

Giant ossifying fibroma of the mandible

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ABSTRACT

Ossifying fibroma is classified as a benign bone tumour. It is often considered to be a type of fibro-osseous lesion. It can affect both the mandible and the maxilla, particularly the mandible. This bone tumour consists of highly cellular, fibrous tissue that contains varied amounts of bone or cementum resembling calcified tissue. This case report is of an unusual peripheral ossifying fibroma involving the left side of mandible in a 22-year-old female patient, who presented to the dental department with a painless hard swelling which impaired proper breathing and mastication. The lesion was treated by surgical resection.

Keywords: ossifying fibroma, fibro-osseous lesion

INTRODUCTION

Ossifying fibroma, a benign bone tumour often considered to be type of fibro-osseous lesion, can affect both the mandible and maxilla, but is more frequently seen in the mandible with an incidence of 70-90% of the cases.^[1] Clinically this tumour appears as a slowly growing intrabony mass which is often asymptomatic and rarely large enough to cause facial deformity or functional problems.^[2] It is commonly seen in the third and fourth decades of life. Radiographically, the lesion is often unilocular and well defined with varying degrees of mineralization. This bone tumour consists of highly cellular, fibrous tissue that contains varying amounts of calcified tissue resembling bone, cementum or both.^[3] Treatment consists of enucleation and curettage or surgical resection for larger lesions. The

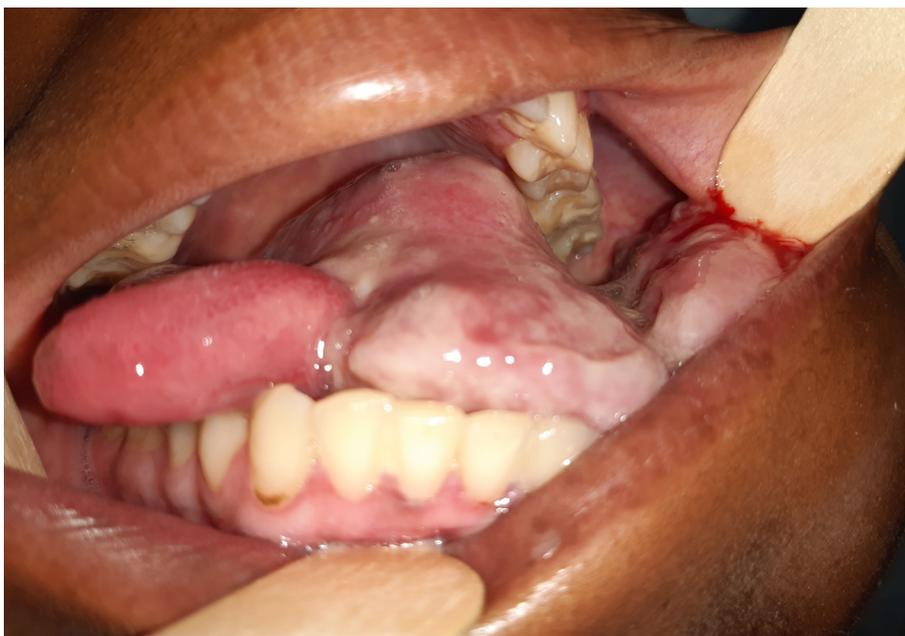


Figure 1. Giant ossifying fibroma of the mandible: massive size, involvement of the mandible, floor of the mouth, cheek, covering the tongue.

