A RARE SYNCHRONUS CEMENTO-OSSIFYING FIBROMA OF MAXILLA AND MANDIBLE: A CASE REPORT

Abhishek Pandey[1],Jigna Shah[2],Aruna Das[3],Pooja Dwivedi[4],Santosh Kumar[5]
1.Sr. Lecturer, Dept. Of Oral Medicine and Radiology,Dental College, Azamgarh
2.Prof. & Head, Dept. Of Oral Medicine and Radiology,Govt. Dental College and Hospital, Ahmedabad
3.Prof. & Head, Dept. Of Oral Medicine and Radiology,Dental College, Azamgarh
4.PG student,Dept. of Prosthodontics, Dental College, Azamgarh
5.Sr. Lecturer, Dept. Of Oral Medicine and Radiology,Dental College, Azamgarh

ABSTRACT
Ossifying fibromas are uncommon benign tumors of the craniofacial skeleton supposed to originate from the periodontal ligament. Patients with larger lesions may complain of an abnormal swelling or an enlarging mass. This tumor generally arises in the mandible, with possible early tooth displacement. Radiographically, more than 50% of the lesions exhibit an expansion of the jaws and 53% shows well-defined unilocular radiolucencies and 40% are mixed radiolucent-radiopaque lesions. The lesions exceptionally can be radiopaque. Ossifying fibroma presents several variant histopathological subtypes. Complete excision of this tumor has become a necessity since it is notorious for recurrence. Multiple ossifying fibromas are rare so here we present a rare case of multiple ossifying fibroma involving both the jaws.
Key Words: Cemento-ossifying fibroma,tumor

INTRODUCTION

Cemento-ossifying fibroma (COF) is a bone producing, slow growing, asymptomatic, well-demarcated, benign lesion of the jaw.[1] In 1872 Menzel gave the first description of ossifying fibroma.[2] The cemento-ossifying fibromas or ossifying and/or cementifying fibromas have been described as demarcated or rarely, encapsulated neoplasms consisting of fibrous tissue containing varying amounts of mineralized material resembling bone and/or cementum.[3]

These benign fibro-osseous lesions can arise from any part of the facial skeleton and skull with over 70 per cent of cases arising in the head and neck region.[3] These cases involve mainly the mandible and maxilla.

Most probably tumor originates from periodontal membrane, therefore, with double embryonic origin (ectodermic and mesodermic).Bernier hypothesized that the etiopathogenesis of COF in the bone might be caused by an irritant stimulus (such as tooth extraction) which may activate the production of new tissue from the remaining periodontal membrane.[1]

Corresponding Author: Dr Abhishek Pandey Email: abhishek_updc@yahoo.co.in

It is most commonly seen between the third and fourth decades of life and is more frequent in women than in men (4:1). The most common location is the mandible, with 70-90% of all cases. Clinically, these tumors manifest as a slow-growing intra bony mass that is normally well delimited and asymptomatic – though over time the lesion may become large enough to cause facial deformation.[4]

Radiographically, the lesion usually has a distinct boundary and in the early stages, it presents as a lucent area. As the lesion matures, bone densities appear, transforming the lesion into a radiopaque mass surrounded by a radiolucent capsule. The tumor grows concentrically within the medullary part of the bone, with outward expansion approximately equal in all directions.[5]

Displacement of teeth or the inferior alveolar canal is present, outer cortical plate, although displaced and thinned, remains intact. The lamina dura of involved teeth usually is missing, and resorption of roots may occur. Larger lesions require CT scan for detailed examination of the extent of the lesion.[5,6]

Cemento-Ossifying fibroma is composed of fibrous connective tissue with well-differentiated spindled fibroblasts. Cellularity is uniform but may vary from one lesion to the next. Collagen fibers are arranged haphazardly, although a whorled, storiform pattern may be evident. Cementum and bony structures are distributed throughout the fibrous stroma.[7]

Conservative surgical excision is the treatment of choice and recurrence is rare.[4, 5]

CASE REPORT:

A 35 year old male patient visited to the department of Oral diagnosis and radiology, G.D.C.H. Ahmedabad with the chief complaint of painless swelling on the right side of face since 2 years for which he had not taken any treatment. He had removed his upper right posterior teeth by himself due to mobility of teeth; however the swelling didn't subside and is constant in size since then. There is no history of any trauma or spontaneous bleeding.

