

OSSIFYING FIBROMA OF MANDIBLE-REPORT OF TWO CASES AND REVIEW OF THE LITERATURE

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Abstract

The ossifying fibroma is relatively uncommon slow growing expansile and encapsulated benign fibro-osseous tumor. This paper presents two cases of ossifying fibroma of the mandible found in 25 and 35 years old females who attended Dental Department of Bir Hospital for evaluation of a bony swelling over the body of the mandible of 14 and 9 months duration respectively. On examination, both cases had a bony swelling with mild pain, mild to moderate facial asymmetry and displaced teeth at the tumor area. Radiographically well demarcated radioluscent area were observed where one lesion showed pseudo-bilocular radioluscenty and other showed areas of radio-opacity over the radioluscent area. The excisional or enucleation biopsy was performed and histopathological examination found proliferation of the fibrous tissue with focal ossification suggesting ossifying fibroma of the mandible. This paper presents two cases and a brief discussion regarding controversy in diagnosis of of ossifying fibroma as compared to other related fibroosseous lesions although they have separate entity.

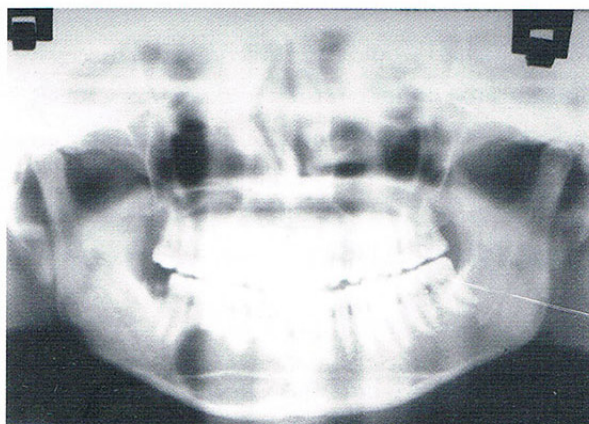
INTRODUCTION:

The Ossifying Fibroma (OF) is relatively uncommon, slow growing, expansile, encapsulated benign fibro-osseous lesion which remains asymptomatic till the growth produces mild deformity and displacement of the teeth in the lesion area. Fibro-osseous lesion is described as a group of pathological changes within the jaw bone in which normal bone is replaced by fibrous tissue with or without calcification and that may be non-neoplastic or neoplastic and nonodontogenic or odontogenic.

This paper presents two cases of OF of mandible including clinical behaviour, radiographic appearance, histopathology and its surgical management, as well as a brief discussion on the relationship between OF and other related fibro-osseous lesion.

CASE HISTORY:

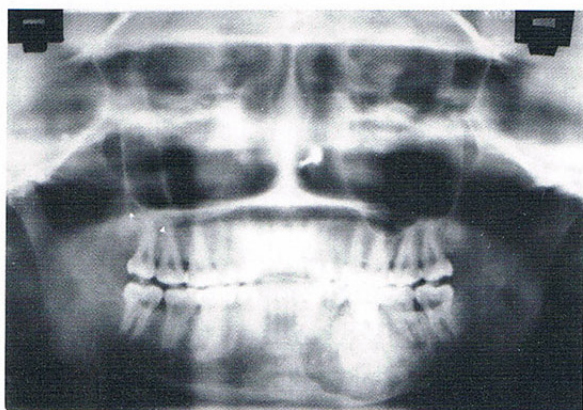
Both the cases were attended in Dental Department, Bir Hospital, on August 1997 and January 1999 respectively. The particulars of the cases are presented in table I and clinical features are presented in table II.



The OPG of case I showed pseudo-bilocular radioluscent area in right body of the mandible.

The orthopantomograph (OPG) of case I represented well demarcated pseudo-bilocular radioluscent area extending from 41 to 46, on the right side of the mandible, without internal radio-opacity, with mild tooth displacement and slight root resorption (figure – 1). Similarly OPG of case II presented with well demarcated unilocular radioluscenty extending from 32 to 37, on the left side of mandible, with internal radioopaque areas indicating bone formation. The teeth in the lesion area were moderately displaced (Figure – 2)

Both the patients did not have any significant systemic disease and routine examination as well as chest radiograph was normal to undergo an

