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Case Report

Unusual presentation of an ossifying fibroma in a young adult in mandibular region

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ABSTRACT

A benign bone neoplasm known as an osseous fibroma is frequently referred as fibro-osseous lesion. It has a stronger preference for females and is thought to have originated from periodontal membrane. Maxilla is less often afflicted than the mandible. This bone neoplasm is made up of highly cellular, fibrous tissue with varied levels of calcified tissue, which may resemble cementum, bone, or both. Depending on the degree of calcification, the lesions are either entirely radiolucent, mixed, or fully radiopaque with a radiolucent margin. Due to its propensity for recurrence and potential for malignant change, ossifying fibromas necessitate extensive surgery. In this case, a 20-year-old female had a large ossifying fibroma of mandible.

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1. Introduction

As a benign bone neoplasm, osseous fibroma is categorised. It's frequently thought of as a particular kind of fibroosseous lesion (FOL). The mandible is more susceptible than the maxilla, yet both can be impacted. This bone neoplasm is composed of densely cellular, fibrous tissue that contains various amounts of calcified tissue that resembles bone, cementum, or both.[1,2]

Hamner et al. identified and analysed 249 instances of periodontal membrane-related jaw FOL in 1968. A spectrum of processes deriving from cells in the periodontal ligament were the best explanations for this group of diseases, according to Waldron and Giansanti, who described 65 instances in 1973 (of which 43 cases had sufficient clinical histories and radiographs). Expansile unilocular radiolucencies and multilocular arrangement were the two main patterns mentioned in Eversole et al.'s description of the radiographic features of central OF in 1985.[2,3]

Although it can develop in children and adolescents, as well as older individuals, ossifying fibroma most frequently affects patients in their second to fourth decades of life. The maxilla is less frequently afflicted than the mandible, which is more frequently affected in the molar area. However, among the other cranial and facial bones, the periorbital, frontal, ethmoid, sphenoid, and temporal bones are all quite frequent locations of this tumour.[2,4]

Fibrous dysplasia, OF, cementifying fibroma, and cemento-OF were the four forms of cementum-containing lesions that the WHO defined in 1971. The second WHO classification divided benign FOLs in the oral and maxillofacial areas into two groups: osteogenic neoplasm and non-neoplastic bone lesions, with cementifying OF being within the first group. The revised WHO categorization from 2005, however, changed the phrase

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"cementifying OF" to OF.[5–7]

2. Case Report

A 20-year female patient reported to the dept. of oral medicine and radiology with a chief complaint of swelling in her right lower back tooth region for 2 months. History of the lesion revealed, the patient was first come to know about the swelling 2 months back and since then it was gradually increasing in size from pea sized swelling to current shape and size. There was no relevant history of trauma or any surgical procedure on that region. There were no history of loss of sensation or pus discharge or pain in the affected region.

Extraoral examination revealed, a diffuse swelling present on right side of the mandible, 3 cm posterior to the right corner of the mouth (Figure 1 a,b). On palpation the swelling was non-tender, non-compressible and hard in consistency.

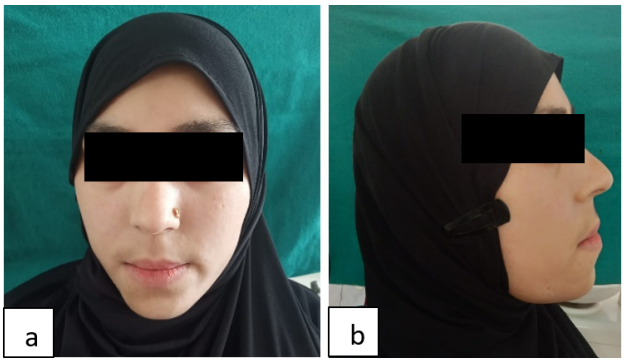

Fig. 1: a & b): A diffuse swelling present on rightside of the mandible

Intraoral examination revealed a diffuse swelling in the 42, 43, 44 and 45 regions. Antero-posteriorly is was extended from distal aspect pf 42 to mesial aspect of 45. Superio-inferiorly it was extended from marginal gingival of 42, 43, 44 and 45 to depth of the vestibule. The lesion was measuring 2x3 cm. On palpation the swelling was non-tender and hard in consistency. Displaced 43 was noted (Figure 2).

