Florid Cemento-osseous Dysplasia

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Florid cemento-osseous dysplasia is a condition of the bone which is rare and usually affects jaw bones. It is classified as sclerosing osteitis, multiple exostoses, diffuse chronic osteomyelitis, and gigantiform cementoma. The age group varies from 19 to 76 years and mostly presents in the fourth and fifth decade. Most commonly affects middle-aged women. It is identified on radiographic examination and manifested as diffuse irregularly shaped radiopacities in the alveolar processes. It usually presents as a bilaterally symmetrical lesion. This lesion is benign and requires treatment only if symptomatic or for cosmetic reasons. We report a case of an uncomplicated florid cemento-osseous dysplasia in a 35-year-old woman the diagnosis of our case was made radiographically.

Keywords: Cemento-ossifying fibroma, Florid cemento-osseous dysplasia, Fibro-osseous lesions

INTRODUCTION

Fibro-osseous lesion is a group of jaw disorders characterized by replacement of bone by benign connective tissue matrix. This matrix consists of mineralization in the form of woven bone or of cementum-like round structures which are acellular. The peculiar radiographical appearance plays an important role in the diagnosis of these lesions. The pathology of all fibro-osseous lesions is identical, although their behavior shows a wide range from dysplasia to benign neoplasia. A radiologist plays central role in diagnostic process, and hence, knowledge of variant appearance of these lesions is very important.

With complete clinical and radiological information, most lesions can be assigned into one of the categories of these lesions (Figure 1). Radiological assessment will reveal the anatomical location, shape, and size, margins of the lesion, and also the pattern of matrix and its destruction. Thus, the aggressive or benign behavior can be identified by correlating this findings.

Review of the literature shows a wide range of terminologies that were used by various authors to describe lesions which showed similar radiographic appearances. The classification of cementomatous lesions, released in 1992 by the World Health Organization, is based on age, sex, and histopathologic, radiographic, and clinical characteristics, as well as the location of the lesion and is widely being used and accepted. This classification includes cemento-ossifying fibroma, benign cementoblastoma, and the cemento-osseous dysplasia group, in which periapical cemental dysplasia and florid cemento-osseous dysplasia have been included.

CASE REPORT

A female patient, aged 35 years, reported to the department with the complaint of swelling in the upper right and left back jaw region gums since 15 days. Extraoral examination revealed no abnormalities other than for the presence of a lipoma on the forehead since 15-20 years. Intraoral examination revealed generalized marginal and papillary gingival inflammation. Swelling included marginal, papillary, and attached gingiva, in relation with 14, 15, 16, 17, 24, 25, 26, and 27 (Figure 2a-d). Vitality test showed all teeth were vital.

After intraoral examination, the radiographic examination was done. Periapical and panoramic radiographs were taken.

Periapical Radiographs

1. Intraoral periapical (IOPA) (Figure 3a) of the lower right posterior region shows: Diffuse radiopacity was seen surrounding the periapical region of 45, 46, and 47, which is surrounded by a thin radiolucent line. The vertical bone loss is seen be with interdental bone of 45, 46, and 47.
2. IOPA (Figure 3b) of the lower left posterior region shows multiple radiopaque masses with 35, 36, and 37. The masses are irregular shaped and surrounded by radiolucent thin lining. The vertical interdental bone loss is seen with 35, 36, and 37.

3. IOPA (Figure 3c) of the upper right posterior region shows diffuse radiopacity in periapical region of 16 and 17.

After intraoral radiography, panoramic radiograph was taken.

**Panoramic Radiograph (Figure 4)**
All the findings of periapical radiography were confirmed on the panoramic radiograph.

Multiple radiopaque masses were seen bilaterally in tooth-bearing areas of posterior mandible, and in right posterior maxilla in relation to premolar and molar regions. Irregularly shaped radiopacities are seen distributed diffusely throughout the alveolar process within a poorly defined zone of reduced radiodensity. The borders of the lesion show a radiolucent lining.

Further, a cone beam computed tomography was taken to get a clear picture about extend of the lesion (Figure 5a-f).

No marked expansion of mandible and maxilla was seen.

In the right mandibular posterior region, radiopaque lesion seen in relation with 45, 46, and 47. Anteroposterior width 21.17 mm, height of 11.86 mm. Lesion extends in between cortical plates, the lateral width 9.44 mm.

In left mandibular posterior region, multiple radiopaque masses can be seen in relation with 35 and 36. Lateral width between cortical plates is 5.08 mm.

In maxillary left quadrant, the periapical cyst can be seen in relation with 23.

In maxillary right quadrant, the radiopaque lesion is seen in relation with 16, of 3.13 mm length and 2.99 mm height.

**Laboratory Findings**
Blood reports showed that she was anemic, hemoglobin being 6 mm of Hg, and alkaline phosphatase levels were within normal range.
Based on clinical examination and radiographic evaluation, a diagnosis of florid cemento-osseous dysplasia of mixed stage was made.

