



Case Report

Ossifying fibroma: report on a clinical case, with the imaging and histopathological diagnosis made and treatment administered[☆]



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ABSTRACT

The aim was to report on a case of ossifying fibroma, consisting of a benign fibro-osseous lesion characterized by slow growth and proliferation of fibrous cellular tissue, bone, cement or a combination.

A 29-year-old male patient was attended at a hospital, after he had suffered a car accident. During the clinical examination, increased volume in the region of the right side of the mandible was observed, and a fracture in the middle third of the face was suspected. The tomographic examination showed an image suggestive of fracturing of the left-side zygomatic complex, without displacement, and with a well-delimited radiopaque image of the mandible. The patient was sent to a hospital where panoramic radiography, posteroanterior radiography of the face and telerradiography were performed in order to better document the case. An incisional biopsy was performed. Histopathological examination showed the presence of a benign bone lesion suggestive of ossifying fibroma. Surgery was performed in order to completely remove the lesion, with fixation using a reconstruction plate. A new anatomopathological examination confirmed the diagnosis.

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Fibroma ossificante: relato de caso clínico, diagnóstico imaginológico e histopatológico e tratamento feito

RESUMO

Relatar um caso de fibroma ossificante, uma lesão fibro-óssea benigna caracterizada por crescimento lento e proliferação de tecido celular fibroso, osso, cimento ou uma combinação.

Paciente do sexo masculino, 29 anos, foi atendido em um serviço de emergência, após sofrer um acidente automobilístico. Durante o exame clínico observou-se um aumento de

Palavras-chave:

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Tomografia

[☆] Work developed in the Hospital de Pronto Socorro João XXIII, Belo Horizonte, MG, Brazil.

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volume na região mandibular direita e suspeita de fratura no terço médio da face. O exame tomográfico demonstrou imagem sugestiva de fratura do complexo zigomático esquerdo, sem deslocamento, e imagem radiopaca bem delimitada na mandíbula. O paciente foi levado para o hospital, onde foram feitas uma radiografia panorâmica, PA de face e telerradiografia para melhor documentação do caso. Foi feita uma biópsia incisional. O exame histopatológico teve como resultado lesão óssea benigna, sugestiva de fibroma ossificante. Fez-se uma cirurgia para remoção completa da lesão e fixação com uma placa de reconstrução. O novo exame anatomopatológico confirmou o diagnóstico.

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Introduction

The term ossifying fibroma includes lesions with similar histological compositions and different forms of clinical behavior. Ossifying fibromas are benign asymptomatic neoplasms of the maxillae that generally have slow growth and present proliferation of fibrous cell tissue, with a varying quantity of bone products that include bone, cement or a combination of these.^{1,2} They are often considered to be fibro-osseous lesions.

Ossifying fibromas occur most often in the posterior region of the mandible²⁻⁵ and may also occur in the maxilla, commonly in the region of the canine fossa and in the area of the zygomatic arch. They are more common in females,^{3,5-7} and present greatest incidence in the third and fourth decades of life.^{5,8} Facial asymmetry and tooth displacement may occasionally occur.

Upon radiographic examination, it is observed that the edges of the lesion are usually well defined, with a thin radiolucent line that represents a fibrous capsule. The internal structure shows mixed radiolucent-radiopaque density, with a pattern that depends on the form and quantity of the calcified material that is present.

The differential diagnosis is generally made with other lesions that present mixed radiolucent-radiopaque internal structures, especially with fibrous dysplasia.^{6,9,10} These two types of lesion present similar clinical, radiographic and microscopic characteristics. The well-delimited clinical-radiographic appearance of ossifying fibroma and the ease with which it can be separated from normal bone is the main differential in relation to fibrous dysplasia. Other lesions should also be taken into consideration as differential diagnoses: calcifying odontogenic cysts, calcifying odontogenic tumors (Pindborg) and adenomatoid odontogenic tumors.

The circumscribed and well delimited nature of the lesion generally allows enucleation of the tumor.² There may be a need for reconstructive surgery in order to surmount esthetic and functional problems after removal of the lesion.

The aim of this study was to report on a clinical case of ossifying fibroma that was treated by means of tumor excision through marginal resection, in association with reconstruction using a titanium plate. This was a case in which after an accident and identification of facial fracturing, a clinical examination was conducted in which the presence of a lesion in the mandible was observed.