After extra and intra oral examination, a provisional diagnosis of ossifying fibroma was made. And further radiological examination was advised.

Orthopantomogram revealed a mixed radiolucent-radioopaque lesion of the mandible in 41, 42, 43, 44 and 45 regions with diffuse foci of calcifications throughout the lesion. Incidentally 13 and 23 were found impacted (Figure 3). Displacement of 43 and 44 was noted. On occlusal radiograph an expansile lesion was noted with labio-lingual cortical expansion (Figure 4).

Patient underwent extraction of 41, 42, 43, 44 and 45 and incisional biopsy of the lesion was done and sent for the

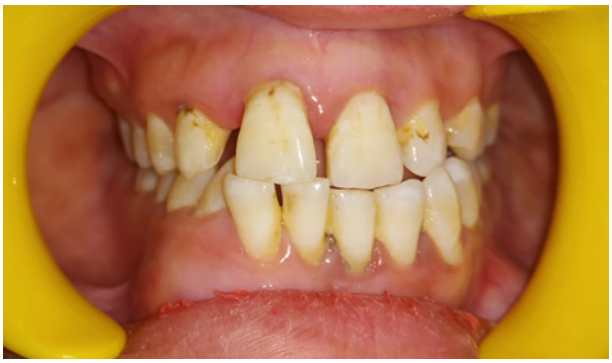

Fig. 2: A diffuse swelling in the 42, 43, 44 and 45 regions

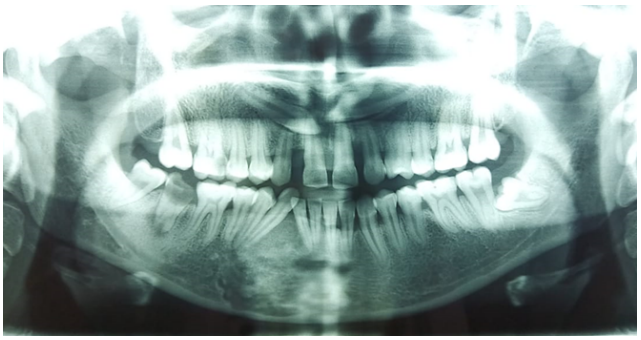

Fig. 3: OPG showing a mixed radiolucent-radioopaque lesion of the mandible in 41, 42, 43, 44 and 45 regions with diffuse foci of calcifications throughout the lesion. Incidentally impacted 13 and 23 were assessed

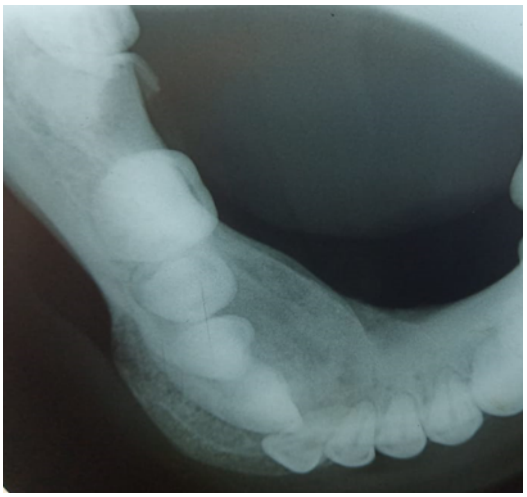

Fig. 4: Lateral mandibular occlusal radiograph showing anexpansile lesion with labio-lingual cortical expansion

histopathological evaluation.

