Case Report

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A Unique Florid Cemento-osseous Dysplasia of Multi Quadrant Variant

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ABSTRACT

Background: The term florid cemento-osseous dysplasia (FCOD) is a type of fibro- osseous lesions. It refers to a group of fibro-osseous (cemental) lesions with one quadrant or may involve multi-quadrant.This lesion is usually asymptomatic and is incidentally detected during routine radiographic examination. The diagnosis is made by clinical and radiographic examinations, and biopsy is not necessary. Here we discuss a case of female having mild pain in jaw, while clinical radiographic evolution it was detected as fibro osseous dysplasia involving multi quadrant.

Keywords: Florid Cemento-osseous Dysplasia, multi Quadrant Variant, dentistry.

INTRODUCTION

"Benign fibro-osseous lesion" refers to a group of non- neoplastic conditions in which normal bone is replaced with a fibrous connective tissue matrix containing abnormal bone or cementum.[1]

Cemento-osseous dysplasia is a group of disorders known to originate from periodontal ligament tissues. The term florid cement-osseous dysplasia (FLCOD) was first proposed by Melrose et al in 1976 to describe a condition of exuberant multi quadrant masses of cementum and/or bone in both the jaws and in some cases, simple bone cavity like lesions in affected quadrant.[2] The word 'florid 'was introduced to describe the widespread, extensive manifestations of the disease in the jaws.[3] The term cemento-osseous dysplasia is a histopathological term, yet the diagnosis can be made by clinical and radiographic findings only.[4]

In 2005, The World Health Organization (WHO) workshop group on head and neck tumors classified osseous dysplasia into four subtypes based upon the extent and radiographic appearances -

1. Periapical OD/COD: dysplastic lesions occurring in the anterior mandible and involving only a few adjacent teeth.
2. 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).
3. Florid OD/COD and familial gigantiform cementoma: more extensive forms, occurring bilaterally in the mandible or in all jaw quadrants.[3]

The etiology of FLCOD remains unknown. Waldron et al.have proposed that reactive or dysplastic changes in the periodontal ligament might cause the disease.[4]

FLCOD lesions are usually asymptomatic and detected incidentally during routine radiographic examination.[2] The diagnosis of this lesion is based

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on clinical and radiographic examination, and biopsy is not necessary. [5]

Therefore, the role of the oral and maxillo-facial radiologist (RG) in the differential diagnosis is an important and essential one. This article reports the case detail of a 58-year-old woman presenting FLCOD of the complete maxilla and mandible. Discussion is presented with emphasis on CBCT findings of FLCOD.

CASE REPORT- a 58 years old female patient reported to clinic with chief complaint of sensitivity in both upper and lower arches since a month. The patient was responsive and well oriented as to time and place. Her vital signs were within normal limits. On extraoral examination, tenderness was noticed from left ramus to right ramus of the mandible and from right to left maxillary bone. On intraoral examination generalised submandibular lymph nodes were enlarged, palpable and tender bilaterally. The labial, buccal, palatal and lingual gingiva was firm, fibrotic, hyperplastic, non tender and had generalized pseudo-pockets and pain on percussion absent.

On CBCT scan- multiple hyperdense areas noted irt periapical region of 11, 12, 13, 14, 15, 16, 17, 21, 22, 23, 24, 25, 26, 27 surrounded by a hypodense area of varying width.Hyperdense areas have hyperdensity similar to cementum with smooth rounded borders and appears as multiple areas of conglomerates fusing together to form one.24,25,26 region hyperdensity surrounded by hypodense region has increased width about 3mm with buccal cortical plate expansion and uplifting of left maxillary sinus floor is seen with 26.Multiple hyperdense areas noted irt periapical region of 31,32,33,34,35,36,37,41,42,43,44,45,46,47 surrounded by hypodense area of varying width.46,47 have hyperdense region periapically irt 46,47 surrounded by hypodense area of increased width with expansion of buccal and lingual cortical plate. Hypodense area is noted to scallop between the teeth. Thinning of cortical plates is noted. Inferior displacement of mandibular canal is noted.

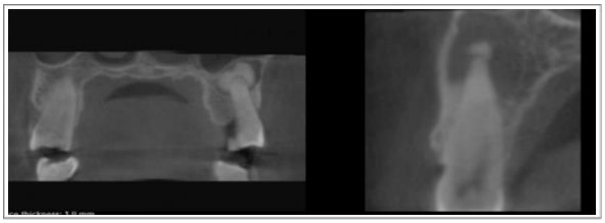

Fig 1: Showing images of maxilla with hypodense areas surrounding hyperdense areas and few cystic lesions.