Case report

A 29-year-old man was attended in a hospital after suffering a car accident. He was examined by the surgical and the oral and maxillofacial traumatology team, and during this examination, increased volume in the right mandibular region and the middle third of the left side of the face was observed, in association with a blepharohematoma.

A computed tomography scan of this patient's face was requested. This showed fracturing of the left-side zygomatic complex, without displacement, and it was decided to implement conservative treatment. In the mandible, a hyperdense image with well-defined edges, separated from the adjacent bone by a thin hypodense line, was noted. Inside the lesion, an image of mixed density was observed (Fig. 1A-D).

After release from the emergency service, the patient was taken to the hospital, for follow-up on the fracturing in the zygomatic complex and for a better diagnosis of the mandibular lesion to be made. A posteroanterior panoramic radiograph of the patient's face and telerradiography were requested in order to better document the case (Figs. 2-4).

An incisional biopsy was performed, and the material was taken for analysis in the histopathological anatomy laboratory of a university. The analysis showed that this was a benign bone lesion, suggestive of ossifying fibroma. Based on these results, it was decided to undertake a surgical procedure.

The patient underwent an elective surgical procedure under general anesthesia and nasotracheal intubation. Before opening the surgical access, dental osteosynthesis was performed using an Erich bar, along with maxillary-mandibular blockade using steel wires, for reference to and maintenance of the patient's occlusion. The surgical access chosen was the Risdon access (submandibular). The lesion was removed completely, with rigid internal fixation using a titanium system 2.7 reconstruction plate (Fig. 5). Radiographs were produced for postoperative follow-ups. A new anatomopathological examination confirmed the diagnosis. The patient underwent postoperative follow-up for 1 year, without any signs of recurrence (Fig. 6).

Discussion

Ossifying fibromas are formed from pluripotent mesenchymal cells that originate from the periodontal ligament. These cells are capable of forming bone tissue and cement.^{1,11} However,

