



ISSN: 0975-833X

Available online at <http://www.journalcra.com>

*International Journal of Current Research*  
Vol. 11, Issue, 03, pp.2579-2582, March, 2019

DOI: <https://doi.org/10.24941/ijcr.34920.03.2019>

**INTERNATIONAL JOURNAL  
OF CURRENT RESEARCH**

## RESEARCH ARTICLE

### INSIGHT INTO CEMENTO OSSEOUS DYSPLASIA–A CASE REPORT

**Charusuri, \*Mallipudi Bhavana, Syed Afroz Ahmed, Satish Brahme, K Shraddha  
and Shahela Tanveer**

Dental Council of India

#### ARTICLE INFO

##### Article History:

Received 03<sup>rd</sup> December, 2018  
Received in revised form  
20<sup>th</sup> January, 2019  
Accepted 14<sup>th</sup> February, 2019  
Published online 31<sup>st</sup> March, 2019

##### Key Words:

Benign Fibro-Osseous Lesions,  
Cemento-Osseous Dysplasia, Odontoma.

**Copyright** © 2019 Charusuri et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

**Citation:** Charusuri, MallipudiBhavana, Syed Afroz Ahmed, Satish Brahme, K Shraddha and Shahela Tanveer. 2019. "Insight into cemento osseous dysplasia–a case report.", *International Journal of Current Research*, 11, (03), 2579-2582.

#### ABSTRACT

A female patient named Suguna of 68 years presented with a benign fibro-osseous lesion that was located apically in the mandibular anterior teeth region which was provisionally thought to be an odontoma. The pathogenesis and its origin is discussed in detail in this case report.

## INTRODUCTION

Fibro osseous lesions (FOL) are designation of poorly defined group of lesions which are recognized to affect the jaws and craniofacial bones which are known for their confusing area in diagnostic pathology (Srichinthu, 2016). These are clinically diverse group of disorders of bone that have similar histopathologic features.<sup>2</sup> Accurate distinction can be done with a knowledge of clinical and radiographic information in conjunction with histopathology. Focal osseous dysplasia (FOD), also known as focal cemento osseous dysplasia (FCOD), is the most common FOL of the jaw (Evelyn, 2011). It is again classified into three groups that is periapical, focal, and florid based on their clinical and radiographical characteristics (Gumusok, 2014). Association of FOLs with simple bone cysts and aneurysmal bone cyst has been reported previously (Georgios et al., 2011). Herein we present a case of FOL which was provisionally thought to be an odontoma.

#### Case Details

A Cone beam computed tomography (CB-CT) Scan (Fig 1) in a 68yr old female complaining of pain and loose prosthesis in the region from mandibular right to mandibular left canine, incidentally revealed radio opaque masses which were well circumscribed. Clinically intraoral swelling was not evident (Fig 2).

Removal of loose prosthesis and extraction of lateral incisors was done followed by surgical removal of radio opaque masses (Fig 4). Grossly, the biopsy consisted of multiple grey-white, soft to hard tissue fragments, measuring 4mm X 8mm X 3mm with irregular borders (Fig 5). The specimen was fixed in 10% buffered formalin and decalcified. The paraffin embedded tissue was cut into 5µm- thick and stained with hematoxylin and eosin. Microscopic examination revealed intersecting bundles of cellular, fibro vascular connective tissue with irregularly shaped calcifications akin to bone or cementum. Although unencapsulated, the lesion was surrounded by mature bone (Fig 6,7). Modified Gallego's special stain was used to confirm the diagnosis. Bone revealed light green colour and cementum revealed dark red color (Fig 8). A final diagnosis of FCOD was made.

## DISCUSSION

The term benign FOL refers to a group of neoplastic conditions in which normal bone is replaced initially by fibrous connective tissue and over a period of time, the lesion is infiltrated by osteoid and cementoid tissue.<sup>6</sup> These entities are composed of spindle-shaped, fibroblast-like cells and collagen, with only a few interspersed trabeculae of bone and cementum-like calcified material histopathologically.<sup>4</sup> One specific entity included in this group of conditions and occurring in the jaws is cemento-osseous dysplasia. "Osseous dysplasia" (OD) has been acknowledged as "cemento-osseous

\*Corresponding author: Mallipudi Bhavana,  
Dental council of India.