**DISCUSSION**

Florid cemento-osseous dysplasia was first described by Melrose et al. in 1976. It was described as a dysplastic lesion or developmental anomaly arising in tooth-bearing areas. Cemento-osseous dysplasias are a group of disorders which originate from periodontal ligament tissues and involve the same pathological process. Florid cemento-osseous dysplasia has shown a familial trend in few cases and is more commonly seen in middle-aged black women and also shown occurrence in Caucasians and Asians.\(^4\)

Depending on their extent and radiographic appearances, they are classified into three main groups: Periapical (surrounds the periapical region of teeth and are bilateral), florid (Sclerotic symmetrical masses), and focal (single lesion) cemental dysplasias.\(^4,5\)

Florid cemento-osseous dysplasia clearly appears as a form of bone and cemental dysplasia that involves jaw bones. These lesions have a bilateral presentation mostly seen in all four quadrants of the jaws. The radiographic appearance varies as areas of radiolucency to mixed lesions and to opaque masses. Early lesions appear as radiolucent or mixed lesions and late lesions become more radiopaque and may blend with adjacent bone, and therefore, pathologists often receive multiple curetted fragments. Florid cemento-osseous dysplasia is occasionally expansile.\(^6\)

**Differential Diagnosis**

**Paget’s disease**

Paget’s disease appears as sclerotic lesions on radiographs which is quite similar to other fibro-osseous lesions. It may show a cotton wool-like appearance. However, this condition affects the bone of the entire mandible and shows loss of lamina dura, whereas florid cemento-osseous dysplasia affected region is above the inferior alveolar canal, and its cervical two-thirds are normal. Paget’s disease is often affects multiple bones and involving other bones such as spine, femur, skull, pelvis, and sternum. It also shows biochemical serum changes such as elevated alkaline phosphate levels.\(^2,7\)

**Chronic diffuse sclerosing osteomyelitis**

Chronic diffuse sclerosing osteomyelitis shows appearance similar to florid cemento-osseous dysplasia. Chronic diffuse sclerosing osteomyelitis appears as a single, poorly delineated opaque segment of the mandible, whereas florid cemento-osseous dysplasia is seen as multiple round or lobulated opaque masses. Chronic diffuse sclerosing osteomyelitis involves the body of the mandible from alveolus to the inferior border and may extend into the ramus.\(^8,9\)

**Fibrous dysplasia**

Fibrous dysplasia shows appearance similar to florid cemento-osseous dysplasia. It shows alteration of the lamina dura and abnormal bone pattern. Narrowing of the periodontal ligament space is primary distinguishing features for fibrous dysplasia. These phenomena may show a “field effect” of abnormal osseous development in the congenitally predisposed bone matrix. This may result in the fusiform (spindle-shaped) expansion of the affected bone. Fibrous dysplasia commonly shows an abnormal opacification, which ranges from the very numerous, small, and diffusely distributed opacities which have been described as “ground glass” and “peau d’orange” and sclerosis classically described as “cotton-wool.”\(^3,10\)

**Cemento-ossifying fibroma**

Ossifying fibroma and cementifying fibroma are now considered to be the two extremes of the same
spectrum; because both frequently contain both bone and cementum-like tissue; these lesions are now called Cemento-ossifying fibromas. These lesions grow slowly and most lesions once excised do not recur but may show rapid growth. The radiographic appearance is well-defined round or oval shaped lesion, and it may display erosions and invasion of adjacent bone.3,10

The majority of lesions that appear prominently in the differential diagnosis of florid cemento-osseous dysplasia are radiopacities occurring in the jaw bones; these are the idiopathic osteosclerosis, condensing osteitis (secondary to dental inflammation) and odontomas.

Four important aspects of the radiopacities can be considered sequentially. These are:
1. Are there multiple or single (solitary or focal) radiopacities?
2. Is the radiopacity/s well-defined?
3. Is the radiopacity/s sited above the mandibular canal?
4. Is the radiopacity/s surrounded by a radiolucent space?

Florid cemento-osseous dysplasia consists of self-limiting lesions involving alveolar processes. It is an exuberant variant of cemento-osseous dysplasia normally seen in multiple quadrants of the jaws.3

Management of florid cemento-osseous dysplasia is required only in symptomatic patients in most situations the lesion is not treated. In the asymptomatic patient, the management consists of regular recall examination with prophylaxis and maintenance of good oral hygiene. A few cases may be symptomatic; there may be pain alone or in association with sinus tracks with purulent drainage. Treatment is required when infection of the lesion occurs; extensive surgical resection and saucerization are proposed treatment options when lesions become extensive and symptomatic. Complete resection of the lesion is not possible because the lesion occupies most of the mandible and maxilla. After surgical intervention, a remodeling resection is required for esthetic reasons.11

CONCLUSION

Many lesions that occur in the jaw have a similar radiographical appearance, and it is often difficult to differentiate among them. Diagnosis of a large, florid osseous lesion is unlikely to challenge the specialist radiologist; difficulty is more likely to arise with smaller lesions. Differential diagnosis is difficult when there are coincidental findings such as odontogenic infections or chronic diffuse osteomyelitis, neoplasia, bone dysplasia that can cause changes in the mandible with similar radiographic characteristics, so a good knowledge of all the diseases is essential. Furthermore, to get the accurate diagnosis, we must consider all the available diagnostic information, the radiographic characteristics which would contribute to the diagnosis. The purpose of a clinical classification should not be mere taxonomy, and it should assist the clinician to achieve a diagnosis that may be helpful to decide an appropriate treatment plan.

REFERENCES


How to cite this article: Kunjir G, Kumar RK, Uppalwar P. Florid Cemento-osseous Dysplasia. IJSS Case Reports & Reviews 2016;2(10):16-19.

Source of Support: Nil, Conflict of Interest: None declared.