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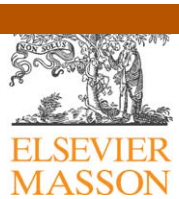

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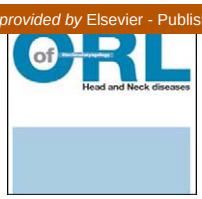

CLINICAL COMMENTARY

Ossifying fibroma of the maxillary sinus at the Kara (Togo) Teaching Hospital

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KEYWORDS
Ossifying fibroma;
Jaw;
Maxillary sinus;
Enucleoresection

Summary
Introduction: Ossifying fibroma of the jaw is a benign tumorous disease, somewhat rare and aggressive. It frequently targets the mandible, but seldom the maxillary.
Case study: The present study reports the first case of left maxillary sinus fibroma treated at the Kara Teaching Hospital in North Togo. It occurred in a 29-year-old patient who experienced slow-growing tumefaction of the left maxillary sinus, resulting in deformation of the left side of the face in the maxillary region and ipsilateral nasal obstruction. Orthopantomography showed a displacement of teeth 21, 22, and 23 with an abnormal degree of opacity at the dental roots. The CT scan of the nose and sinuses revealed a tumorous lesion of expanding bony density increasing in volume at the outer wall of the left maxillary sinus, of regular shape that contained microscopic calcifications, extending into the ipsilateral orbital floor and pushing the surrounding soft tissues forward without invading them. The histopathological examination of the tumor confirmed the diagnosis of ossifying fibroma.
Discussion: Ossifying fibroma or fibrous osteoma is a rare and benign lesion developing insidiously with a polymorphous aspect. Of unknown etiology, most frequently located in the mandible, it is differentiated from other types of fibroma in its clinical, radiological, and histological aspects. However, only examination of the gross specimen can provide the final diagnosis. Treatment requires surgery.
Conclusion: Surgical treatment entailed the complete macroscopic enucleoresection. Recovery has been favorable at 2 years of follow-up.

Introduction

Ossifying fibroma of the jaw is a rarely occurring benign tumorous disease with a good prognosis. It frequently targets

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the mandible but seldom the maxillary. It evolves insidiously, displaying a variety of clinical polymorphisms. It belongs to the complex group of nonodontogenous tumors.

The tumor occurs with a unilateral centrifugal growth pattern, evolving slowly and asymptomatically, with consultation and discovery delayed unless it causes an aesthetic or functional problem.

Clinical or radiological data alone do not suffice the diagnosis of benign tumors of the maxillary. A more conclusive diagnosis is made through histopathological examination. The case reviewed herein underlines the clinical and paraclinical aspects of this type of tumor and its cure through thorough enucleoresection, while preserving the surrounding physiological structures. The treatment of this disease is documented through its clinical review.

Clinical case

The male patient, a Togolese citizen living in Kara, North Togo, and a trader of dairy products by profession, presented tumefaction of the left maxillary, evolving slowly over the past 10 years. In 2002, he was examined at the Tokoin National Hospital in Lomé (Togo) and a biopsy curettage was taken following the pathological examination, which revealed the presence of numerous pockets indicating the formation of a cementoossifying fibroma with no signs of malignity. The onset of the condition was marked by the progressive increase in the volume of the tumor deforming the left part of the face (Fig. 1) which led the patient to seek medical advice again in October 2008, at the ENT Department of Kara Teaching Hospital, where he was found in good general health but with a well-defined localized swelling of the left maxillary with bulging of the left hemipalate, obstruction of the left nasal passage, and stage 2 mobility of teeth 21, 22, and 23 with no loss of vitality. The examination showed no additional signs of poor health.

The orthopantomography examination revealed an image showing displacement of teeth 21, 22, and 23 with an abnormal degree of opacity at the dental roots. No anomalies were found in the skeleton of the mandibles (Fig. 2).

