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Case report of a dilated odontome in the posterior mandible

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ABSTRACT

INTRODUCTION: *Dens invaginatus* (*dens in dente*) is a developmental malformation resulting from an invagination of enamel organ into the dental papilla, beginning at the crown and sometimes extending into the root before calcification occurs. Dilated odontome is the most extreme form of dens invaginatus and it is extremely rare in the posterior mandible.

PRESENTATION OF CASE: A 47 years old female patient with occasional episodes of diffuse pain and discomfort in the left posterior mandibular region. The extra-oral examination showed slight facial asymmetry. Panoramic and intra-oral X-rays show an intraosseous circular formation with radiopaque external limits and radiolucent interior.

DISCUSSION: Computerized tomography scan reveals the bone integrity around the formation, as well as the independence of the neuro-vascular structures of the region. The most likely diagnostic option was dilated odontome. The enucleation procedure was carried out, and the fragments were sent to histopathological examination that revealed a diagnosis consistent with a dilated odontome.

CONCLUSION: In this case, the conservative surgical approach after planning was effective and predictable in the treatment of the pathology and patient symptoms without major complications.

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1. Introduction

Dens invaginatus (*dens in dente*)—(World Health Organization-International Classification of Diseases-10 K00.2) is a developmental malformation resulting from an invagination of enamel organ into the dental papilla, beginning at the crown and sometimes extending into the root before calcification occurs [1]. The incidence of this pathology varies between 0.04% and 10% in the literature and commonly occurs in permanent maxillary lateral incisors, followed by maxillary central incisors, premolars, canines and less frequently in the molars. They are rarely seen on the posterior mandible [2].

In the most severe form, named dilated odontome, the tooth has a circular or oval shape with a radiolucent interior and presents a single structure, often with a central soft tissue mass. Occurs more frequently in lateral upper incisors region and are rare in the mandibular molar region. They are more common in women and usually occur in the second decade of life [3,4].

We consider this case as a rare situation due to the localization in the posterior mandibular region, in the third molar region.

2. Presentation of case

A 47 years old female patient presented at clinic for routine treatments. General medical history did not revealed any considerable problems. The patient reported occasional episodes of diffuse pain and discomfort in the left posterior mandibular region.

The extra-oral examination showed slight facial asymmetry and panoramic and intra-oral X-rays shows an intraosseous circular formation with radiopaque external limits and radiolucent interior (Fig. 1). To better characterize the formation, a computerized tomography scan was requested (Fig. 2) where the bone integrity around it is clear as well as the independence of the neuro-vascular structures of the region.

The enucleation procedure was carried out under local anesthesia, performing a full-thickness flap, conservative osteotomy for formation exposure (Fig. 3), sectioning of the formation and fragment enucleation.

This case report is compliant with the CARE Guidelines [9].

3. Discussion

The dilated odontome is the most extreme form of *Dens Invaginatus*. It is a developmental malformation with a profound enamel organ invagination, resulting in crown and root dilatation. Although it's etiology is unknown several theories have been considered such

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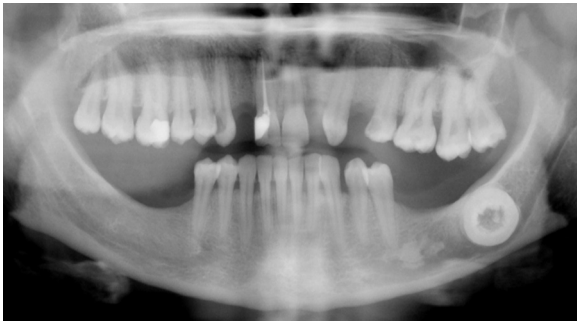


Fig. 1. Panoramic view, pre-op.

as cells development delay, trauma, infection or pression caused by nearby tooth germ [1].

Accordingly to the literature, the dilated odontome is more frequent in the upper lateral incisors region [2], however, several authors have been reporting cases in the posterior mandible region. Differential diagnosis is needed with osteoma, odontome and osteoblastoma [3–7].

The formation found is in accordance to the description found on the literature [8] of a dilated odontome, in regard with its radiographic, morphological and histopathological characteristics.

Macroscopically, the formation was rounded and externally was of an enamel-like tissue.

The fragments were sent to histopathological examination (Fig. 4).

A panoramic X-ray was performed immediately after the surgery, the post op was followed for 10 days, one month and a one year follow up appointment. Panoramic exposure was scheduled (Fig. 5). Pre-op symptoms disappeared after soft tissue healing.

