CASE REPORT

Central ossifying fibroma—A unique case report

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Abstract

Ossifying fibroma is an osseous neoplasm occurring mainly in younger individuals with a predisposition for mandible and females are mainly affected. The tumor is not symptomatic until the expansion produces an observable swelling and little impairment. Depending on the stage of development it presents an exceedingly variable roentgenographic appearance. This neoplasm is comprised mainly of greater amount of intertwining collagen fibers, rarely organized in discrete bundles, intermixed with large amount of proliferating fibroblasts. The tumor should be removed conservatively.

Keywords:
Fibro-osseous, maxilla, ossifying fibroma

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Introduction

Central ossifying fibroma (Central OF) is a benign osseous tumor made up of remarkably cellular and fibrous tissue with wavering amount of calcified tissue, which appears such as bone, cementum, or both.[1] It is thought that Central OF is derived from periodontal membrane.[2] Patients of the third and fourth decade are mostly affected, and it usually shows a female domination.[3] Mandible is greatly affected than maxilla, and very few case reports are there in the literature. Mandibular posterior area is the common site to get involved. Small lesions rarely cause any symptoms and only detected on radiographic examination whereas larger tumors present painless swelling of the involved bone; causing obvious facial asymmetry.[4] Central OF is treated by conservative surgical excision through the use of curettage, enucleation, or excision and has a good prognosis.[5]

Case Report

A 16-year-old female patient reported to the Outpatient Department of Manubhai Patel Dental College and Hospital and Oral Research Institute. The patient had complaint of swelling on the right side of the upper vestibule, which progressively increased in size within 6 months. The patient had no other medical history. On examination, on the right side of the maxillary vestibule, an intraoral swelling was present extending from maxillary lateral incisor to first premolar antero-posteriorly. It was 7.0 cm × 5.0 cm in size and ovoid in shape. The teeth associated with the lesion were free of any carious lesion and periodontal problems. No facial asymmetry was present. On inspection of the lesion, the overlying skin was normal. The swelling was firm and non-tender on palpation [Figure 1]. Regional lymph nodes on the right side were nonpalpable and non-tender. Hematological investigations were within the normal limits.

Intraoral Periapical Radiograph showed diffuse radiolucency in relation to maxillary canine and premolars. Occlusal radiograph showed radiolucency involving apical regions of maxillary right central incisor to canine region [Figure 2a and b]. Orthopantogram showed diffuse radiolucency involving distal surface of root of maxillary right lateral incisor to mesial surface of the root of second premolar [Figure 3]. A wide excision of lesion was done under local anesthesia with vasoconstrictor. Excised specimen was received for histopathological examination. On gross examination, the specimen was not encapsulated and was received in the form of bits. The consistency was firm and the surface was rough. The cut surface was smooth and homogenous [Figure 4a and b].

Histopathologically, the lesion showed dense connective tissue stroma, which contained areas of immature bone formation and cementum-like tissue. The stroma was highly cellular with numerous plump fibroblasts in the background of haphazardly arranged collagen fibers. Thus, the diagnosis of COF was given [Figures 5 and 6].
Discussion

Recently, the World Health Organization in the classification of odontogenic tumors has replaced the previous edition’s “cemento-OF” (COF) with “OF.” Brannon and Fowler initiated to use the terminology of OF instead of COF, and it was continued by Reichart and Philipsen. Fibro-osseous lesions of head and neck are rare and occur because of the introduction of fibrous tissue in the normal bone replacing the osseous tissue, which mineralize in different structures such as woven bone, lamellar bone, or cementum, and comprise an extensive spectrum of specific entities with unique clinical appearance and histopathological features.

Differential diagnosis of Central OF leans on the roentgenographic features of the lesion. COF with a completely radiolucent lesion may be misinterpreted as an early stage of cemento-osseous dysplasia, odontogenic cyst, periapical granuloma, traumatic bone cyst, ameloblastoma, or central giant cell granuloma.

Figure 1: Intraoral swelling of right maxilla

Figure 2: (a) Intraoral periapical radiograph of the involved region. (b) Occlusal radiograph of the maxillary arch

Figure 3: Orthopantomogram showing ill-defined radiolucency distal to canine

Figure 4: (a) Grossing of the specimen showing multiple bits of tissue. (b) Largest bit cut into slices showing smooth and homogenous inner surface

Figure 5: Histopathology of the lesion showing immature bone formation and cementum like tissue (H & E stain - ×40)

Figure 6: Loose connective tissue stroma showing immature bone

COF with mixed roentgenographic features may get misdiagnosed as a calcifying odontogenic cyst (Gorlin cyst) or an adenomatoid odontogenic tumor. Moreover, COF with completely radiopaque roentgenographic features may be misinterpreted as retained root, odontoma, idiopathic osteosclerosis, condensing osteitis, late stage of cemento-osseous dysplasia, or osteoblastoma. COF with a greater content may be misinterpreted as an osteogenic sarcoma. Radiographically, early lesions may show radiolucency, but as they mature, they become a mixed radiolucent and radiopaque lesion and ultimately become radiopaque.

Histopathologically, the lesion is composed mainly of a greater amount of fine interlacing collagen fibers, rarely arranged in discrete bundles. These fibers are intermixed with many active, proliferating fibroblasts. Although mitotic figures may be present in less numbers, rarely any noticeable cellular pleomorphism is observed. The stroma indistinctively shows many small foci of irregular bony trabeculae which may carry some resemblance to the bizarre Chinese-character pattern of the bony trabeculae in fibrous dysplasia of bone.

Many authors advocate complete excision of the lesion at the earliest. Eversole et al. reported a recurrence rate of 28% following curettage. Hence, the follow-up of the patients for longer duration is advised.

References
