tumor does not usually have aggressive behavior, and recurrences are rare. The importance in the diagnosis initially observed in panoramic radiography, for which it should be requested by clinical professionals and specialists. And the referral for anatomopathological confirmation. In the present case, the patientis being followed up, with out any signs of radiographic and clinical recurrence.

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