4. Conclusions

This type of tumor needs a broader study that can clarify its etiology as well as epidemiological data; panoramic X-ray is critical in initial diagnosis of every new patient; conservative surgical

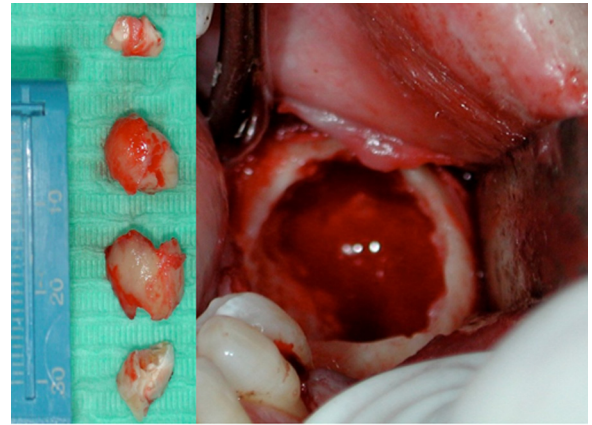


Fig. 3. Intra-oral view after removal and macroscopic aspect.

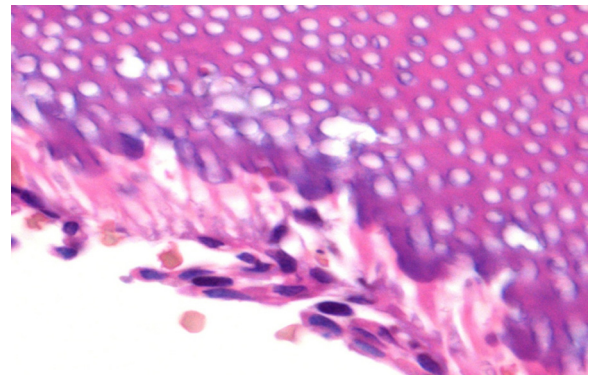


Fig. 4. Hematoxylin and eosin stain, X100.

approach under local anesthesia seems to be effective and predictable in the treatment of the pathology.

Conflict of interest

None to declare.

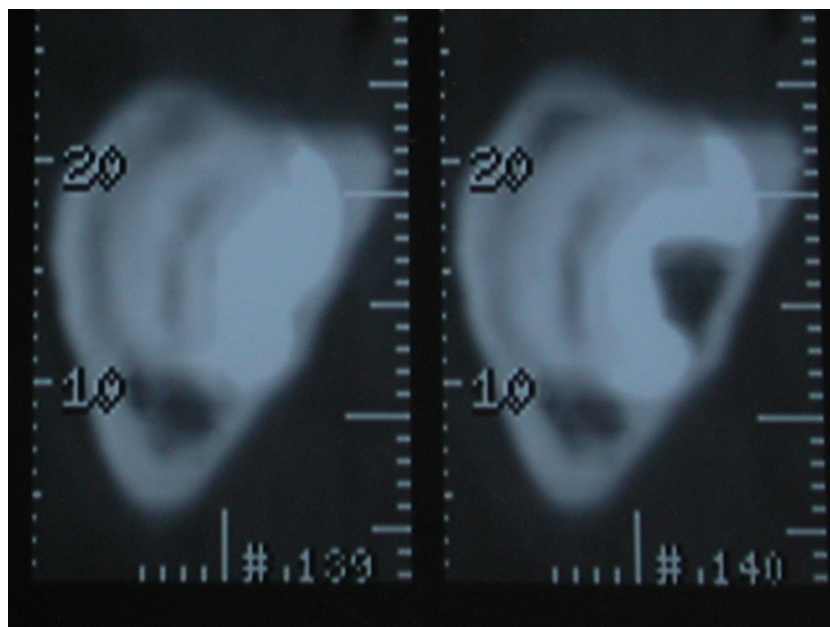


Fig. 2. C.A.T. scan, coronal view, pre-op.



Fig. 5. Panoramic view, follow up 2 years.

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Nothing to declare.

Ethical approval

N/A to this case report. Consent was obtained from the patient for publication of this case report and accompanying images.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images.

Author contribution

Bruno Leitão de Almeida was involved in the treatment plan, surgical procedures and writing the paper; António Silva was involved in the treatment plan and surgical procedures; Miguel Pereira was involved in data collection; Stephanie Nunes and Mariana Silva were involved in research and data collection.

Guarantor

Bruno Leitão de Almeida accept full responsibility for the work and/or the conduct of the study, had access to the data, and controlled the decision to publish.

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