Histopathological examination revealed a highly cellular connective tissue stroma with many fibroblasts and collagen fibres. Osteocyte-filled bone trabeculae and globules of calcification were seen between enlarged fibroblasts. There were a few endothelial-lined blood vessels visible as well, giving the appearance of OF (Figure 5).

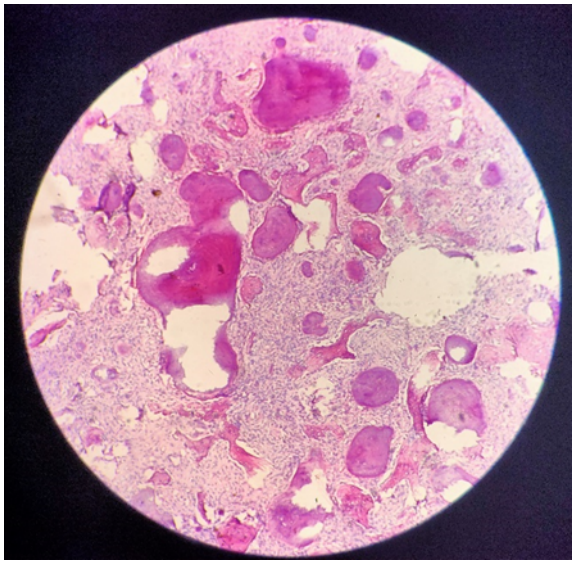

Fig. 5: Eosin and hematoxylin stain showing highly cellular connective tissue stroma with many fibroblasts and collagen fibres. Osteocyte-filled bone trabeculae and globules of calcification is present between enlarged fibroblasts

Correlating all clinical, radiological and histopathological findings, final diagnosis of OF was given. Surgical resection and reconstruction was done. There was no recurrence was noted in follow up period of 2 years.

3. Discussion

The majority of benign FOLs of the jaws develop slowly and without symptoms. The periodontal membrane is assumed to be the origin of OF.[8] The majority of diagnosed OF patients are asymptomatic, and the initial clinical sign is a mandibular cortical surface enlargement that results in a noticeable extraoral facial asymmetry. Females were five times affected than males in an Eversole research. It is often asymptomatic, but if a nerve is affected, discomfort may be present. Mandible is more affected than maxilla.[5]

The most common radiographic characteristics are unilocular or multilocular radiolucencies with ill-defined boundaries and irregular central opacification. Aggressive lesions may exhibit cortical perforation and thinning. While Barberi et al. reported three radiographic patterns for OF, including radiolucent (53%), sclerotic (7%), and mixed type (40%), Lu et al. reported four radiographic patterns for OF, including cystic radiolucency, ground glass appearance, sclerotic change, and mixed type.[6,9,10] Depending on the degree of calcification, the lesions are either entirely radiolucent or mixed on radiographs, or fully radiopaque with a radiolucent margin. Each form of lesion has a sclerotic border surrounding it. Multilocularity is very rare in OF. Root resorption and divergence are common occurrences. The inferior alveolar canal or teeth may be moved as a result of the lesion's development. The outer cortical plate is still intact despite being dislocated and thinned, which is an important fact. Typically, affected teeth lack their lamina dura.[9–12]

Histologically, OF is a well-defined lesion made up of a fibroblastic stroma that also contains acellular mineralized material and lamellar and plexiform bone. Hypercellular fibrous tissue present, with isolated areas of bone tissue or cementiform calcifications on occasion. Mineralized tissue masses resembling osteoid material or cement were seen inside the fibrous stroma together with dystrophic calcifications.[10,11,13]

Osteoblastoma, cementoblastoma, an intraosseous variant of fibromatosis known as desmoplastic fibroma, and osteoid osteoma are among the differential diagnoses.[11]