The sinonasal CT scan requested demonstrated a tumorous lesion of slowly expanding bony density increasing in volume that had developed in the anterolateral wall of the left maxillary sinus, measuring 53.3×55.3 mm. The growth was regular in shape and contained microscopic calcifications. The tumorous lesion that intruded into the ipsilateral maxillary sinus extended into the ipsilateral orbital floor and pushed the surrounding soft tissues forward without invading them. Thus, the parenchymatous and subtentorial structures of the brain above the sinusal cavities— maxillofrontal, ethmoidal, and sphenoidal —were normal (Fig. 3). Enucleoresection was performed under general anesthesia in November 2008 through an intraoral approach and a vestibular incision. The enucleoresection was performed in four segments (Fig. 4).

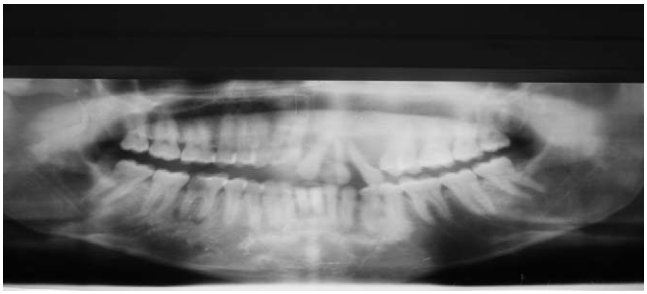

Figure 2 Orthopantomogram showing teeth 21, 22, and 23 pushed by the tumoral process.

No teeth needed to be removed. Curettage of the tumorous base was performed. The cavity resulting from the tumor removal was cleaned followed by the closing of the vestibular incision. Postoperative care was incident-free and the patient was able to leave the hospital the day following the operation. He was checked 8 days later and showed good postoperative healing. Another check-up 30 days later showing satisfactory progression and complete recovery. He was given a schedule of regular check-ups every 3 months during the first year, then twice a year from November 2008 onward.

An anatomopathological examination of the excised tissue revealed numerous islets of varying sizes, converging toward each other, even in texture within the bony tissue, demonstrating their identification as lesions of ossifying fibroma with no indication of malignancy, thus confirming the diagnosis.

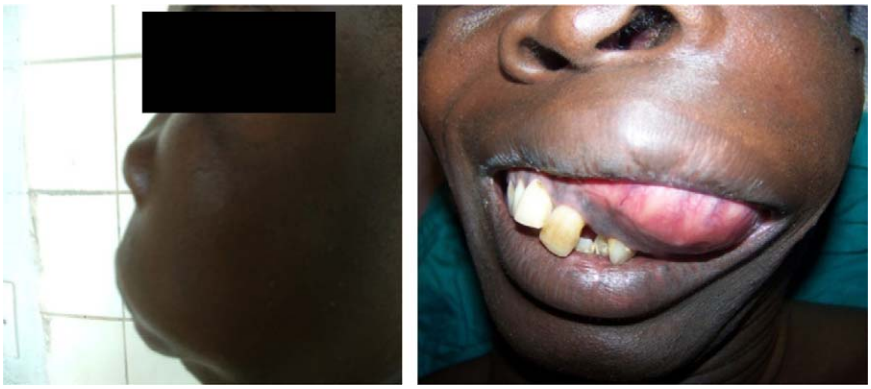

Figure 1 Preoperative AP and lateral views. Note the exteriorization of the tumor with stage 2 mobility of teeth 21, 22, and 23 with no loss of vitality.