Fig 1. CBCT Scan showing radio opaque masses with a radiolucent sclerotic border and expansion of the cortical bone



Fig 2. Pre operative clinical picture of the patient with no evidence of any swelling in the mandibular anterior region



Fig. 3. Operative picture



Fig. 4. Post operative picture of the prosthesis and extracted lateral incisor

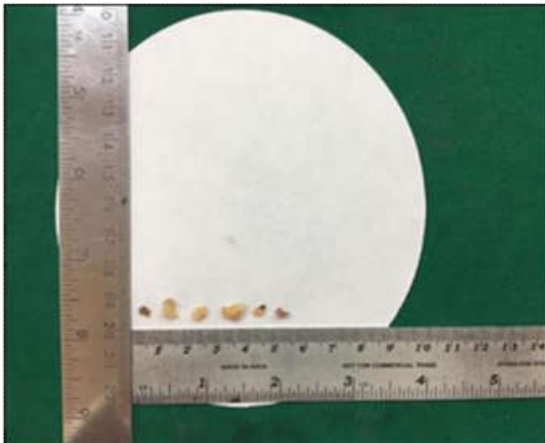


Fig. 5. Gross picture showing multiple bits of the specimen



Fig. 6. H & E Photomicrograph of the section showing cementum and bone like component with sparse connective tissue (4x)

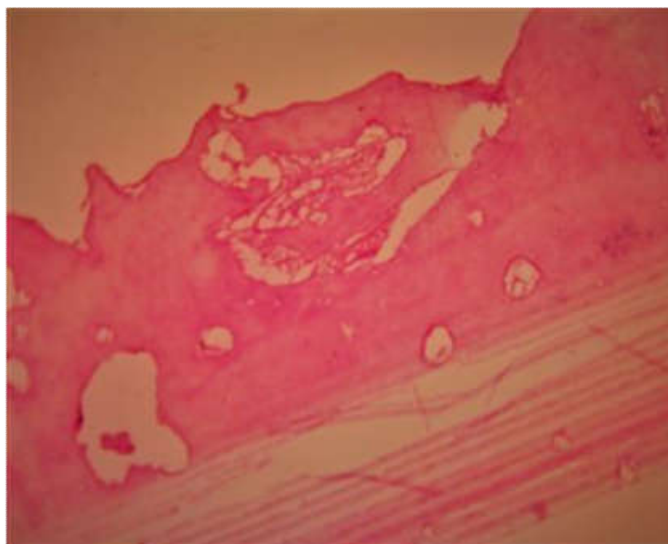
dysplasia" (COD) by World Health Organisation (WHO) as a synonym. This terminology has created some confusion in the literature (Noura, 2011). They are predominantly seen in black women with peak incidence in 4<sup>th</sup> and 5<sup>th</sup> decades of life. Mandible is the most frequent site (Singh, 2010).

In its 2005 publication, the WHO described 3 clinical presentations of OD/COD

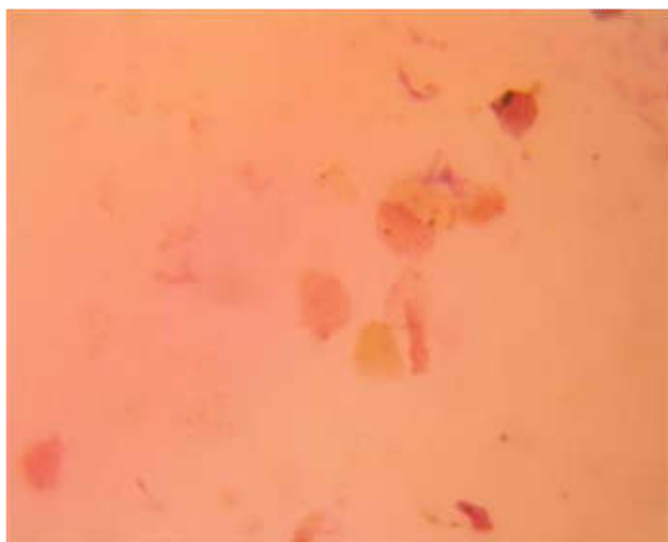
- **periapical OD/COD:** dysplastic lesions occurring in the anterior mandible and involving only a few adjacent teeth

- **focal OD/COD:** similar to periapical OD/COD, but with the limited number of lesions occurring in a posterior jaw quadrant (rather than in the anterior mandible)
- **florid OD/COD and familial gigantiform cementoma:** more extensive forms, occurring bilaterally in the mandible or in all jaw quadrant (Noura, 2011)
- **2017 WHO** edition reverts back to cemento-osseous dysplasia in order to recognise them as odontogenic with an origin in periodontal ligament.

FCOD is usually asymptomatic, related to a tooth which is vital and diagnosed during routine radiographic examination.



**Fig 7. H & E Photomicrograph of the section showing cementum and bone like component with sparse connective tissue (40x)**



**Fig. 8. Modified Gallegos stain showing showing bone in greenish yellow color and cementum in red color (10x)**

MacDonald-Jankowski reported that pain and swelling was seen with rates of 25% & 28% respectively.<sup>4</sup>In the present study patient had a complaint of pain but no swelling or any pathologic finding was evident. FCOD have an average size of 1.8cm with a range of 0.2-11cm (Singh, 2010). In the present case the lesion was in accordance with the presented averages. In general FCOD appear in radiograph as opaque or lucent/opaque images with poorly definable radiologic borders. But a quarter of them have definable outlines. The radiographic images change depending upon mineralization (Gumusok, 2014).

