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OSSIFYING FIBROMA*

A Case Report

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SUMMARY: Taşar F, Giray CB, Taşman U, Saysel MY. (Department of Oral Surgery, Hacettepe University Faculty of Dentistry, Ankara, Turkey). Ossifying fibroma: a case report. Turk J Pediatr 1996; 38: 265-270.

Ossifying fibroma is a benign tumor of connective tissue origin which occurs in fibro-osseous lesions. The lesion is seen most commonly in children and young adults. It is asymptomatic and slow-growing, but in some cases may show aggressive behavior. Though it has a slight predilection for the mandible, it may involve both jaws. The lesion is generally asymptomatic until it produces noticeable swelling, and mild deformity and migrations of teeth may be an early clinical feature. Pediatricians and dentists must be aware when asymmetry of the face occurs, and the lesion must be well diagnosed as it has a cancer-like radiographic appearance. In this article a nine-year-old patient with a massive mandibular ossifying fibroma is presented. *Key words: ossifying fibroma, mandible, extensive.*

Fibrous dysplasia, periapical cemental dysplasia, ossifying fibroma, periostitis of Garre, focal sclerosing osteomyelitis and osteitis deformans are a variety of disease processes under the name "benign fibro-osseous lesions"[1]. Distinct differentiation among various fibro-osseous entities is difficult because of overlapping clinical and histopathologic criteria. Even when a clear diagnosis can be made, management of the lesion may depend on the patient's past medical history. According to Eversole et al.[2], ossifying fibromas elaborate bone, cementum and sphenoidal calcifications; when bone predominates, ossifying fibroma is the appellation, while the term "cementifying fibroma" has been assigned when trabeculae or sphenoidal calcifications are encountered. Shafer et al.[3] defined ossifying fibroma as a benign, relatively slow-growing lesion in which osteoblasts proliferate and form bone.

Clinically, ossifying fibroma may occur at any age but is more common in young adults. The mandible is the most commonly affected site among the cranial bones. According to Eversole et al.[2], there is a marked predilection for female patients and arising in the molar-premolar region of the mandible. Even though it is a slow-growing tumor, some cases may show aggressive behavior, reaching massive dimensions with extensive cortical expansion. Most of the lesions occur in children and have promoted the designation "juvenile aggressive" or "active

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ossifying fibroma"[4]. The lesion is generally asymptomatic until the growth produces noticeable swelling and asymmetry. Displacement of the adjacent teeth may be an early clinical feature, and on rare occasions pain and paresthesia may result from pressure on the related nerves[3, 5].

The differential diagnosis usually consists of fibrous dysplasia and cementifying fibroma. Total excision of the tumor is the main treatment choice, and the recurrence rate is very low after adequate surgical resection[2, 3].

This type of central, fibro-osseous lesion should be well-defined and taken into consideration in differential diagnoses, especially in children. They are rare non-odontogenic tumors of the jaws that need to be carefully managed.

Case Report

A nine-year-old male patient was referred to the University of Hacettepe Faculty of Dentistry, Department of Oral Surgery, with the complaint of swelling in his right mandibular molar region. He stated that he first became aware of the lesion five months previously, and a dentist in his home town performed an incisional biopsy with the primary diagnosis of osteomyelitis. The specimen was reported as an ossifying fibroma, and his doctor referred him to our clinic for further examination and surgery.

There was no history of trauma, and his medical and dental histories were unremarkable. He had a mild deformity on the right side of his face. On intra-oral examination, a hard, bony expansion from the alveolar ridge through the basis of the mandible was noted. The mucosa was normal in color and intact. The panoramic radiograph revealed a large multilocular radiolucent area showing casual opacities in the right corpus of the mandible (Fig. 1).

