

Cemento-Ossifying Fibroma – A Rare Case Report with Review of Literature

Varsha Pandey¹, Anjana Sharma¹, V Sudarshan²

ABSTRACT

Introduction: Cemento-ossifying fibroma is a rare benign neoplasm presenting as bony mass in mandible and maxilla. It is usually common in females in age group of 30-40 years. There was much debate on classification of the entity. The WHO has classified it as under fibro-osseous neoplasm included among the non-odontogenic tumors.

Case Report: We reported an uncommon case of Cemento-ossifying fibroma in 24 years old female presented as swelling over palate along with current review of literature.

Conclusion: The definitive diagnosis of cemento-ossifying fibroma is usually established based on the correlation between clinical, radiological, and histological findings.

Keywords: Benign, cementum, cemento-ossifying fibroma, fibro-osseous, osteoid.

INTRODUCTION

The cemento-ossifying fibromas are rare benign neoplasm most commonly arising from mandible and maxilla.^{1,2} These usually arise from the tooth bearing areas of these bones.

These are more common in females in third to fourth decade of life.²⁻⁵ Clinically these present as slow growing, well circumscribed intra-bony mass which expand the underlying bone.⁴ These are usually small in size but can become large especially when these arise from the maxilla or paranasal sinuses as there is more area. These are initially lucent on x-ray with soft tissue attenuation on CT. There is progressive increase in calcification/ossification. Histologically these are composed of fibrocellular tissue along with areas of concentric calcifications and acellular mineralization and other areas showing recently formed osteoid with peripheral osteoblasts.⁶

We present a rare case of cement-ossifying fibroma along with review of literature.

CASE REPORT

A 24 years old female presented with complaint of swelling over the palate for 5 months in department of Eye, Nose and Throat at C.C.M. Medical College, Durg, (C.G.). The swelling was gradually increasing in size. On intraoral examination, non-tender, hard swelling was found to present on the hard palate measuring 1.5 x 1 x 1 cm. The overlying mucosa was unremarkable. The lesion was clinically diagnosed as epulis and surgical enucleation of the lesion was done. The specimen was sent for histopathological examination. No recurrence was noted in regular follow up.

Gross Features

We received single, grey white, firm tissue mass measuring 1.5 x 0.8 x 0.5 cm. Cut surface was solid and greyish white. The whole tissue was submitted for histopathological processing.

Microscopic Features

Haematoxylin and eosin stained sections showed normal covering squamous epithelium with presence of abundant fibro-cellular connective tissue stroma. Cellular component was composed of fibroblasts. There was spheroidal deposits of cementum like material. The lesion was diagnosed as a cemento-ossifying fibroma (Figures 1-3).

DISCUSSION

Cemento-ossifying fibroma (COF) is an uncommon, benign fibro-osseous tumor. Menzel was first to describe the lesion in 1872.⁷ There was much confusion regarding its origin and relationship to other similar entities. Its origin as odontogenic or non-odontogenic osseous tumor is also under debate.^{8,9} The World Health Organization has kept cemento-ossifying fibroma in category of fibro-osseous neoplasm. It is incorporated in non-odontogenic tumors derived from the mesenchymal blast cells of the periodontal ligament.

These blast cells have a potential to form fibrous tissue, cement and bone, or a combination of such elements.¹

Cemento-ossifying fibromas are most commonly found during the third and fourth decades with female preponderance (F:M = 2-5:1).⁷ Few cases have been reported in children, in which these are more aggressive and are termed as juvenile aggressive cemento-ossifying fibromas. In our case, the patient was 24 years old female.

It usually presents as slow growing, well circumscribed, solid mass most commonly involving mandible, in 70-90% of all cases.^{1,2} Most specifically it arises from the premolar region of the mandible (77%).¹⁰ Growing tumor often displace teeth from their normal location. Other locations within the head and neck have been described.¹ COF is usually asymptomatic as found in about 50% of cases but may cause facial asymmetry and displacement of dental roots when grown to larger size.² The reports of more aggressive lesions characterized by rapid and extensive growth, capable of causing mandibular fractures, and multiple lesions have also been documented.¹ In our case, patient presented with gradually increasing, non-tender swelling over the palate and there was history of tooth pain or dental caries.

The pathogenesis of cement-ossifying fibroma is still not clear.

¹Assistant Professor, Department of Pathology, ²Professor and Head of Department, Department of Pathology, C.C.M. Medical College, Durg (C.G.), India

Corresponding author: Dr Varsha Pandey, B 35, 36, Subran House, VIP Estates, Vidhan Sabha Road, Raipur, Chhattisgarh, India

How to cite this article: Varsha Pandey, Anjana Sharma, V Sudarshan. Cemento-ossifying fibroma – a rare case report with review of literature. International Journal of Contemporary Medical Research 2016;3(9):2681-2682.