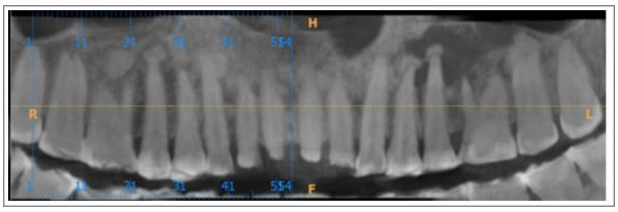

Fig 2: showing images of complete maxilla with hypodense areas surrounding hyperdense areas and few cystic lesions.

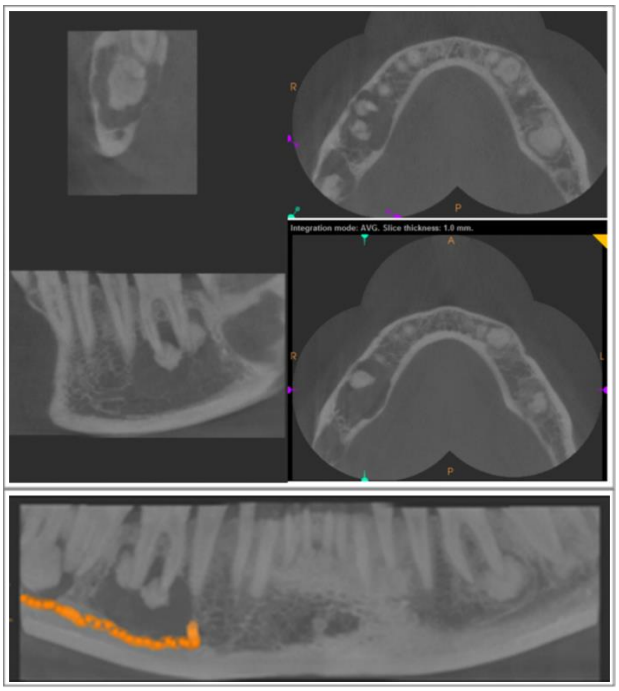

Fig: 3 showing images of mandible with hypodense areas surrounding hyperdense areas and few cystic lesions and expansion of mandible and thinning of cortical plate.

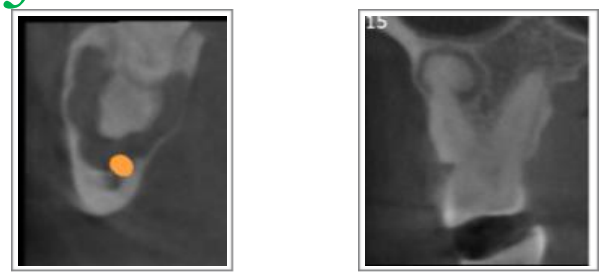

Fig: 4 a) showing images of mandible with inferior displacement of mandibular canal with thinning cortical plates, b) showing hypodense areas surrounding hyperdense areas in periapical areas and few cystic lesions and expansion of mabible and thinning of cortical plate.

DISCUSSION

Florid cementoosseuous dysplasia is a very widely used term in dentistry, it is challenging and confusing to detect. It is benign pathology, affecting one or all four quadrant of jaw. It daily affects women of asia and african origin age group of 40-50 years. The mean age for the female patients was 44.3 ± 13.4 years. nowadays it can affect people of any age and ethnic group.

These lesions are characterized by replacement of bone by connective tissue matrix. The matrix displays varying degrees of mineralization in the form of woven bone or cementum-like round basophilic acellular structures. The affected area undergoes changes from vascular bone into cementum-like lesion.[4]The patient must manifest the typical changes in at least two quadrants for the diagnosis of FLCOD. A four quadrant disease may be suggestive of a familial nature, they are more commonly in mandible but can involve whole arches.[5] OD/COD is usually confined to the tooth-bearing areas of the jaws or to edentulous alveolar processes.[4]

FCOD may be completely asymptomatic and found on routine radiographic examination, or may present with dull pain, alveolar sinus tract, and exposure of avascular bone into the oral cavity due to secondary infection.[7] Traumatic episodes of this calcified tissue cause retrograde infection and subsequent cellulitis, sequestration or even osteomyelitis. The hypovascular nature of the disease increases in severity when infection of the lesion occurs. In severe cases, mandibular nerve paresthesia and/or jaw expansion, albeit rare, may be found. Rarely are these lesions expansile[7]. Teeth in the involved bone are vital unless other dental disease coincidentally affects them.[1] Immature lesions are characterized by a dearth of calcified material, whereas more mature lesions are characterized by the development and coalescence of dense, globular masses of calcified material.[4]

Radiological aspects of FLORID COD -

Location.

