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Case Report

Cemento-ossifying Fibroma

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Abstract:
Cemento-ossifying fibromas are rare fibro-osseous benign neoplasms that affect the jaws. They are included in the group of mesodermal odontogenic tumors and commonly present as aprogressively growing lesion that might attain enormous size with resultant deformity, if left untreated. A case of cemento-ossifying fibroma involving the left mandibular region of 10-year-old male patient. The clinical, radiographic, histologic features are presented and the various differential diagnosis are discussed. Cemento-ossifying fibroma (COF) is a distinct form of a benign fibro-osseous tumor, affecting predominantly the craniofacial region. Cemento-ossifying fibroma was initially classified by the World Health Organization (WHO) as a fibro-osseous neoplasm in 1992. However, they do not arise in the long bones, and occur mostly in the tooth- bearing areas of the jaws. Their resemblance to ossifying fibroma and cemento-osseous dysplasias give evidence for an odontogenic origin. They are derived from the mesenchymal blast cells of the periodontal ligament and have a potential to form fibrous tissue, cement and bone or a combination of such elements.

Keywords: Cementifying Fibroma, Fibro-Osseous Tumor, Neoplasm.

Introduction

The fibro-osseous lesions of bone comprise a heterogeneous group of disorders that include developmental, neoplastic, or reactive (dysplastic) lesions characterized by the replacement of normal bone by fibrous tissue that acquires mineralization. They encompass two major lesions fibrous dysplasia and ossifying fibroma [ko4]. Fibro-osseous lesions of the jaws have been classified by Waldron[1] and Kramer et al.[2] In the nomenclature by Kramer et al.[2] the cemento- ossifying fibroma is described as an osteogenic neoplasm, and the fibrous dysplasia has been described as a non-neoplastic bone lesion. The cemento-ossifying fibromas has been described as well demarcated or rarely encapsulated neoplasms, consisting of fibrous tissue containing varying amounts of mineralized material resembling bone and/or cementum.[2] The recurrence of these benign tumors following surgery is considered rare. However, Eversole and his co-workers in a study of 64 cases of cemento-ossifying fibroma reported a recurrence rate of as high as 28 per cent following surgical curettage of these lesions.[2] Recurrence of COF is occasional the follow-up of this case after eight months shows differences in the radiographic pattern suggestive of other fibro-osseous lesions.[4]

Case Report

10year old male child reported to department of dentistry with painless swelling with respect to lower left bod of mandible, expansion of buccal cortical plate was noted extending from lower left lateral incisor to lower left first molar region, no evidence of tooth mobility noted, no evidence of pus discharge seen.

On examination

On palpation, a bony hard consistency of the swelling was elicited, with no evident tenderness or increase in temperature. Expansion of the buccal cortical plate was evident. Intraorally, the swelling was observed in the lower buccal vestibule leading to obliteration of the mucobuccal fold with respect to lower left (32-37) and measured approximately 3cm x 4cm in size. No toothmobility.

Investigation

All blood investigation including CT scans were done. Incisional biopsy was taken to confirm- ossifying fibroma.

Surgical Management

Based on the provisional diagnosis and the extent of the lesion, it was decided to undergo surgical excision under general anesthesia, realising incision was made. The mucoperiosteal flap was raised the mass was excised in tattoo (Figure 2) and sent for

histopathological examination. Sharp bony margins were smoothened with round bur and bone augmentation (DFDBA large graunules and chorionic membrane was placed)and primary closure was done with 3.0 vicryl sutures