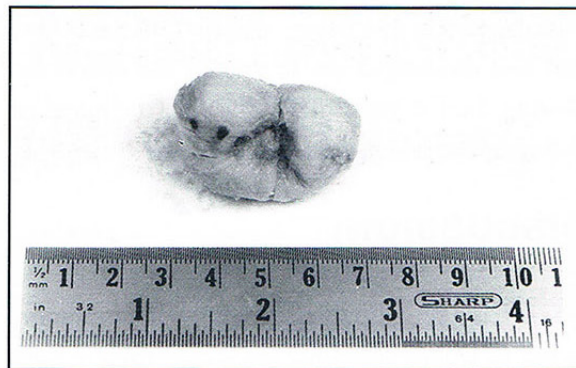


The OPG of case II showed unilocular radioluscenty in left body of the mandible with internal radioopaque areas.

operation for excisional biopsy under general anaesthesia.

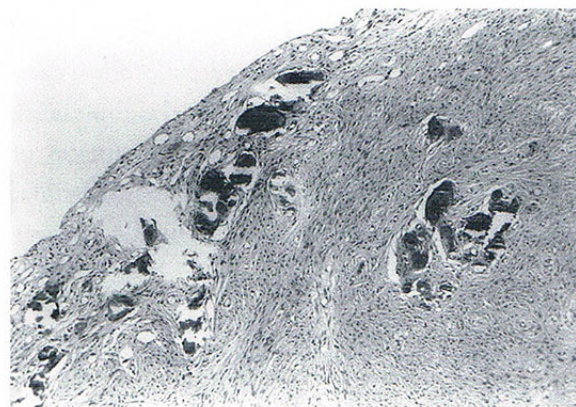
On August 1997 and January 1999, under general anaesthesia, the enucleation and excision of the lesion in case I and II were accomplished by intraoral approach under general anaesthesia, on August 1997 & January 1999, respectively. The enucleated or excised lesion were observed to be capsulated (figure – 3) and sent for histopathological study.

The histopathological study in case I revealed proliferation of fibrous tissue with scattered foci of ossification and the bony trabeculae with osteoblastic rimming and fibrous tissue suggested ossifying fibroma (figure – 4). In case II, it revealed



The morphology of enucleated lesion presented with encapsulation and grooved for bilocular shape or appearance.

proliferation of fibrous tissue interspersed by multiple foci of irregular lamellar bone with 'Bizarre chinese character'. The osteoid component was more



(x25 H & E): ossifying fibroma showing bony trabeculae with osteoblastic rimming in cellular fibrous tissue.

eosinophilic and rimmed by osteoblastic cells. These findings suggested ossifying fibroma.

(Figure – 5)



(x25 H & E): ossifying fibroma showing proliferation of fibrous tissue interspersed by multiple foci of irregular lamellar bone with Bizarre chinese character.

Postoperatively the patient tolerated the procedure and was discharged on 3rd day of the operation. During 3 to 4 Years of follow up no clinical or radiographic evidence of recurrence was observed.

DISCUSSION:

The OF is a benign fibro-osseous lesion commonly found in female mandible but it may involve both the jaws in young adult, or diagnosed during third or fourth decade of life and associated normally with tooth bearing areas.

OF is currently believed to be derived from mesenchymal tissue of the periodontal ligament which has multipotential ability to form bone, cementum and fibrous connective tissue. Some cases may have aggressive behaviour and the abundance of fibrous connective tissue and resorption of mineralized deposits are indicative of altered cellular differentiation and proliferative activities in large OF.

Eversole et al, in a series of 64 cases of OF, observed the calcification pattern representing bone only in 37%, cementum only in 22% and admixture of both in 47% of the cases, and designated the lesions as OF, cementifying fibroma (CF) and cemento-ossifying fibroma (COF) respectively. As there is no specific clinical, radiologic or microscopic basis for their distinction, Eversole et al suggested that all the lesion in this group, OF, CF & COF, should be referred as a single entity as OF and they are only histological variation of the same neoplastic process.

COF/CF contains the mineralized materials named cementicles, due to their resemblance to cementum, and they really composed of cementum is circumstantial. These cementicles are identical with ossicles, pathognomic for Psammomatoid ossifying fibroma (POF) which had been, thus, described as similar lesion resembling to COF. CF generally occurs in jaw but rarely involves paranasal sinuses and ectopic site such as tibial bone. Hence, OF, CF

and COF occurring at both jaw areas may be considered as a single entity and POF and CF like lesion of tibia, occurring at sites other than the jaw area, may be considered as extragnathic variant of the same tumour. Thus, necessity for different names for the lesions only differing in their site of occurrence is considered to be at least debatable.