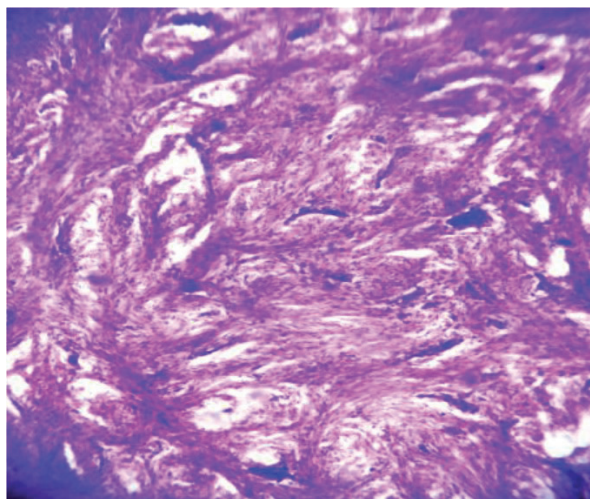


Figure-1: Photomicrograph showing fibro-cellular connective tissue stroma (10x, H and E)

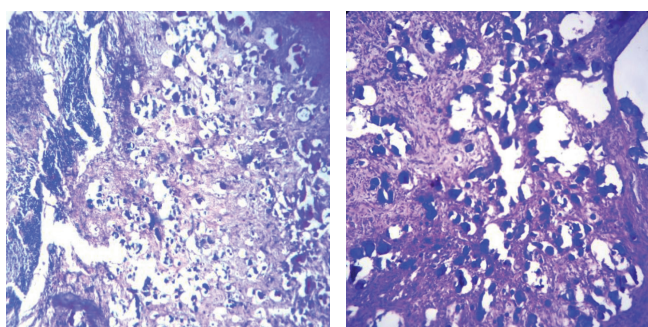


Figure-2: Photomicrograph showing Fibrous stroma along with spheroidal deposits of cementum like material (10x, H and E);

Figure-3: Photomicrograph showing Fibrous stroma along with spheroidal deposits of cementum like material (40x, H and E)

Majority of cases in literature have been found to be associated with history of trauma in the area of lesion. Some studies shows that infection and trauma like dental extraction stimulate the periodontal membrane to produce and deposit cementum.¹ However, in our case there was no history of trauma in the area of lesion.

On imaging, cemento-ossifying fibromas shows various patterns depending on the proportion of fibrous and osteoid tissue. These are usually small in size and well delimited but gradually can become large. This is particularly common when these arise from roomy spaces like maxilla or paranasal sinuses. 'Giant ossifying fibroma' is the term used when lesions with size more than 80 mm are present. These are initially lucent on x-ray with soft tissue attenuation on CT. As these mature, gradually develop increasing amounts of calcification/ossification and usually expand the bone without cortical breach.¹⁰ There is enhancement of soft tissue component on CECT. COF is usually composed of a mixture of calcified and non-calcified soft-tissue (predominantly fibrous), the whole tumor is largely of low intensity on MRI.¹⁰

The histopathological examination shows the presence of hypercellular fibrous tissue with the occasional presence of islands of bony or cementum like tissue.¹ Mineralized tissue masses of basophilic appearance intermingled in fibrous stroma correspond to osteoid material or cement.² The overall morphology is benign with minimal mitosis and no atypical

mitosis and necrosis.

The differential diagnosis includes fibrous dysplasia (cementifying variant). Both the the clinical and radiological findings should be considered for definitive diagnosis apart from histopathological features. Multiple sections of the tumor mass are required as identifying histopathological features are sometimes not observed in each and every portion of the tumor.^{1,2}

Surgical excision is the treatment of choice along with bone grafting or reconstructive surgery.¹⁰ Recurrence is unusual.⁷ However, in some series, it has been reported to be as high as 28%.¹⁰

CONCLUSION

Cemento-ossifying fibroma is a rare benign neoplasm arising from mandible and maxilla. The definitive diagnosis of the entity is usually established based on the correlation between clinical, radiological, and histological findings. The diagnosis should be considered in any lesion arising from mandible and maxilla showing presence of fibrous and osteoid tissue in variable proportion.

REFERENCES

1. Liu Y, Wang H, You M, Yang Z, Miao J, Shimizutani K et al. Ossifying fibromas of the jaw bone: 20 cases. *Dentomaxillofac Radiol.* 2010;39:57-63.
2. Sanchis JM, Peñarrocha M, Balaguer JM, Camacho F. Fibroma cemento-osificante mandibular: Presentación de dos casos y revisión de la literatura. *Med Oral.* 2004; 9:69-73.
3. Pérez-García S, Berini-Aytés L, Gay-Escoda C. Fibroma osificante maxilar: Presentación de un caso y revisión de la literatura. *Med Oral.* 2004;9:333-9.
4. Martín-Granizo R, Sánchez-Cuellar LA, Falahat F. Cemento-ossifying fibroma of the upper gingivae. *Otolaryngol Head Neck Surg.* 2000;122:775.
5. Galdeano-Arenas M, Crespo-Pinilla JI, Álvarez-Otero R, Espeso-Ferrero A, Verrier-Hernández A. Fibroma cemento-osificante gingival mandibular. presentación de un caso. *Med Oral.* 2004; 9:176-9.
6. Javier Silvestre-Rangil et al, Cemento-ossifying fibroma of the mandible: Presentation of a case and review of the literature, *Oral Medicine and Pathology, Clin Exp Dent.* 2011;3:e66-9.
7. Sarwar HG, Jindal MK, Ahmad SS. Cemento-ossifying fibroma--a rare case. *J Indian Soc Pedod Prev Dent.* 2008;26:128-31.
8. Yonetsu K, Nakamura T. CT of calcifying jaw bone diseases. *AJR Am J Roentgenol.* 2001;177:937-43.
9. Stergiou GC, Zwahlen RA, Grätz KW. Multiple cemento-ossifying fibromas of the jaw: a very rare diagnosis. *Schweiz Monatsschr Zahnmed.* 2007;117:236-44.
10. Kuta AJ, Worley CM, Kaugars GE. Central cementoossifying fibroma of the maxillary sinus: a review of six cases. *AJNR Am J Neuroradiol.* 16:1282-6.

Source of Support: Nil; **Conflict of Interest:** None

Submitted: 26-07-2016; **Published online:** 09-09-2016