Due to its propensity for recurrence and potential for malignant development, OF requires extensive surgery. MacDonald-Jankowski recommended enucleation or curettage as the initial line of therapy if recurrence was discovered during follow-up and conservative resection was required. En bloc resection or partial resection of the jaw is typically preferable to prevent or reduce the likelihood of recurrence. Reconstruction should be the main task, if suggested. A lesion under 5 cm in length with an intact soft tissue envelope might be filled with a free bone graft (for example, an iliac bone transplant) in the event of segmental resection of the jaw.[11,14] A larger (>5 cm) defect and particularly when combined with alteration of the surrounding soft tissue, would highlight the requirement for a microvascular transplant.[13,14]

4. Conclusion

OF is very uncommon in young adult like our present case. Making an early diagnosis, using the proper medication, and keeping track of the patient throughout time are crucial.

5. Source of Funding

None.

6. Conflict of Interest

None.

References

1. Liu Y, Wang H, You M, Yang Z, Miao J, Shimizutani K. Ossifying fibromas of the jaw bone: 20 cases. *Dentomaxillofac Radiol.* 2010;39:57–63.

2. Imanimoghaddam M, Zarch SHH, Nemati S, Langaroody AJ. Cemento-ossifying fibroma: Study of radiographic features of six cases. *Iran J Radiol*. 2009;6(4):215–20.
3. Sreenivasan BS, Edward J, Sunil S. Central ossifying fibroma of mandible-a case report. *Oral Maxillofac Pathol J*. 2010;1(1):1–4.
4. Keles B, Duran M, Uyar Y, Azimov A, Demirkan A, Esen HH. Juvenile ossifying fibroma of the mandible: A case report. *J Oral Maxillofac Res*. 2010;1(2):e5.
5. Toro C, Millesi W, Zerman N, Robiony M, Politi M. A case of aggressive ossifying fibroma with massive involvement of the mandible: Differential diagnosis and management options. *Int J Pediatr Otorhinolaryngol Extra*. 2006;1(2):167–72.
6. Moshy J, Dimba E, Ocholla T, Chindia M. Characteristic radiological and histological patterns of fibrous dysplasia and ossifying fibroma of the jaws at University of Nairobi Dental Teaching Hospital. *Surg Sci*. 2012;3(4):189–93.
7. Silvestre-Rangil J, Silvestre FJ, Requeni-Bernal J. Cemento-ossifying fibroma of the mandible: Presentation of a case and review of the literature. *J Clin Exp Dent*. 2011;3(1):66–9.
8. Kendrick F, Waggoner WF. Managing a peripheral ossifying fibroma. *ASDC J Dent Child*. 1996;63(2):135–8.
9. Effiom OA, Adeyemo WL, Soyele OO. Focal reactive lesions of the Gingiva: An analysis of 314 cases at a tertiary Health Institution in Nigeria. *Niger Med J*. 2011;52(1):35–40.
10. Shetty DC, Urs AB, Ahuja P, Sahu A, Manchanda A, Sirohi Y. Mineralized components and their interpretation in the histogenesis of peripheral ossifying fibroma. *Indian J Dent Res*. 2011;22(1):56–61.
11. Poon CK, Kwan PC, Chao SY. Giant peripheral ossifying fibroma of the maxilla: Report of a case. *J Oral Maxillofac Surg*. 1995;53(6):695–8.
12. Ogbureke EI, Vigneswaran N, Seals M, Frey G, Johnson CD, Ogbureke KU. A peripheral giant cell granuloma with extensive osseous metaplasia or a hybrid peripheral giant cell granuloma-peripheral ossifying fibroma: A case report. *J Med Case Rep*. 2015;9:14.
13. Gulati R, Khetarpal S, Ratre MS, Solanki M. Management of massive peripheral ossifying fibroma using diode laser. *J Indian Soc Periodontol*. 2019;23(2):177–80.
14. Prasad S, Reddy SB, Patil SR, Kalburgi NB, Puranik RS. Peripheral ossifying fibroma and pyogenic granuloma. *N Y State Dent J*. 2008;74(2):50–2.

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