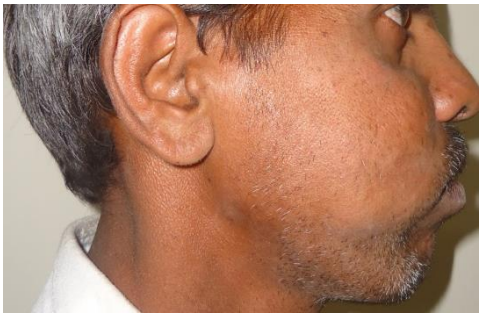

Fig.1 showing diffuse swelling on right side of face

On examination extra orally a single diffuse swelling of size approx 6 x 4 cm was present on right side of face extending from ala of nose to posterior border of ramus and superioinferiorly from zygomatic arch to lower border of mandible, with normal overlying skin (fig.1). On palpation the swelling was nonwarm, non-tender, non-compressible and hard in consistency.

Intraoraly a single well defined swelling of size approx 3x2 cm was present in lower right buccal vestibule, with buccal expansion in the affected area and lingual displacement of 46,47 and distal displacement of 48, normal overlying mucosa. Another single ill-defined swelling of size approx 5x3 cm was present on upper right ridge, with Buccal

and palatal expansion in the affected area and normal overlying mucosa and also showed buccal displacement of 15,16 and missing 17,18. Grade II mobility was observed in 15 and 16. (fig.2 & 3)

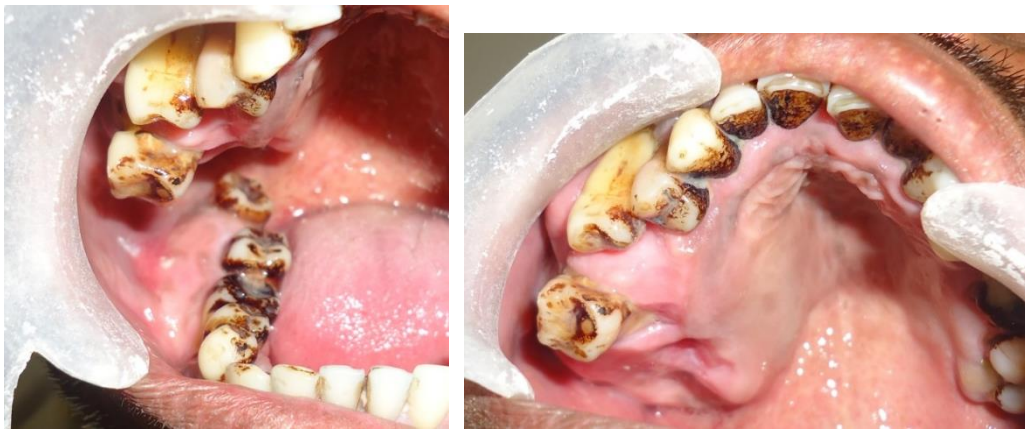

Fig. 2 & 3 showing swelling in relation with mandible and maxilla

On the basis of clinical features differential diagnosis of Ameloblastoma and Cemento ossifying fibroma was considered.

Intraoral and extraoral radiographs were then taken to aid in the clinical diagnosis. It showed a single ill-defined mixed radioopaque lucent lesion in right body of mandible, extending anteriorly from 45 to posteriorly up to 48 & superioinferiorly from above the alveolar process to 5mm above lower border of mandible. The internal structure was hazy in appearance and surrounded by a radiolucent halo, no root resorption. It also showed a single ill-defined mixed radiopaque lucent lesion in right half of maxilla up to floor of orbit, with multilocular appearance in anterior aspect and homogenous radiopacity in posterior aspect with radiolucent capsule. Superior displacement of floor of maxillary sinus to level of floor of orbit was seen. PNS view showed haziness in right maxillary sinus & displacement of floor and posterior wall of maxillary sinus.

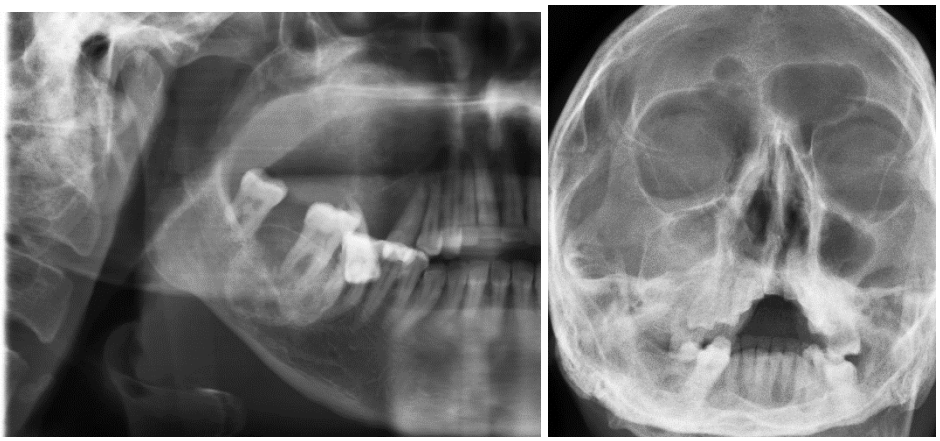

Fig.4 showing cropped image of OPG with radiopaque mass in maxilla and mandible and Fig.5 showing cropped image of PNS view showing opacity in rt. maxillary sinus with displacement of walls of maxillary sinus