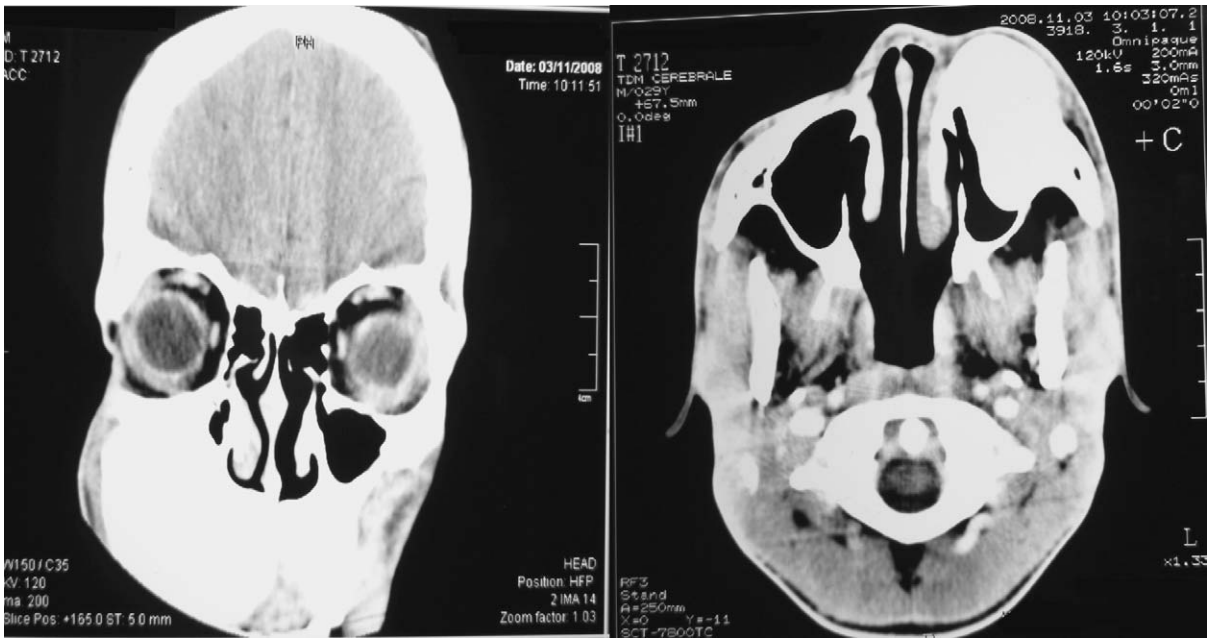

Figure 3 CT, coronal and axial views: the tumor mass occupying the entire left maxillary sinus pushing on the surrounding structures can be observed.

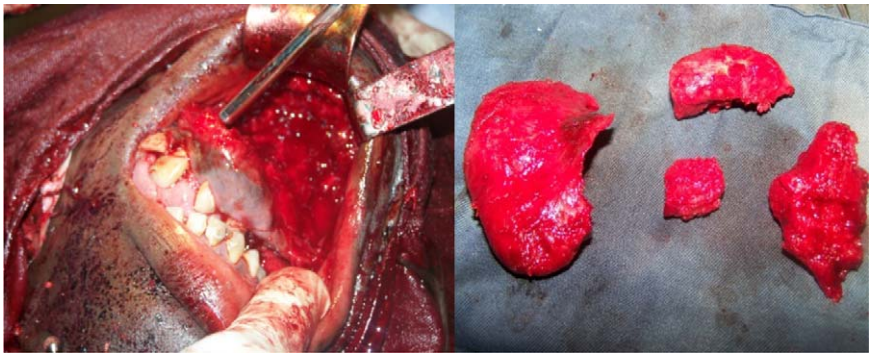

Figure 4 Intraoperative view and gross specimen.

Discussion

Ossifying fibroma or fibrous osteoma is a rarely occurring and benign lesion developing in an insidious and polymorphous manner, [1]. It accounts for 2.5% of all bone tumors and 7% of benign tumors of the head and neck.

The etiopathogeny of ossifying fibroma is unknown to date and the different hypotheses linking the pathology either to a localized trauma or infection or alternatively a hormonal or autoimmune disturbance have remained unproven.

The most likely cause remains a congenital predisposition. The plain X-rays (Blondeau, orthopantomography) could indicate three hypotheses depending on bone density [3,4]:

- cystic forms (21%), shaped like soap bubbles or honeycomb in shape;
- sclerotic forms (23%) with condensed bone at the base of the skull;
- Pagetoid forms (56%) displaying average density with alternating dense and less opaque zones.