FOD lesions usually are bilateral and present in both jaws. However, when they are present in only one jaw, the mandible is the more common location. The epicenter is apical to the teeth, within the alveolar process and usually posterior to the cuspid. In the mandible, lesions occur above the inferior alveolar canal. [9] they can invoke parts of maxilla or whole of maxilla.

Periphery.

The periphery usually is well defined and has a sclerotic border that can vary in width, very similar to POD. The soft tissue capsule may not be apparent in mature lesions. [9]

Internal Structure.

The density of the internal structure can vary from an radiolucent to equal mixture of radiolucent and radiopaque regions to almost complete radiopacity. Its mineralization increases with time and the same lesion may appear in various stages depending upon the degree of calcification. Immature FLCOD usually presents densely sclerotic lobular or irregular-shaped radiopacities with a radiolucent halo which separates the lesion from the surrounding bone. With maturation, FLCOD involves multiple sites throughout the jaw. Occasionally, a radiopaque lesion blends with the adjacent bone.

Some prominent radiolucent regions may be present, which usually represent the development of a simple bone cyst. These cysts may enlarge with time even beyond the boundary of the lesion into the surrounding normal bone or may fill in with abnormal dysplastic cemento-osseous tissue. The radiopaque regions can vary from small oval and circular regions (cotton-wool appearance) to large, irregular, amorphous areas of calcification. These

calcified masses are similar in appearance to those seen in mature POD lesions and represent amorphous bone. [9]

Effects on Surrounding Structures.

Large FOD lesions can displace the inferior alveolar nerve canal in an inferior direction. FOD also can displace the floor of the antrum in a superior direction and can cause enlargement of the alveolar bone by displacement of the buccal and lingual cortical plates. The roots of associated teeth may have a considerable amount of hypercementosis, which may fuse with the abnormal surrounding foci of amorphous bone in the lesion. Extraction of these teeth may be difficult. [9]

A solitary bone cyst (traumatic bone cavity) coexists in some FLCOD cases. A possible explanation for this occurrence may be that the fibro- osseous proliferation obstructs the interstitial fluid drainage, resulting in cystic degeneration within the FLCOD lesion. This collision phenomenon necessitates surgical exploration and histopathological examination to establish a definite diagnosis. In a patient without solitary bone cyst formation, the diagnosis of FLCOD is clinical or radiographic. Biopsy is not necessary. A patient must manifest the typical changes in at least two quadrants for a clinical diagnosis of FLCOD to be made.[1]

New technologies help the dentist to use the CBCT with the appropriate field of view and spatial resolution; therefore, the internal mineralized structure of the pathologic lesions can be investigated with a low radiation dose.[10]

In many COD cases that have been misdiagnosed and/or mismanaged, the lesions were identified in their early stages as a periapical rarefying osteitis such as periapical abscess, granuloma, or cyst, and unnecessary endodontic treatment was performed. Therefore, vitality tests are especially important for differential diagnosis.[1]

In the radiolucent-radiopaque mixed stage and the radiopaque stage, the differential diagnosis might include chronic sclerosing osteomyelitis, cementoossifying fibroma, odontoma, cementoblastoma, and osteoblastoma.[9]

By using CBCT discrimination of PCOD from these lesions that exhibit similar internal calcification on conventional radiography, would be more accurate. High density mass in PCOD which is centred in low density area is different from findings of calcifying cystic odontogenic tumour in which calcification is observed at or near the cyst wall.[11]

CT scan shows the presence of mixed-density, expansile lesion with areas of sclerosis and ground-glass can be seen. involve any part of the mandible or maxilla, sometimes attenuation. The lesion consisted of dense lobulated masses with indistinct radiolucent borders. Systemic skeletal radiographs indicated that the lesions were limited to jaw.[12]

The plain computed tomography scan of maxilla and mandible, showed bilateral multiple hyperdense areas in the premolar and molar regions. Multiple lobulated calcified masses were symmetrically distributed in the posterior segment of maxilla and mandible.