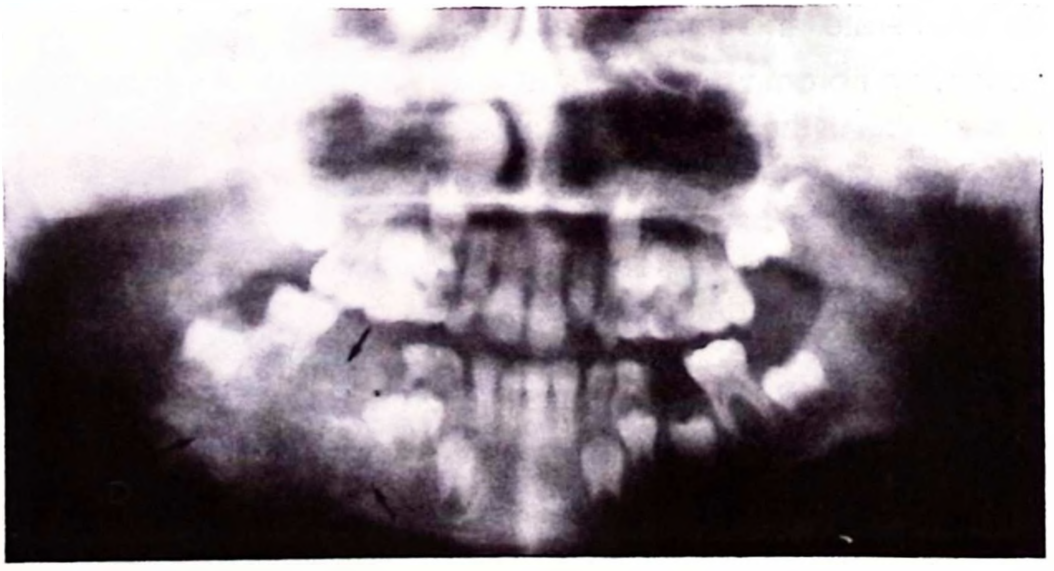

Fig. 1: Panoramic radiographic view of the lesion in the right mandibular corpus (arrows).

Surgery was performed under general anesthesia ten days after his referral. The mucoperiosteal flap between the angulus and the right mandibular canine was elevated, and the bone overlying the lesion was removed with roungers and burs. The first mandibular molar was extracted, and the affected germ of the first and second premolars was enucleated. The inferior alveolar neurovascular bundle was protected and the lingual portion of the mandibular bone was left intact. The flap was closed primarily, and antibiotic therapy (amoxycillin 500 mg p.o. 3 x 1) was given for one week postoperatively.

Histopathological Findings

The specimen was fixed in 10% formaline solution and processed for routine light microscopy. Macroscopically, the curettage material was hard and covered with bony-like structures. There were occasional soft compositions attached to the trabecular bone in the tumor tissue. Microscopic examination of hematoxylin-eosin-stained sections revealed plentiful number of active fibroblast cells, and rare, irregular, bony trabeculae were observed (Fig. 2a). At higher magnifications,

Fig. 2a: Appearance of the islands of ossification (arrows) in a wealthy fibrous stroma (H + E x 115).

massive interlacing collagen fibers and an island of ossification was noticed in the fibrous stroma (Fig. 2b). The histopathologic report declared the lesion as an "ossifying fibroma".

The patient was followed up every three months, and after three years of follow-up there was no sign of recurrence (Fig. 3).

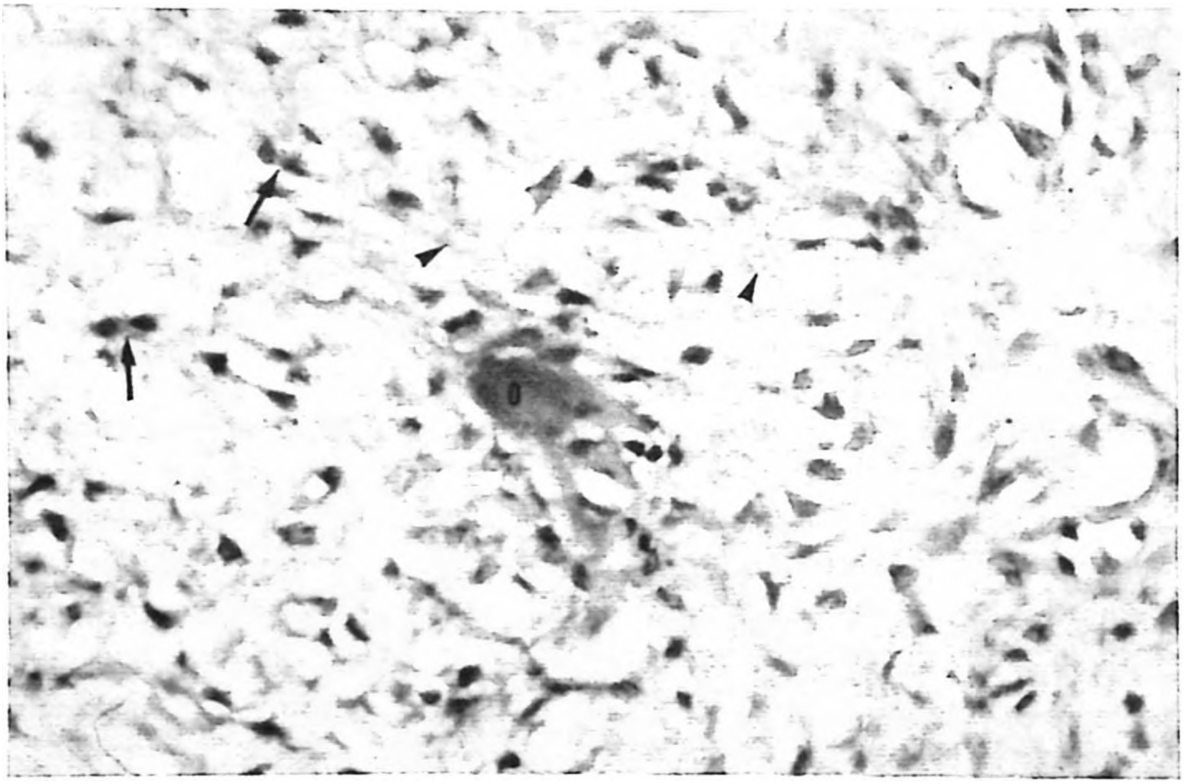

Fig. 2b: Section of the tumor tissue interlacing collagen fibers (arrow head) and proliferating fibroblasts (arrow) and an irregular trabecula of osteoid. (O) (H + E x 460).