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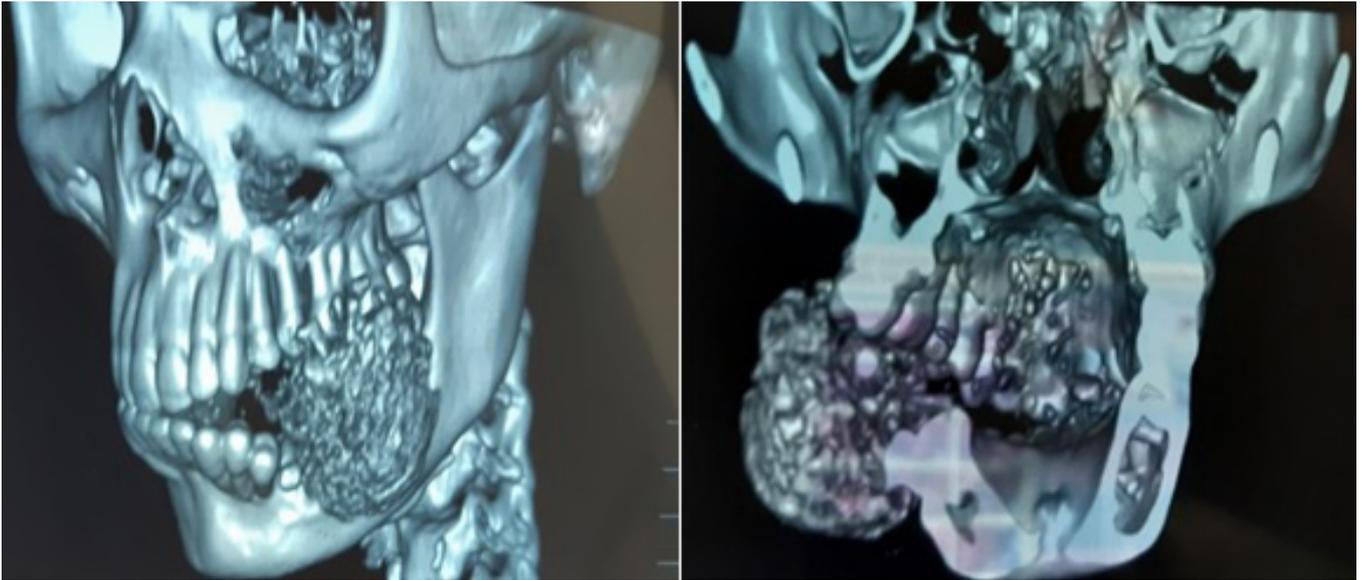


Figure 2. High dense mass of the mandible, measuring 22×9.5×12 cm, affecting alveolar bone and extending like a pedicle to the floor of the mouth, cheek and tongue.

rate of recurrence is usually low.^[4] Although cases of have been reported in the literature, massive expansive lesions, as in this case are unusual.

CASE REPORT

A female patient aged 22 years reported to our department complaining of a painless swelling in the lower left side of the face. Her history revealed that swelling started spontaneously three years ago slowly progressing in size to its current status. Extra oral examination revealed a hard swelling with diffuse borders in the lower left side of the face, approximately 22cm X 11cm in size. The swelling extended from the anterior border of the mandible ramus to the symphysis region, covering the tongue on its posterior part, occupying the floor of the mouth. The swelling was non-tender, hard to palpation, impairing normal speech, mastication and also breathing (Figure 1).

On computed tomography (CT) scan, it was a large, very well defined, single, expansive lesion, 22×9.5×12 cm, involving the body of the lower jaw, floor of the mouth, cheek and tongue. The matrix was calcified, and part of the alveolar bone was involved. The mandible bone was mostly intact (Figure 2).

Incisional biopsy was done and histology showed dense connective tissue stroma with areas of immature bone suggestive of a fibro-osseous lesion. After obtaining informed consent from both the patient and her relatives, resection of the tumour and reconstruction was planned under general anaesthetic.

As the patient could not be intubated and there was no facility at the hospital for fiberoptic intubation, the surgery started with tracheostomy under local anaesthesia. After

the airway was secure, the anaesthesiologist started her procedure. Gastrostomy was also performed to guarantee a way to feed the patient as oral feeding had to be avoided for four weeks. The patient was not able to tolerate a nasogastric tube.

A modified Risdon approach to the midline was used to access the tumour. Resection was carried out using a scalpel blade, electrocautery and a driller. A surgical burr was employed to remove the tumour, which was attached to the alveolar bone occupying the floor of the mouth, cheek and lateral pharyngeal wall. (Figure 3)

Homeostasis was achieved with diathermy, ligations of bleeding vessels and the wound was closed in layers up to the midline, leaving in a vacuum drain. Suturing was performed using vicryl 3-0 and nylon 3.0. (Figure 4). A specimen was taken for histopathological study.

