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OSSIFYING FIBROUS-EPULIS OF ANTERIOR MANDIBLE- A CASE REPORT

Dentistry

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ABSTRACT

Cemento-ossifying fibroma (COF) is recognized as a type of fibro-osseous lesion that affects the jaw bones. Typically, it manifests as a progressively enlarging mass that, if left untreated, can lead to significant deformity due to its potential to grow to a considerable size. Case of a 51-year-old female patient, COF was observed in the right mandible. This case study presents the clinical, radiographic and histological features, along with surgical findings.

KEYWORDS

Mandible, Cementoossifying Fibroma, Fibroosseous Lesions, Epulis

INTRODUCTION:

Fibro-osseous lesions of bone have evolved into two major entities: fibrous dysplasia and ossifying fibroma. The others category included less common lesions such as florid osseous dysplasia, periapical dysplasia and focal sclerosing osteomyelitis as classified by Waldron [1] and Kramer et al [2]. Kramer described them as well demarcated or rarely as encapsulated neoplasms, consisting of fibrous tissue containing varying amounts of mineralized material resembling bone and/or cementum. [2] 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 the neck region and principally seen in the jaws with a predilection towards mandible and are slowly progressing. [3,4]

In 1872, Menzel first described cemento ossifying fibroma as a long standing swelling of mandible in a 35-year-old women which was benign fibro osseous in nature [5]. Later in 1932 the World Health Organization (WHO) revised the nomenclature of cementifying fibroma and ossifying fibroma as a single entity of "cemento-ossifying fibroma". [6] Larger lesions with size over 80 mm in their greatest diameter have been termed as 'giant ossifying fibroma'. [7,8] Radiologically, cemento-ossifying fibroma shows a number of patterns depending on the degree of mineralization of the lesion. The latter manifests as a well delimited unilocular lesion containing variable amounts of radio-opaque material. [2-4]

Case Report

A 51-year-old female patient reported to the department of periodontology with chief complaint of swelling on the lower right anterior jaw since 2 years which gradually increased in size in due course of time. Patient had history of fall 30 years ago, later a small pea sized swelling appeared for which she did not seek any treatment at that time. On the same swelling 2 years back she had a tooth brush trauma and stopped using brush for cleaning her teeth. Gradually the swelling increased to present size of 18 x 16 mm.[figure1a]

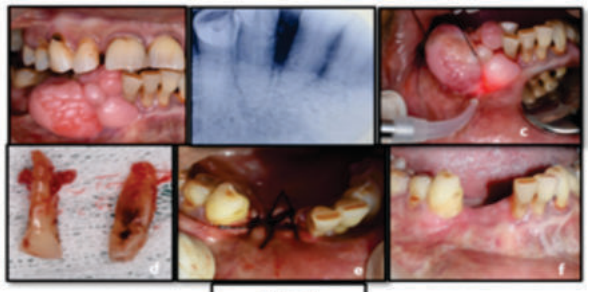

Figure 1

Intra orally the swelling was painless, multinodular in nature with well-defined margins extending from gingival sulcus to incisal one thirds of four teeth in the right lower front tooth region from 41 to 44. Swelling was hard in consistency, pedunculated, also associated with mobility and pathological migration of 41 and 42.

Routine blood examination was done and showed Hb:9.6 gm%; TLC: 12900/mm; DLC: neutrophils 52%, lymphocytes 36%, eosinophils 5%, and basophils 0% and Monocytes 7%. The erythrocyte sedimentation rate was 24 mm at 1 h, bleeding time was 2.55 min, clotting time 6.35 min and INR 1. The Blood Sugar levels were found to be 267mg/Dl on fasting and PP 421 mg/dL. The patient was referred to a physician and conservatively managed till the clearance was obtained for excision.

IOPA [Figure 1b] was taken which revealed displaced mandibular incisors on right side with horizontal bone loss almost till the junction of apical and middle third of roots.

Management

Excisional biopsy of the lesion was carried out [Figure 1c] using 980 nm diode laser under local anaesthesia along with the extraction of 41 and 42 [Figure 1d], followed by primary closure of the wound with 3-0 silk sutures [Figures 1e]. The excised tissue was sent to the pathology department for histopathological examination. Post op healing was uneventful and sutures were removed after seven days. The patient was recalled after 15 days and examination revealed complete regression of the lesion [Figure 1f] restoring the normal architecture of residual ridge.

Histopathological Examination

Histopathological examination showed [Figure 2a] stratified squamous epithelium with pseudoepitheliomatous hyperplasia. The subepithelium showed fibrosis and varying size lobules of chondroosseous matrix with evidence of chondral ossification forming haphazardly arranged trabeculae of woven bone and cementum like material. Adjoining areas showed mild lymphomononuclear inflammatory infiltrate [Figure 2b].

