AMELOBLASTIC FIBRO-ODONTOMA IN THE RIGHT MANDIBLE: A CASE REPORT

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INTRODUCTION

Ameloblastic fibro-odontoma (AFO) is an unusual benign odontogenic tumor, mixed with the presence of epithelial and ectomesenchymal components that are considered neoplastic (Neville et al., 2016). It has a slow, expandable development, well encapsulated and not very aggressive (Gantala et al., 2015). Patients initially present with painless edema, usually in the posterior region of the mandible or maxilla, causing elayed eruption, displacement or loosening of the teeth involved. As the lesion progresses, it can cause bone expansion and, later, facial asymmetry (Chen et al., 2005; Saeed et al., 2019). Its radiographic aspectis a unilocular or multilocular lesion, predominantly radiolucent, well defined, containing varying levels of radiopaque material of irregular shape and size resembling a complex odontoma, with density similar to that of teeth. This is composed of proliferating odontogenic epithelium incorporated in the cellular ectomesenchymal tissue similar to the dental papilla, microscopically presenting epithelial cords and nests similar to the dental blade and enamel organ together with the presence of dentin, enamel and cement with varying degrees of inductive alteration and formation of dental hard tissue, showing different degrees of mineralization (Barnes et al., 2005; Buchner et al., 2013; Chrcanovic and Gomez, 2017).

According to the literature, (AFO) is not an aggressive tumor and can be treated properly with conservative curettage or enucleation and radical surgical procedures such as segmental resection or hemimandibulectomy are rarely necessary (Asliер et al., 2016). In this report, we presented a case of (AFO) located in the right posterior portion of the mandible, associated with element 47, with resection, curettage, bone grafting and due to the fragility of the bone boards, a 2.0 mm angled plate was fixed for the purpose of stabilization and avoid possible pathological fracture in a 15-year-old teenager.

Report of Case

A 15-year-old adolescent was referred to the Surgery and Stomatolog department of Hospital Municipal São José de Joinville - Santa Catarina for evaluation of intraoral edema in
the posterior region of the right mandible present for two months. No history of local trauma or infection. The patient denied any pain or paresthesia in the area. The intraoral examination revealed the absence of the lower second molar on the right side and a small increase in volume in the ipsilateral alveolar ridge. The panoramic radiograph showed that the tooth absent on physical examination, 47, was impacted in an angled position close to the mandibular basilar cortex, in close contact with the mandibular canal and the distal root of the first permanent molar involved by an injury with mixed multilocular radiolucency with well-defined focal opacifications, with the absence of 48 (Figs 1 and 2).

Cone beam computed tomography revealed an extensive, poorly circumscribed, multilocular radiolucency of the right mandible, which extended from the first permanent molar to the branch, with slightly dense flake-like opacities, the second molar is impacted and closely associated with the lesion containing calcifications similar to teeth scattered around the center of the lesion. Oral expansion was observed without perforation of the involved cortices. The differential diagnosis included composite odontoma, calcifying odontogenic cyst, calcifying epithelial odontogenic tumor and adenomatoid odontogenic tumor (Figs 3 and 4).

Description of the surgical procedure
The lesion was completely enucleated by an extraoral route under general anesthesia with access at the mandibular angle. During the same procedure, tooth 47, lower right second molar, associated with the lesion could not be recovered and was removed along with the tumor. Curettage of the remaining boneal veolus was performed, filling with bone grafting in its entirety with Geistlich Bio-Oss® material and later a fixation with an angled Osteomed® plate for osteosynthesis of the 2.0 mm system. Finishing the procedure with sutures in planes.

Histopathological studies
The sample was sent for histopathological analysis and stained with hematoxylin and eosin. Microscopic examination revealed islands and narrow strand of varying sizes of odontogenic epithelium, consisting of stellated cells in the central area and columnar cells in the peripheral layer within rich cellularized mesenchymal tissue amid loose connective tissue similar to that of the dental papilla. In addition, there were some calcified structures consisting of foci of formation of dentinoid and osteo cementary matrices in close relationship with the epithelial structures. Based on the above findings, a histopathological diagnosis of (AFO) was reached (Figs 5 and 6).
RESULTS

Proservation analysis

Proservation and follow-up of the case was carried out for a period of six months, and a new radiographic scan revealed full healing of the lesion and neoformation of the adjacent bone tissue. The case was considered very satisfactory (Figs 7 and 8).