Post-operative healing was satisfactory and the patient was followed up regularly every month for one year (Figure 5a and b).

Histopathology report: microscopic examination of Haematoxylin and Eosin-stained sections showed highly cellular connective tissue composed of interlacing fascicles of plump and proliferating spindle shaped fibroblasts with delicate collagen fibres. Areas of multiple and varying sized dystrophic calcifications were evident.

DISCUSSION

Ossifying fibroma is classically a slowly growing benign tumour that replaces the normal bone as it enlarges. The precise pathogenesis is unknown. Some authors suggest the role of trauma induced stimulation. The origin of this neoplasm lies in the multipotent, undifferentiated,

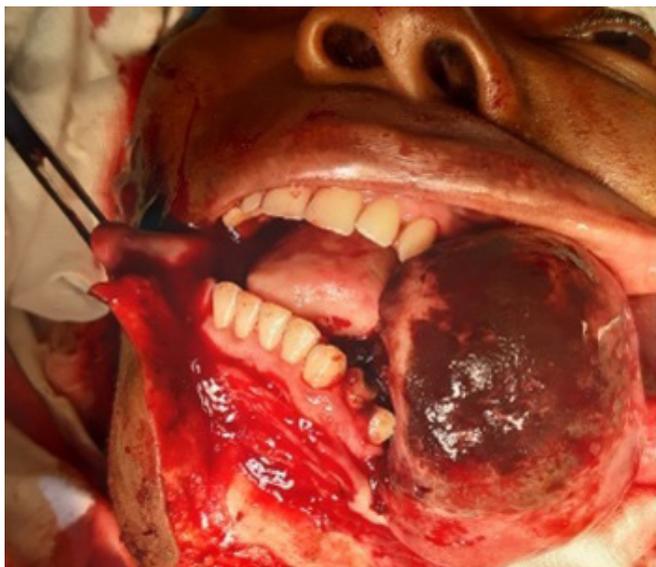


Figure 3. Exposure of tumour through Modified Risdon approach, opening midline.

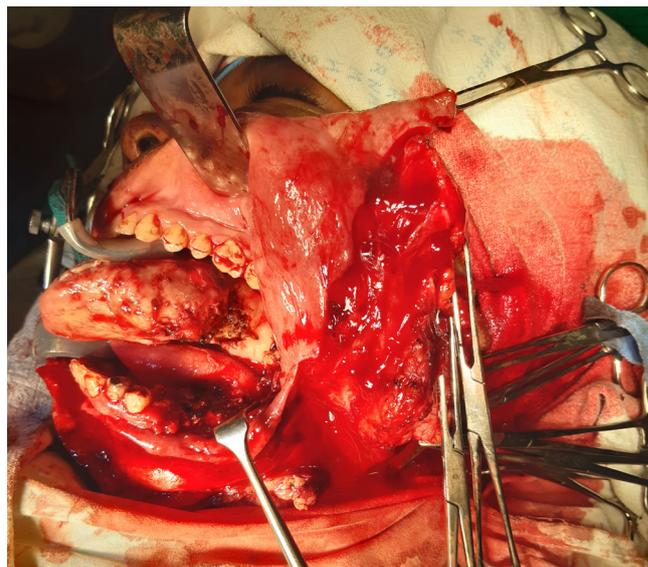


Figure 4. Surgical defect after surgery.



Figure 5a and b. Follow up after 3 weeks and 3 months.

mesenchymal cells of the periodontal ligament tissues capable of forming both bone and cementum. Based on the microscopic similarity with fibrous dysplasia, some investigators consider it to be a localized dysplastic process in which bone metabolism has been altered. The neoplastic aetiology is supported by its persistent, locally aggressive growth characteristics and the occasional reports of local recurrences.^[5]

Most of these tumours are asymptomatic at the time of initial presentation. The most common site of origin is the teeth bearing portion of the jaws; the mandible being more commonly involved. Most affected patients are in the third or the fourth decade of life. Females are more commonly affected than males.^[5] The well-defined border between the tumour and the surrounding uninvolved bone tissue differentiates it from fibrous dysplasia.