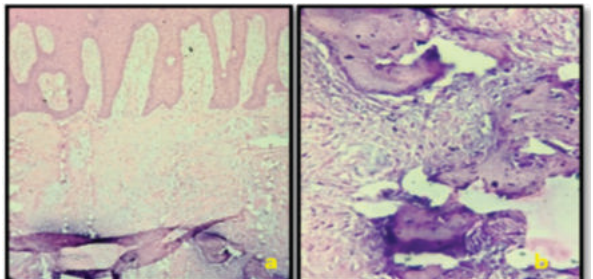

Figure 2

DISCUSSION

Fibroosseous lesions of jaw include fibrous dysplasia, ossifying fibroma, cemento-ossifying fibroma, and cementifiying flbroma [9]. In fibrous dysplasia, an close continuity in the lesion and normal bone is usually maintained. The lesion enlarges all through its length with diffuse and ill-defined boundaries radiographically. The radiological structure of fibrous dysplasia is more consistent than that of ossifying fibroma or cementoossifying fibroma, both are often filled with foci that is radiopaque.

Cemento-ossifying fibroma is a well-circumscribed tumor that grows slowly with margins that are clearly defined. Lesions may present as oval, spherical, or multilocular and clearly separated from the surrounding bone by osteolytic borders. [10] Central cemento-ossifying fibromas are characteristically well-defined by solitary radiolucencies and scattered radiopaque foci. The lesions retain a spherical shape, expand cortical bone but don't cause perforation, and may present with tooth divergence. [11] The roentgenographic appearance of the neoplasm is variable, depending upon its stage of development. When compared to true fibrous dysplasia, the lesion is always well circumscribed and well demarcated from surrounding bone. However, a centrifugal growth pattern is seen in the central ossifying fibroma and central cemento-ossifying fibroma in contrast to central cementifying fibroma and its related lesions. Fibrous dysplasia results in linear expansion of the cortex and loss in continuity with the remaining outline of the lesion.

Peripheral giant cell granuloma clinically presents alike the cemento-ossifying fibroma, as pedunculated or sessile masses mostly anterior to the molars. However, peripheral giant cell granuloma may be differentiated on the criteria of the size of the lesion (0.5-1.5 cm), attachment which is mostly pedunculated, and on histopathological examination with the occurrence of peripheral cuffing and giant cells. The pathognomic radiographic feature is peripheral cuffing that presents due to superficial erosion of the bone. Calcifying epithelial odontogenic tumor, though clinically similar, has the common site of occurrence in the molar area with close association to an unerupted or impacted tooth, whereas the cemento ossifying fibroma is generally seen anterior to the molars. Initial radiographic features of both the lesions are common (both being radiolucent) but as the lesion progresses it takes on a "honeycomb' or driven snow appearance. Histologically differentiated by the presence of polyhedral epithelial cells as well as multinucleated giant cell in Calcifying epithelial odeontogenic tumor.

Reed [12] in his histopathological studies differentiated the cemento-ossifying fibroma from the other fibro-osseous lesions by the presence or absence of woven and lamellar bone. In uncomplicated cases, fibrous dysplasia has arrested woven bone without lamellar bone. On the other hand, cemento-ossifying fibroma and ossifying fibroma contain woven bone and are often bordered by osteoblasts that have laid down layers of lamellar bone. Additionally, cemento-ossifying fibroma might have areas of cementum, appearing as Psammoma bodies embedded in a benign fibrous stroma. Spiet et al. [13] supported Reed's classification and stated that the predominant pattern of bone architecture is usually apparent and allows one to differentiate between the two types of lesions.

The term central cemento - ossifying fibroma is also used, as these tumors can display spectrum of fibroosseous lesions, ranging from those with only deposition of cementum to those with only deposition of bone, and arising from the periodontal ligament. [13] These lesions are slow-growing, and are most often seen in women of varying age group. While one-half of all cases being asymptomatic, the growth of the tumor over time may lead to facial asymmetry; the mass causing discomfort or mandibular expansion, and the possible displacement of dental roots. [14] Although the underlying exact cause is not known yet, majority of the cases in in literature have been found to have a history of trauma in the area of the lesion. [15] In accordance with the data found in the literature, this patient also reported to have suffered from trauma in the affected area years ago.

CONCLUSION

Cemento ossifying fibroma may be encountered with varied clinical and histopathological features. These lesions should be differentiated from other pathologies bearing in mind the histopathological, radiological, and clinical features together. The recommended treatment of the cemento-ossifying fibroma is excision considering the clinical behaviour of central ossifying fibroma and also a long-term follow-up is mandatory because recurrences can develop for up to 10 years after treatment..

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