•**Well defined radiolucency-early stage-** rare to diagnose at this stage

•**Semi lucent no rim poorly defined mixed radiodensity-intermediate stage** – half of the cases- Ginger root pattern (Evelyn, 2011)

•**Mature radio opaque- late stage** – Cotton wool like appearance/irregular/ diffuse (Gumusok, 2014).

**Differential diagnosis based on radiographic features**

- **Osteolytic phase** – Periapical granuloma, Cyst and chronic osteomyelitis
- **Mixed and radio-opaque stages** – Chronic sclerosing osteomyelitis, Ossifying fibroma, Odontoma and Osteoblastoma (Gumusok, 2014). In the present case, differential diagnosis from odontoma was critical as expansion and cortical perforation were observed on CBCT images. Odontoma is a malformation, which seems to result from budding of extra odontogenic epithelial cells of the dental lamina. This cluster of cells form a large mass of tissues that may be deposited in an abnormal arrangement, but consists of enamel, dentin, cementum and pulp.<sup>9</sup>In 1946, Thoma and Goldman gave a classification which is as follows.
- **Geminated composite odontomes:** Two or more, more or less well-developed teeth fused together.
- **Compound composite odontomes:** Made up of more or less rudimentary teeth.
- **Complex composite odontomes:** Calcified structure bearing no great resemblance to the normal anatomical arrangement of dental tissues.
- **Dilated odontomes:** The crown or root part of tooth shows marked enlargement.
- **Cystic odontomes:** An odontome that is normally encapsulated by fibrous connective tissue in a cyst or in the wall of a cyst.<sup>9</sup>

According to World Health Organization (WHO) classification, odontomes can be divided into three groups.

- **Complex odontome:** When the calcified dental tissues are simply arranged in an irregular mass bearing no morphologic similarity to rudimentary teeth.
- **Compound odontome:** Composed of all odontogenic tissues in an orderly pattern, which result in many teeth-like structures, but without morphologic resemblance to normal teeth.
- **Ameloblastic fibro-odontome:** Consists of varying amounts of calcified dental tissue and dental papilla-like tissue, the later component resembling an ameloblastic fibroma. The ameloblastic fibroodontome is considered as an immature precursor of complex odontoma.

Reason for a provisional diagnosis of odontoma can be because of the presence of COD like features in an odontoma or a common developmental origin for both lesion (Georgios *et al.*, 2011). The final diagnosis was carried out based on histopathologic examination. FCOD do not require surgical intervention as they are benign and are of limited growth potential. Regular follow up is required as they may turn into Florid osseous dysplasia (advanced form of dysplasia) or simple bony cysts can develop within the FCOD areas. In the present study since it was symptomatic, surgical intervention was decided with the patient under regular follow up (Gumusok, 2014).

## Conclusion

Although FCOD is generally asymptomatic and non neoplastic, sometimes it can reach large sizes and cause discomfort, pain, expansion and/or perforation of the alveolar

bone. CBCT images are very useful in obtaining a detailed three dimensional radiographic features compared to conventional panoramic radiography. Care must be taken for differentiating FCOD, which is a reactive condition, from neoplastic and inflammatory conditions to prevent unnecessary surgical and/or endodontic treatments.

## REFERENCES

- Bahl R, Sandhu S, Gupta M. 2012. Benign Fibro- osseous lesions of the jaw. *Int Dent J student's Research*. 1(2) , 56-8.
- Branno, Robert B., Fowler, Craig B. 2001. Benign Fibro-osseous lesions: a review of current concepts. *Adv Anat Pathol*. 8(3), 126-43.
- Evelyn MP, Aaron RH. 2011. Focal osseous dysplasia. *Head and Neck Pathol*. 5, 265-67.
- Georgios IP, Konstantinos IT, Ioannis GK. 2011. Cemento-osseous dyaplasia like lesion and complex odontoma associated with an impacted third molar. *Head and Neck Pathol.*, 5, 401-04.
- Gumusok M et al. 2014. Focal cemento osseous dysplasia. *J Oral Maxillofac Radiol*. 2, 92-4.
- Noura AA, Ernest WNL. 2011. Osseous (Cemento-osseous) dysplasia of the jaws: clinical and radiographic analysis. *J Can Dent Ass*. 77, 1-8.
- Singh V., Dhasmana S., Mohammad S., Singh N. 2010. The odontome: report of five cases. *Natl J Maxillofac Surg.*, 1(2), 157-60.
- Srichinthu KK. et al. 2016. Fibro osseous lesions – classifications, pathophysiology and importance of radiology: a short review. *IntBiol Biomed J*. 2(1),11-20
- Su L., Weathers, DR., Waldrons, CA., Distinguishing feautes of focal cemento-osseous dysplasia and cemento ossifying fibromas: a clinical and radilogic spectrum of 316 cases. *Oral surd med oral pathol Endod*. 1997; 84 (5): 540-9

\*\*\*\*\*