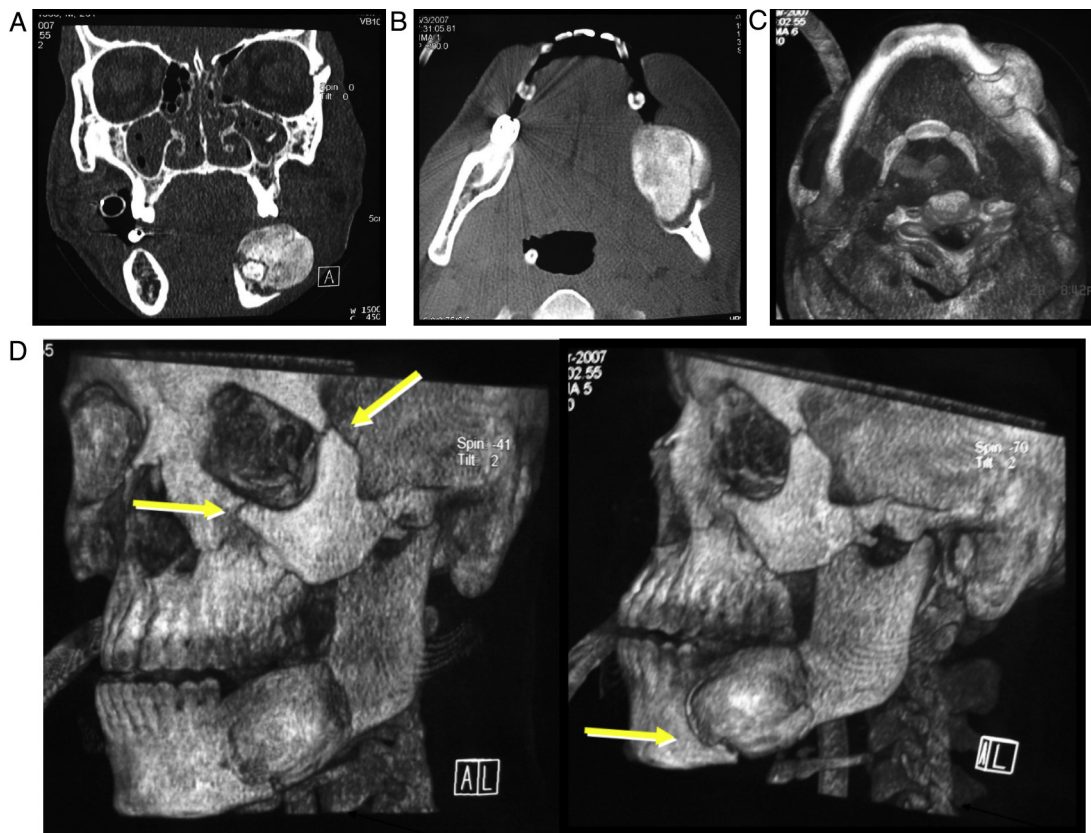


Fig. 1 – Computed tomography scans: (A) coronal slice; (B and C) axial slice; and (D) 3D reconstruction. The fractures in the zygomatic bone and the lesion in the mandible are indicated by arrows.

the presence of lesions that are microscopically identical to these, in other regions, means that the theories on the origin of ossifying fibromas remain an open question.^{2,12,13} There is a supposition that previous tooth extraction or periodontitis might provide a stimulus,^{3,12} or that the formation of ossifying fibromas might be simply linked to a disturbance of bone maturation of congenital origin.⁴

Ossifying fibromas are more common in females.^{3,5,6,14} They occur predominantly between the third and fourth decades of life.^{2,3,5,6,14-16} The premolar and molar regions of the mandible are the commonest sites.^{2,5,17-19} Small lesions are asymptomatic and, as they grow and expand, they cause tumefaction that is pain-free, despite significant facial asymmetry.^{2,3,5,9,19,20} Their growth is relatively slow.^{3,9,16,20}

Pain and paresthesia are only rarely associated with ossifying fibromas.² Mobility and root reabsorption of the teeth involved are frequent findings^{5,7,14-16} and root divergence can be found in 17% of the cases.^{5,7,14,15} However, according to another author, divergences and reabsorption of the roots are uncommon findings.⁸ In the case reported here, there was no root reabsorption or divergence. The patient presented facial asymmetry and did not report having any paresthesia or pain.



Fig. 2 – Panoramic radiograph.

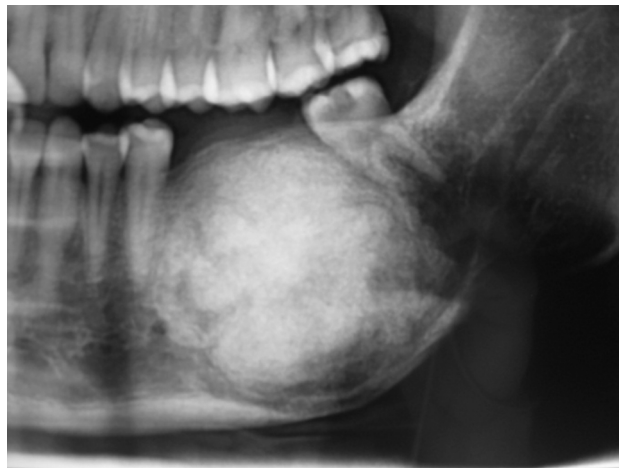


Fig. 3 – Close-up view of the lesion in the panoramic radiograph.