DISCUSSION

There is still some controversy in the literature, raising doubts between the diagnosis of ameloblastic fibro-odontoma (AFO), which is a rare benign odontogenic tumor, but with histological characteristics similar to those of ameloblastic fibroma (AF) (Sreenath et al, 2014; Peters et al, 2018). These lesions represent separate entities or are the same lesion, however, at different stages of evolution (Chen et al, 2005; Buchner et al, 2013). Despite the controversies between the histogenesis of these lesions and the histological similarities, these tumors must be considered as different and distinct entities (Ogli et al, 2007; Cavalcante et al, 2009; De Souza Tolentino et al, 2010; Nelson and Thompson, 2014). According to the World Health Organization, ameloblastic fibro-odontoma (AFO) is a tumor with histological characteristics similar to those of ameloblastic fibroma (AF), but with inductive changes that lead to the formation of enamel or dentin (Chen et al, 2005; Yagishita et al, 2001).

The importance of the distinction between (AFO) and (FA), are associated with recurrence rates and their potential for transformation and treatment. While (FA) has a recurrence rate between 18% and 35% and may undergo malignant transformation into ameloblastic fibrosarcoma, its treatment may be by marginal resection for recurrent cases, on the other hand (AFO) can be treated with simple curettage and recurrence rate is approximately seven percent, with extremely rare malignant transformation (de Souza Tolentino et al, 2010). As the (FA) matures, it can differ in the form of one (AFO) and, in turn, turn into an odontoma. However, as (AFO) presents, on average, a younger age group than a patient with (AF), this suggestion may be controversial. Despite the histological similarities, these tumors must be considered different and distinct entities (Nelson and Thompson, 2014).

(AFO) is usually diagnosed in the first two decades, 98.8% of cases occur before the age of 20, with no significant predilection for gender or anatomical region (Philipsen et al, 1997; Pontes et al, 2012). The epidemiological study of these rare lesions is of great importance, as it provides information that can improve the accuracy of the diagnosis, providing decisions and guidance to pathologists and surgeons so that they can refine the treatment plan and optimize the final clinical result (Chrcanovic and Gomez, 2017).

The two most common clinical manifestations are failure of the eruption and local edema, which can lead to displacement of the erupting tooth. Often, the initial diagnosis is made when an x-ray is taken to determine why a tooth has not erupted (Neville et al, 2016). When this included element is associated with an intraosseous lesion, usually asymptomatic, one must take into account the differential diagnosis of (AFO) including lesions with varied radiographic patterns, such as calcifying epithelial odontogenic tumor, calcifying odontogenic cyst and adenomatoid odontogenic tumor (Slootweg, 1981). (AFO) is found, through a well-performed clinical examination, together with the collection of past medical and dental history data, and request for imaging tests, for correct diagnostic conduction. The recommended treatment is conservative cleavage with curettage, which generally has an excellent prognosis. It was suggested that unerupted teeth related to the lesion be removed to avoid possible recurrences (Sreenath et al, 2014).

In this present case, in addition to confirmation of (AFO), enucleation, curettage, inductive bone grafting and the installation of an angled plate were performed in order to stabilize and prevent possible pathological fracture of the mandible.

Proservation and follow-up of the case were carried out for a period of six months, and a new radiographic examination revealed complete healing of the lesion and neoformation of the adjacent bone tissue.

CONCLUSION

Ameloblastic fibro-odontoma (AFO) is a rare benign mixed odontogenic tumor. It is usually found in the first two decades of age, with no sex predilection and is usually located in the posterior regions of the maxilla and mandible. They are diagnosed by local edema and or absence of permanent dental elements through routine clinical, radiographic and tomographic examinations. The correct diagnosis based on clinical, radiological, tomographic and histopathological findings provides excellent conclusive management of these cases. Resection, curettage and bioinductive bone grafting provided an excellent result with a satisfactory prognosis.

Conflict of interest: The author declares no conflict of interest.

References

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