The OF shows variable radiographic and microscopic appearance during the process of maturity of the lesion depending upon the quantity of calcified tissue present in it. Radiograph of OF exhibit uni or multilocular radiolucent area but variable degree of internal radio-opacity may be present depending upon the amount of calcified tissue. Initially it appears radiolucent and internal radio-opacity increases with increase in calcification. In the case presented the radiograph of case I appeared pseudo-bilocular radiolucent area where as radiograph of case II appeared unilocular radiolucency with internal radioopacities indicating bone formation. Both the lesions were well demarcated in contrast to fibrous dysplasia which is characterized by diffuse blending with surrounding normal bone.

The OF is composed basically of many delicate interlacing collagen fibres interspersed by active proliferating fibroblast and the connective tissue characteristically present many small foci or irregular bony trabeculae bearing bizarre chinese character. In case I the amount of osseous tissue is in less proportion and that is inadequate to produce the internal radioopacity in the radiograph indicating initial stage where as in case II the amount of irregular pattern of bone formation is in higher proportion which is adequate enough to produce internal radioopacity indicating matured stage in the process of maturity of the tumour.

As the OF is slow growing capsulated benign tumor simple surgical enucleation or excision is usually associated with good therapeutice result and recurrence is rare. One case of OF was reported to

recurr after 20 years of excision and showed aggressive character which revealed osteosarcoma histologically. In the cases presented local excision/enucleation was carried out and no recurrence were observed during 3 to 4 Years and long term follow up observation was considered for its recurrence.

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TABLE – I CLINICAL DATA OF THE REPORTED PTS:

Case	Age/Sex	Site	Dimension	Duration
I.	35 yrs/F	Body of Mandible (Rt)	4.0 x 2.5 cm	9 month
II.	25 yrs/F	Body of Mandible (Lt)	5.0 x 3.0 cm	14 month

TABLE – II CLINICAL FEATURES OF REPORTED CASES

Clinical Feature	Case I	Case II
1. Pain	Mild	Mild
2. Bony swelling	Mild	Moderate
3. Facial deformity	Mild	Moderate
4. Displacement of tooth	Moderate	Moderate
5. Root resorption	Mild	absent

REFERENCES:

- Tasar F, Giray CB, Tarman U, Saysel M; Ossifying fibroma. A case report. *J- Pediatr* 1996 Apr – Jan, 38 (2): 265-70.
- AM Pierce, DF Wilson, SR Prabhu. Fibrous and other lesions of jaw bones: Oral diseases in tropics. SR Prabhu, DF Wilson, UK Daftary and NW Wilson. 1st Printed in India 1993.
- William G Shafer, Maynard K Hine, Bernet M Levy; A text book of oral pathology. 3rd edition.
- Eversole et al; Ossifying fibroma a clinicopathological study of sixty four cases. *Oral-Surgery-oral medicine and oral pathology*, 60, 505 – 11.
- Van Heerden W F, Reubenheimer EJ, Weir R G, Kreidler J; Giant Ossifying-fibroma, a clinicopathological study of 8 Tumors.
- Hammer et al; benign fibrous lesions of periodontal origin. An analysis 249 cases, *cancer*, 22, 861-78.
- Waldron C A, Giansanti J S; benign fibrous lesions: a clinical-radiological-histological review of 65 cases. 1973b. *Oral-Surg-Oral Pathology-Oral Medicine*, 35, 340-50.
- Margo C E, B D Ragsdale, K I Resman, L E Zimmerman, D E Sweet; Psammomatoid (Juvenile) Ossifying fibroma of the orbit. *Ophthalmology*, 92 (1985), 150-69.
- Black D L et al; Cementifying fibroma of the proximal end of tibia. *Skeletal-Radiol* (1991) 20, 543-546.
- Povysil-C, Matejovsky-Z, fibrous lesions with calcified spherules (Cementifying fibroma like lesion) of tibia.
- Waldron C A fibrous lesions of the jaw. *J-Oral-Maxillofac-Surg* (1985) 43, 249-262.
- Bundgaard T, Frost Jensen V, Bahl L; Sarcomatous change in a previously benign osteofibroma in maxillary sinus. *Arch-Otorhinolaryngol*. 1988; 245 (1), 22-4.