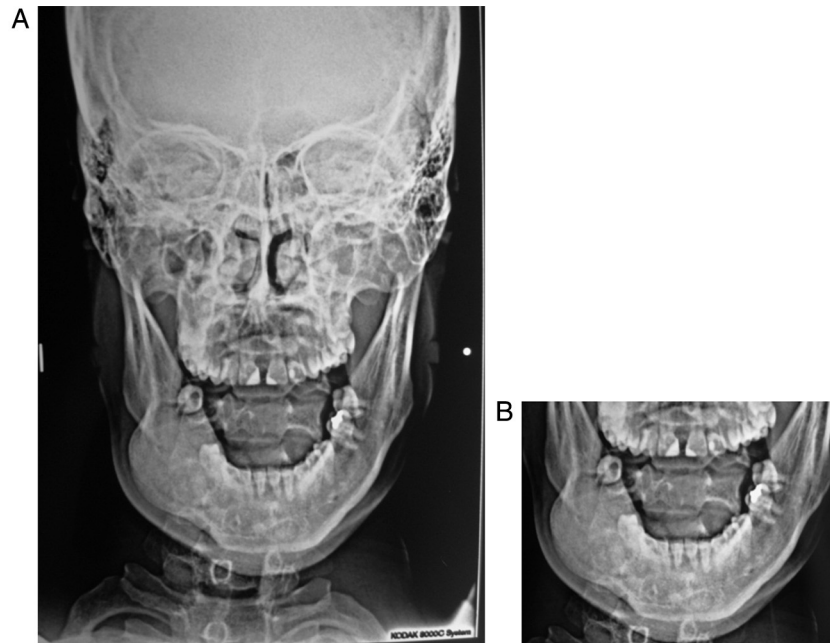


Fig. 4 – (A) Posteroanterior radiograph of the mandible; (B) close-up view.

The lesions present in uni or multilocular form.^{4,21} In most cases, the lesions are radiolucent with radiopaque foci, depending on the quantity of tissue calcification, which gives rise to varying degrees of radiopacity.^{2,8} Aggressive lesions may show loss of the limits at the edges, similar to perforations in cortical bone.²² In the case reported here, in analyzing the radiographic and tomographic images, it was observed that all the cortical bones had become ruptured. The differential diagnosis is usually made in relation to monostotic fibrous dysplasia. Thus, the final diagnosis is made through a histopathological examination.

When the surgical resection is extensive, additional reconstruction using bone grafts and implants may be necessary due to esthetic and functional problems, especially when teeth are removed.^{2,8} In the case described here, since the lesion presented rupture of all of the cortical bones, and because the area that could be subject to strong muscle area was extensive, it was decided to emplace a titanium reconstruction plate. This also had the aim of maintaining the mandibular outline.

The importance of making an overall assessment of such patients needs to be emphasized. Rather than focusing only

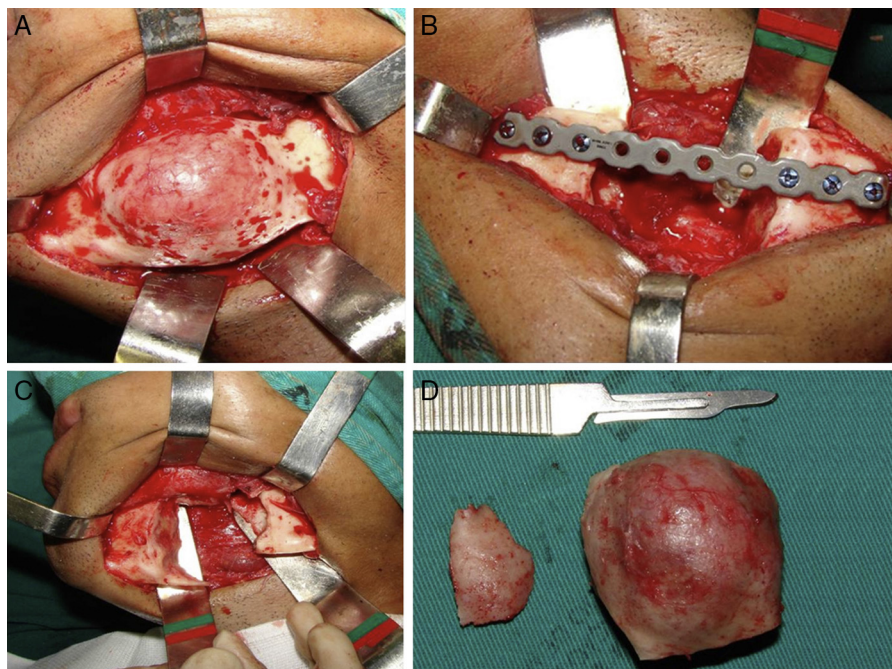


Fig. 5 – (A and C) Surgical procedure; (B) placement of plates and fixation screws; (D) removal of the lesion and surgical specimen.



Fig. 6 – Postoperative panoramic radiograph.

on evaluating their main complaints, a complete clinical examination should be performed while remaining alert to variations from normality and, especially, to pathological alterations. In this manner, patients' conditions can be correctly diagnosed and appropriate treatment plans can be drawn up.

Conflicts of interest

The authors declare no conflicts of interest.

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