



JUVENILE OSSIFYING FIBROMA – A CASE REPORT

Dental Science

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ABSTRACT

Juvenile ossifying fibroma (JOF) is a rare fibro osseous entity of the craniofacial skeleton, which has diagnostic and therapeutic challenges, due to its characteristic clinical, behavioral and histopathological features. The second edition of the World Health Organization (WHO) Classification of odontogenic tumors defines JOF as a lesion consisting of cell-rich fibrous tissue containing bands of cellular osteoid without osteoblastic rimming with trabeculae more of typical woven bone. Here by discussing a case of aggressive juvenile ossifying fibroma and its clinical progression and treatment procedure.

KEYWORDS

Juvenile Ossifying Fibroma, Craniofacial, Osteoid, Trabeculae

INTRODUCTION:

The fibro osseous lesions represent a diverse group of entities that are characterized by replacement of normal bone by a fibrous connective tissue matrix, with in which varying amounts of osteoid, immature and mature bone and in some cases, cementum like material are deposited. Fibroosseous lesions of the jaws include hamartomatous lesions, reactive or dysplastic processes and neoplasms.^[1]

Juvenile ossifying fibroma appears mostly at a nearly early age and in 79% of the patients is diagnosed before the age of 15. Males and females are proportionately affected. Juvenile ossifying fibroma originates from periodontal ligament and accounts for 2% of jaw tumors in children. The JOF is located mainly (85%) in facial bones, in some cases (12%) in calvarium, and very rare (3%) extracranially. Mandibular lesions are seen in 10% of the cases.^[2]

The tumor is well circumscribed by a sclerotic shell of bone. It appears as locally aggressive with cortical disruption and involvement of many adjacent anatomical structures. This lesion has predominating soft tissue consistency with variable amounts of internal calcifications and/or linear or irregular bone. It usually shows a low density mass due to cystic changes on computed tomography (CT) scans.^[3]

CASE REPORT:

A 5 year old female patient has visited the department of oral medicine and radiology with a chief complaint of swelling in the mandible on right side since 6 months which was small in size and increased gradually to present size which is not associated with any symptoms.

On clinical examination a solitary well defined swelling approximately 1.5cm antero posteriorly and 2cm medio laterally. Colour was similar to surrounding mucosa and surface is smooth. Missing teeth were noticed in 73,74. On palpation swelling was painless, non compressible and bony hard in consistency. (Figure 1) Provisional diagnosis of Ossifying fibroma was made.



Figure 1

Radiographic examination was done and computed tomography scans show bucco lingual cortical expansion in the mandible extending antero posteriorly from 72 to 75 and mediolaterally both on buccal and lingual

sides. Internal structure shows impacted teeth in 73,74 and multiple radiopaque foci. (Figure 2)



Figure 2

Radiographic diagnosis of ossifying fibroma was made and surgical excision of the lesion was planned under general anesthesia and sent for histopathological examination. Final diagnosis of **Juvenile ossifying fibroma** was given. (Figure 3,4)

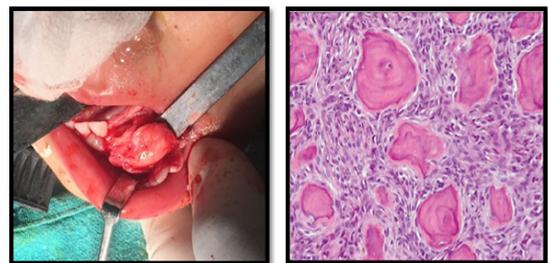


FIGURE 3,4

DISCUSSION:

Ossifying fibroma (OF), a rare tumor, is a well-demarcated benign fibro osseous tumor with a capsule composed of metaplastic bone, fibrous tissue, and a varying amount of osteoid tissue. Ossifying fibromas are subdivided into conventional and juvenile subtypes.^[4]

The etiology of an OF is unknown, but odontogenic, developmental, and traumatic origins have been suggested, and it is also thought to be of a periodontal ligament origin because of its capacity to produce cementum and osteoid material.^[5]

The clinical presentation of JOF is a slow growing, asymptomatic, expansile, spherical or ovoid swelling, causing significant facial asymmetry, and depending upon the anatomical site of involvement there can be nasal obstruction, epistaxis, exophthalmus, and proptosis. In most

patients (85%), the tumors are located in the facial bones, but they also involve the calvaria (12%) and extracranial sites (4%). In the facial bones, 90% of the tumors arise from the maxilla and paranasal sinuses and the remaining 10% arise from the mandible.^[6]

Root resorption and displacement of the involved teeth are observed. In the mandible, the angle and ramus are the most common sites of involvement,^[3] which is in contrast to the reported case, wherein the parasymphysis and body of the mandible were affected.^[7]

On computed tomographic (CT) scans, juvenile ossifying fibromas appear as an expansile mass, surrounded by thick or thin radiodense rimming. There may be islands of bone formation within the lesion.^[8]

As there is no difference between limited surgery and more radical approach in terms of outcome, conservative treatment can be the preferred option. However, JOF has aggressive behavior and high rate of local recurrence (30%–58%) requiring more radical approach. Complete surgical resections should be the preferred options.^[9]

Radiotherapy seems contraindicated because the tumors are believed to be radio-resistant. It is also contraindicated because of the adverse effects of radiotherapy^[10] and also due to the increased incidence of malignant transformation, in the lesion, ranging from 0.4 to 40%.^[11]

CONCLUSION:

Juvenile ossifying fibroma is a benign neoplasm of the bone that has a potential for excessive growth, bone destruction, and recurrence. The rapid growth rate exhibited by this lesion can be quite alarming and makes the clinician suspect malignancy. Hence, the role of the oral and maxillofacial radiologist helps in early recognition and diagnosis, which will help to prevent disability and deformity in children. Nevertheless, long-term clinical and radiological follow-up to rule out the possibility of recurrence and malignant transformation is mandatory.

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