An orthopantomography can measure the impact of the disorder on the dental system.

Menzel (1872) was the first to describe the particulars of ossifying fibroma [3]. It is also known by a variety of other names such as fibrous osteoma, ossifying fibroma, hypertrophic or localized fibrous osteitis, localized fibrous osteodystrophy, or even bone keloid [4].

In 1996, Damjanof and Under [5] deemed this multiplicity of names to be arbitrary and unhelpful and proposed to classify the two entities as ossifying fibroma, a benign bone tumor of membranous ossification affecting the maxillofacial bone structure and characterized by a bony tumefaction of slow, pain-free growth displacing the dental organs without causing rhizolysis and the adjoining tissues without destroying them.

The differential diagnosis poses a complex problem. In the absence of suggestive clinical indications, one can readily eliminate any possibility of the disease occurring

as a result of any acute inflammatory or traumatic pathology. With a condition evolving slowly, painlessly, and with no related neurological symptoms, the diagnosis should look toward a benign neoplastic process. Ossifying fibroma, by its aggressive nature and extragnathic development, progresses by targeting the maxillary areas and ends up invading the paranasal sinus, the orbital cavities, the frontal bones, and the structures of the base of the skull [6]. Juvenile ossifying fibroma is painful and develops swiftly. It is more destructive and has faster growth potential than cementoossifying fibroma [7]. Its histological aspect differs from that of ossifying fibroma by its greater cellular concentration, its spindle-shaped cells arranged in a swirling manner, with bony formations that are more trabecular than lamellar [8]. Nevertheless, other lesions such as the swiftly evolving and painful aneurysmal cyst, the isolated bone cyst, and granuloma with its giant cells occurring primarily during the early years should be kept in mind [7]. One should also entertain the possibility of the Pindborg odontogenic calcified tumor, the odontogenic adenomatoid tumor, the odontogenic keratocyst as well as the other types of odontogenic lesions. These lesions are not problematic in the differential diagnosis because they seem to occur preferably in premolar, molar, of mandibular locations or near the alveolar bone, and because their onset is more rapid.

The differential diagnosis with fibrous dysplasia is essentially based on radiological, histological, and even surgical criteria [3,4]. Thus at the more advanced stage at which the case under study came to our attention, ossifying fibroma displays an image made up of haphazardly shaped opaque spots formed in concentric bony trabeculae, defined by a peripheral osteocondensation often likened to an eggshell [6]. The histopathology of the cementoossifying fibroma demonstrates that lesions whose calcifications are made of lamellar bones are ossifying fibroma, while those whose calcifications are amorphous and basophilic with a cemented appearance correspond to the cementoossifying type [2,3].

Treatment is mostly surgical and consists of enucleoresection of the smaller ossifying fibroma and the complete removal of the growth combined with bone reconstruction in cases of larger cementoossifying fibroma [9]. In the case reviewed herein, treatment consisted in enucleoresection by operating via an intraoral approach, thus permitting macroscopically complete removal of the fibroma. This was followed by a schedule of regular check-ups every 3 months during the first year, then twice a year thereafter. For the past 2 years, healing seems to be evolving favorably with indication of complete recovery.

Conclusion

Ossifying fibroma of the maxillary belongs to the entity denoted as cementoossifying fibroma on account of their similar characteristics and the frequent histological intricacies of the bones and cement found in the variety designated as cementoossifying fibroma (WHO, 1992). It affects primarily membranous bones such as those of the maxillofacial skeleton. The fibroma can be found in children or adults 20—30 years of age. It occurs mostly on the mandible. The difficulty of identifying this type of tumor resides in the fact that it requires a precise diagnosis not readily provided by clinical or radiographic examinations. Only an anatomopathological examination provides definitive clues. Treatment is then surgical.

Conflict of interest statement

None.

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