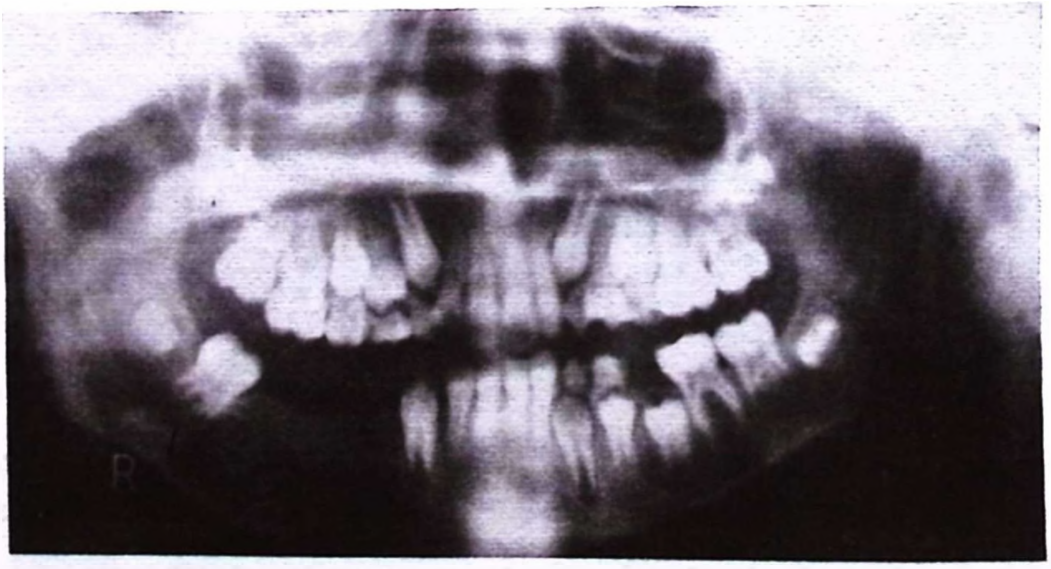

Fig. 3: Radiographic appearance of the mandible three years postoperatively. The basis of the right mandible is healthy and intact (arrow).

Discussion

This case has the characteristics of a typical ossifying fibroma lesion. The main symptom was swelling on the right side of the patient's face. In most cases the lesions are asymptomatic and painless and stop growing after reaching a certain size. However, some lesions are capable of accelerated growth and recur following the curretage. The recurrence rate after curretage is 28 percent[2]. Some other types of fibroosseous lesions, such as cemento-ossifying fibroma, have a higher recurrence and need at least a five-year follow-up period. Curretage is the most proper treatment option for such lesions; if a severe recurrence occurs, block resection may be indicated[3].

Because of the difficulty of differentiating fibro-osseous lesions on a histologic basis and predicting their behavior solely on the basis of those findings, a good history and review of radiographic and surgical findings are always necessary[1, 7]. The neoplasm presents an extremely variable reontgenographic appearance depending on its stage of development. In early stages, the noplasm is generally well demarcated and may be radiolucent, radiolucent with central opacification, or have a multilocular radiolucent appearance. However, in nearly all cases the lesions have well-defined radiographic borders[6].

Prior to biopsy, the differential diagnosis usually includes ameloblastoma, odontogenic fibromas, chondrosarcoma and giant cell granuloma[3, 8]. In our case the patient was referred to us with an earlier histopathological report taken from the city hospital in his home town; thus we did not have reason to suspect other entities and when we compared the clinical findings the lesion displayed the main characteristics of ossifying fibroma. According to Eversole et al.[2], all fibro-osseous jaw lesions arise from the periodontal ligament with the potential for both osseous and cemental differentiation as witnessed by the presence of woven and lamellar osseous trabecular and non-linear cementum.

The ossifying fibroma contains woven bone often rimmed by osteoblasts that lay down layers of lamellar bone. Basically, the lesion is composed of many delicate interlacing collagen fibers, interspersed by large numbers of active proliferating fibroblasts. This connective tissue characteristically presents many small foci of irregular bony trabeculae. When the tumor matures, the islands of ossification increase in number with a probable calcification that accounts for high radio-opacities in the radiograph[3]. This may resemble areas of cementum appearing as psammoma bodies embedded in a benign fibrous stroma[7]. In the present case, our histopathological and radiographic findings correlated with these findings. In fact there are many types of histologic patterns of these lesions, but no difference in behavior between the histologic destinations can be found.

Among fibro-osseous tumors, ossifying fibroma is one of the most common lesions occuring in children. When the tumor is diagnosed and treated properly and meticulously, the recurrence rate is low, even when the tumor is large, as in our case.

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