On radiography, the early tumours are radiolucent but become radiopaque when the tumours become old. The teeth are gradually displaced to the periphery of the mass or, rarely, the roots may be resorbed. There is no evidence for a potential for malignant transformation. Complete surgical excision followed by reconstruction is the standard management. Recurrences are rare and should be managed surgically.^[6-8]

The basic principle behind this surgery was the successful excision of the whole tumour mass with the affected alveolar bone, followed by the reconstruction of the mandible and soft tissues of the face. The extra-oral approach used carries the advantages of avoiding difficulties accessing the site involved, providing a satisfactory field of view of the tumour, as well as the surrounding structures involved. However, it leads to an external wound defect

and risk of facial nerve damage. Nevertheless, all depends on the skills of the surgeon. In the present case it was impossible to use an intraoral approach because of the size of the tumour and its extension to the lateral pharyngeal wall, and obvious risk of bleeding. After full recovery the patient should be able to lead a good social life with minimum restrictions.^[9-11]

All images were taken, with the patient's permission, by the author.

References

1. Bala TK, Soni S, Dayal P, Ghosh I. Cemento-ossifying fibroma of the mandible. A clinicopathological report. *Saudi Med J.* 2017; 38(5):541-545. <https://bit.ly/3IzUhut>
2. Bajpai M, Goel P, Bhutia O, et al. Massive ossifying fibroma of the mandible in a child. *J Indian Assoc Pediatr Surg.* 2013; 18(1):20-22. <https://doi:10.4103/0971-9261.107011>
3. Patait M, Chaudhari V, Mathew Ashok, et al. Cemento-ossifying fibroma: Case report. *International Journal of Applied Dental Sciences* 2020; 6(4): 215-218. <https://www.oraljournal.com/pdf/2020/vol6issue4/PartD/6-3-88-679.pdf>
4. Patait M, Chaudhari V, Mathew Ashok, et al. Cemento-ossifying fibroma: Case report. *International Journal of Applied Dental Sciences* 2020; 6(4): 215-218. <https://www.oraljournal.com/pdf/2020/vol6issue4/PartD/6-3-88-679.pdf>
5. Seifi S, Foroghi R, Rayyani A, ET all. Juvenile Trabecular Ossifying Fibroma-a Case Report. *Indian J Surg Oncol.* 2018; 9(2):260-264. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5984869/>
6. Fatma S, Das SN, Singh S, Rath R. Juvenile Trabecular ossifying fibroma of the mandible. *Oncol J India [serial online]* 2019 [cited 2021 Aug 15]; 3:16-9. <https://www.ojionline.org/text.asp?2019/3/1/16/257613>
7. Nicollas R, Vinicius TG, Marcelo P, et al. Orbit ossifying fibroma – Case report and literature review. 28-Feb-2020; 11:35. <https://bit.ly/3KI3G5a>
8. Zhou QX, Yi WM, Shan OH, et al. Post-operative hemimaxillectomy rehabilitation using prostheses supported by zygoma implants and remaining natural teeth. *Clinical Science Clinics* 71 (10). Oct 2016. <https://www.scielo.br/j/clin/a/xKDFJBqL3qXGHJzKcJ98xHz/?lang=en>
9. Nilofar BA, Rajesh PG, Shraddha CJ, et al. Gingival enlargement in 10 years old: a case report. *Int J Contemp Pediatr.* 2017 Jan; 4(1):286-289. <https://www.ijpediatrics.com/index.php/ijcp/article/view/164>
10. Katti G et al. Cemento-ossifying fibroma of the jaw. *BMJ case reports* vol. 2016 bcr2015214327. 12 May 2016.: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4885328>
11. Kharsan V et al. Large ossifying fibroma of jaw bone: a rare case report. *The Pan African Medical Journal* 2018; 30(306). <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6320444>