A CT scan was then performed to further study the lesion. It revealed mixed hyperdense hypodense lesion in right side of both maxilla and mandible with calcification present inside the lesion with thinning and expansion of cortical plates s/o benign fibro osseous lesion (Fig.6)

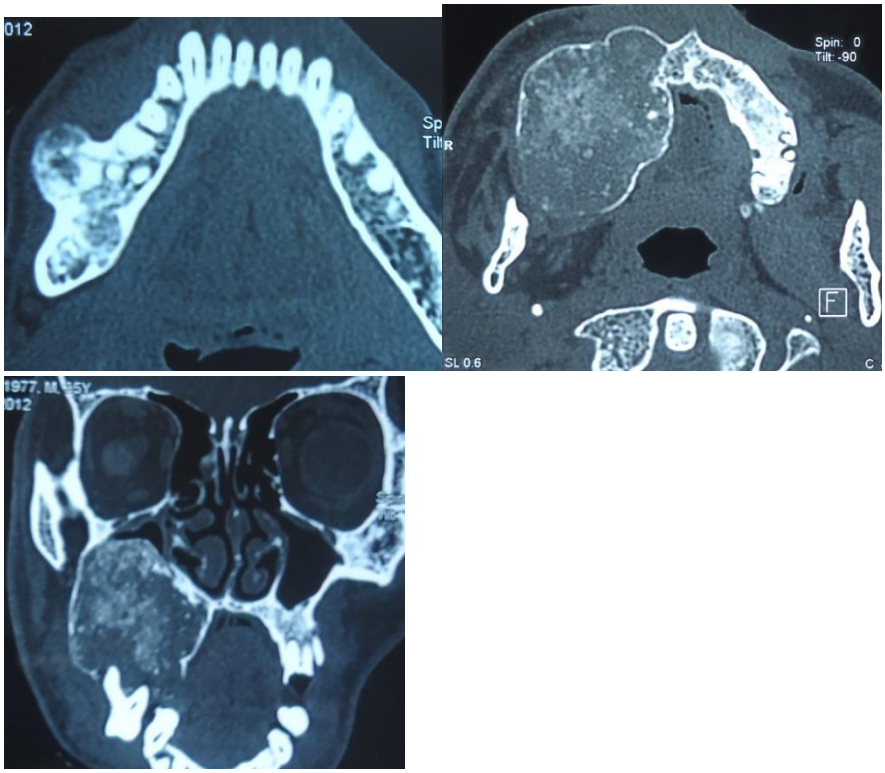

Fig.6 showing cropped CT scan images showing opacity in right side of body of mandible and maxilla with displacement of walls of maxillary sinus

A provisional diagnosis of cemento-ossifying fibroma was made. Patient has undergone surgical excision of the both the lesion under GA and the histopathology report in both the mandible and maxillary lesions were s/o Cemento ossifying fibroma (fig7).