CBCT findings are Large expansile masses with varying degrees of radiopacity, Opaque areas continuous with root apices, Roots may have hypercementosis, Cemental tissue of lesion may fuse with hypercementosis

DIFFERENTIAL DIAGNOSIS

Periapical Cemental Dysplasia (PCD)- localized form of FCOD, PCD lesions smaller (< 1 cm) and not expansile, Usually anterior mandible in association with vital incisor teeth, Same demographics as FCOD, Females > males, 4th and 5th decades, More common in blacks and Asians others are,

Paget Disease-Systemic bone disease Affects all bones, especially skull, Affects entire mandible or maxilla; FCOD affects only tooth-bearing areas, Typically described as “cotton wool” radiographic appearance, More common in white men in 5th or 6th decade, Increased serum alkaline phosphatase. Osteomyelitis-Inflammation of bone marrow, Sequestra are hallmark, Cemental masses of FCOD may resemble sequestra, Wider radiolucent border in infected

FCOD- Patient is often symptomatic: Febrile, lymphadenopathy, sinus tracts Fibrous, Nonneoplastic condition of bone with formation of dysplastic bone in fibrous connective tissue, Young

females, Unilateral expansion,FCOD is bilateral in an older patient

Fibrous dysplasia borders blend with surrounding bone, and internal structure is granular and often described radiographically as "ground glass" .[13]

CONFLICTS OF INTEREST

The authors declare they have no potential conflict of interests regarding this article.

REFERENCES

1 White S, Pharoah M. Oral radiology: principles and interpretation. 6th ed. St. Louis, MO: Mosby Inc.; 2009.

2. Mangala M., Ramesh DN, Surekha PS, Santosh P. Florid cemento- osseous dysplasia : Review and report of two cases; IJDR 2006, volume 17, issue 3, page 131-134.

3. Barnes L, Eveson JW, Reichart P, Sidransky D, editor. World Health Organization Classification of Tumours. Pathology and Genetics of Head and Neck Tumours. Lyon: IARC Press, 2005.

4. Waldron CA. Fibro-osseous lesions of the jaw. J Oral Maxillofac Surg 1993; 51: 828-835.

5 Mupparapu M., Singer S., Milles M., Rinaggio J. Simultaneous presentation of focal cemento-osseous dysplasia and simple bone cyst of the mandible masquerading as a multilocular radiolucency; Dentomaxillofacial Radiology. 2005; 34: 39-43.

6. Melrose RJ, Abrams AM, Mills BG. Florid osseous dysplasia: a clinical-pathologic study of thirty-four cases. Oral Surgery, Oral Medicine, Oral Pathology. 1976 Jan 1;41(1):62-82.

7. Neville BW, Damm DD, Allen CM, Bouquot JE. Oral and maxillo- facial pathology, 3rd ed. Philadelphia: Saunders, 2009:613e77, 701e40.

8. Pitak-Arnnop P., Dhanuthai K., Chaine A., Bertrand J., Bertolus C. Florid osseous dysplasia: Report of a case presenting acute cellulitis; Med Oral Pathol Oral Cir Bucal. 2009 Sep 1;14 (9):e461-4.

9 Alsufyani NA, Lam EW. Osseous (cemento-osseous) dysplasia of the jaws: clinical and radiographic analysis. J Can Dent Assoc. 2011;77:b70.

10. Macdonald-Jankowski DS. Focal cemento-osseous dysplasia: a systematic review. Dentomaxillofac Radiol. 2008;37:350–360.

11. Ariji Y, Ariji E, Higuchi Y, Kubo S, Nakayama E, Kanda S. Florid cemento-osseous dysplasia. Radiographic study with special emphasis on computed tomography. Oral Surg Oral Med Oral Pathol. 1994;78:391–396.

12. Bansal S, Shetty S, Bablani D, Kulkarni S, Kumar V, Desai R. Florid osseous dysplasia. Journal of Oral and Maxillofacial Pathology: JOMFP. 2011 May;15(2):197.

13. Koenig LJ. Diagnostic Imaging: Oral andMaxillofacial. 2nd ed.. Philadelphia, PA: Elsevier.

14. Braz. J. Oral Sci. vol.11 no.4 Piracicaba Out./Dez. 2012 CASE REPORT Florid cement-osseous dysplasia of maxilla and mandible: a rare clinical case Chandramani B. MoreI; Rajan ShirolkarII; Chhaya AdaljaII; Mansi N Tailor.