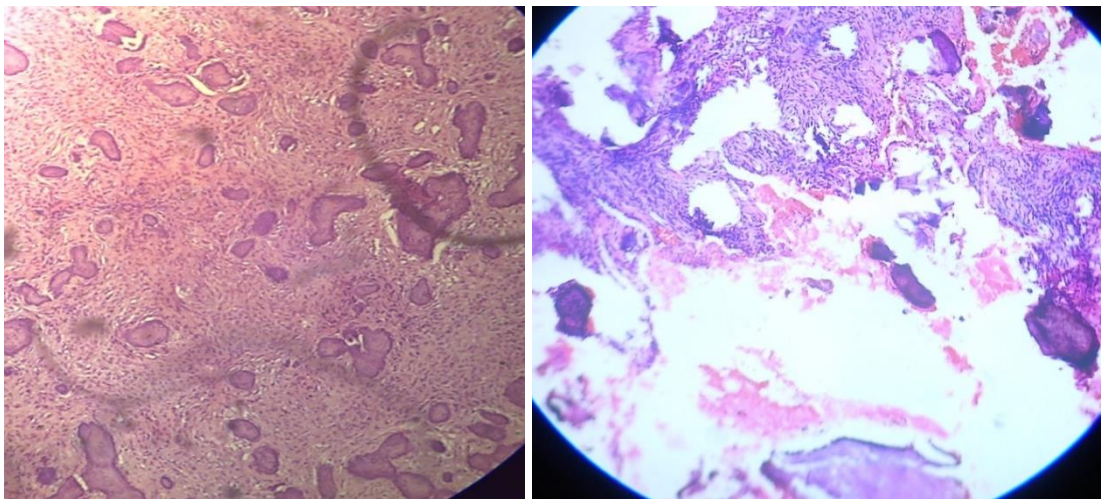

Fig7. Showing histological picture suggestive of cemento-ossifying fibroma of 1.mandible 2.maxilla

DISCUSSION

Ossifying fibroma is mainly diagnosed between the second and fourth decades of life, with women being affected more frequently than men. As our both case was male patient of 35 years age, which is in accordance with literature. Multiple synchronous central OFs are rare events, with only few previously reported cases. Our case has OF in both jaws on same side which is extremely rare case and no such cases have been described.

Initially asymptomatic, the tumor progressively grows up to a point in which its size causes a painless swelling of the involved bone as well as functional alterations and cosmetic deformities. Displacement of the teeth may be an early clinical feature but the teeth remain vital and the overlying mucosa is characteristically intact. Our patient had similar features.

Radiologically, the lesion appears initially as an osteolytic image followed by gradual transformation into a mixed lesion – in exceptional cases becoming radiopaque, most often associated with a well-defined radiolucency with or without a sclerotic margin, and often accompanied by cortical expansion. This lesion maintains a spherical shape, expands the surrounding cortical bone without cortical perforation, and may cause tooth displacement. Large maxillary lesions may involve the nasal septum, orbital floor and infraorbital foramen. Maxillary central OFs are large at the time of presentation, indicating the capacity of the tumor to expand freely within the maxillary sinus. Our case presents similar features as mentioned above.

Ossifying fibroma consists of fibrous tissue that exhibits varying degrees of cellularity and contains mineralized material. The hard tissue portion may be in the form of trabeculae of osteoid and bone or basophilic and poorly cellular spherules that resemble cementum. As our case had cementum like material intermixed with dense fibrous tissue was s/o cemento-ossifying fibroma.

CONCLUSION

Ossifying fibroma is an uncommon benign fibro-osseous tumor of the craniofacial region that is diagnosed with a combination of clinical, radiological and pathological criteria. Multiple OFs are extremely rare. Early detection and complete surgical resection of these lesions followed by long term follow-up bear importance in clinical management.

REFERENCES

1. S Jayachandran, S Sachdeva: Cemento-ossifying Fibroma of Mandible: Report of Two Cases :Journal of Indian Academy of Oral Medicine and Radiology, January-March 2010;22(1):53-56
2. Sarwar H G , Jindal M K . Ahmad S S : Cemento-Ossifying fibroma – a rare case; J Indian soc Pedodontic Prevent Dent : sep2008
3. Ah Hup M. Ong et. al.: Cemento-ossifying fibroma with mandibular fracture. Case report in a young

patient: Australian Dental Journal 1998;43:(4):229-33
4. Javier Silvestre-Rangil, Francisco Javier Silvestre, Juan Requeni-Bernal: Cemento-ossifying fibroma of the mandible: Presentation of a case and review of the literature: J Clin Exp Dent. 2011;3(1):e66-9
5. Freny R Karjodkar: Textbook of Dental and Maxillofacial Radiology: 2nd ed; Jaypee publishers
6. White and Pharioah: Oral Radiolgy principles and Interpretation: 6th ed
7. Regezi: Oral Pathology: Clinical Pathologic Correlations, 5th ed.
8. M. Imanimoghaddam ,S.H. Hosseini Zarch, S. Nemati ,A. Javadian Langaroody Cemento-Ossifying Fibroma: Study of Radiographic Features of Six Cases: Iran J Radiol 2009, 6(4)
9. A. John Kuta, C. MacDonald Worley, and George E. Kaugars: Central Cementoossifying Fibroma of the Maxillary Sinus: A Review of Six Cases: AJNR 16:1282–1286, Jun 1995 0195-6108/95/1606–1282 q American Society of Neuroradiology
10. E-H Hwang, H-W Kim, K-D Kim and S-R Lee Multiple cemento-ossifying fibroma: report of an 18-year follow-up: Dentomaxillofacial Radiology (2001) 30, 230- 234