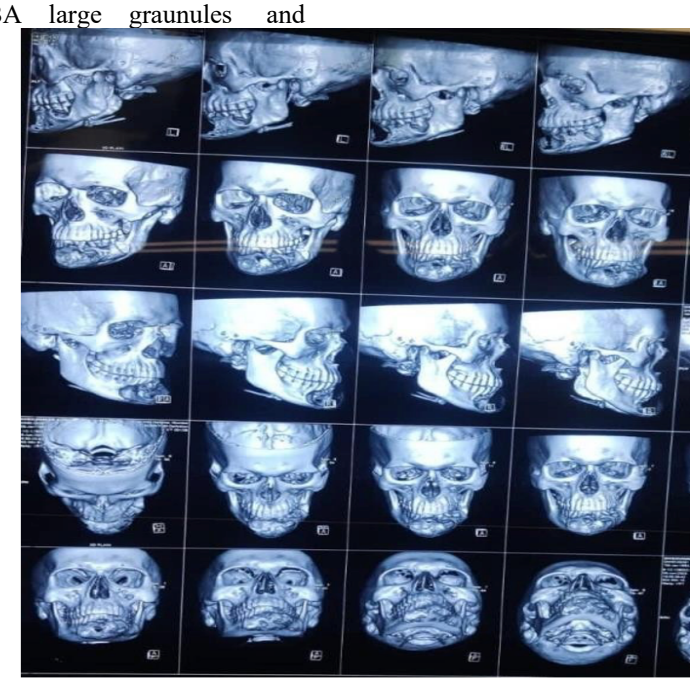

Figure 1: CT scan showing expansion showing extent of the lesion.

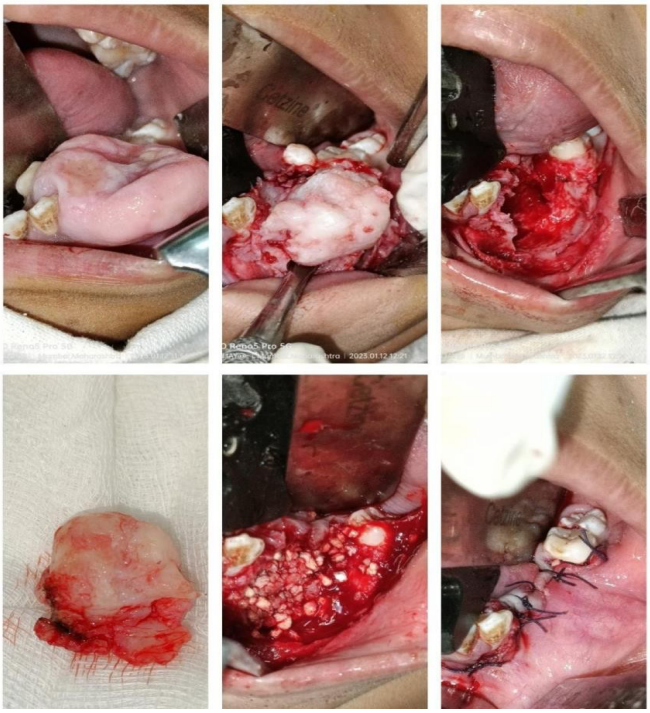

Figure 2: Intra-operative picture . Represents the intra-operative picture of exposure ofcemento- ossifying fibroma and excision of cemento-ossifying fibroma .

Discussion

Cemento-ossifying fibroma is a benign osteogenic tumor with membranous ossification. It therefore involves exclusively the maxillofacial bones [1], [2]. It comprises fibrous tissue containing a variable quantity of mineralized material resembling bone and/or cement, whence the term "cemento-ossifying". The pathogenesis remains unknown: it may be related to congenital problems in maturation of dental tissue, which is able to form cement and bone tissue [3].

It generally occurs between the second and fourth decade, with a 1:5 male:female ratio. The most frequent location is mandibular (75%), involving the

premolar and molar region. The facialsinuses and the nasal cavities are rarer locations [3]. It is revealed by slow-growing, progressive, and painless bone tumefaction. It can occasionally push the dental organs without leading to rhizolysis or altering the vitality of the adjacent teeth[3]. These lesions are

slow-growing, and are most often seen in women between the third and fourth decades of life. While one-half of all cases being asymptomatic, the growth of the tumor over time may lead tofacial asymmetry; the mass causing discomfort or mandibular expansion, and the possible displacement of dental roots.[2] Fibrous dysplasia and COF can have similar radiographic and histological features, making it difficult to differentiate between the two. However, fibrous dysplasia usually presents as a diffuse lesion involving the entire bone, whereas COF is usually a well-defined, localized lesion. On the radiological picture, fibrous dysplasia appears as a poorly differentiated lesion with a ground glass attenuation, contrary to cemento-ossifying fibroma.[4] The recommended treatment of the central cemento-ossifying fibroma isexcision. Due to the good delimitation of the tumor, surgical removal and curettage is also a treatment of choice.[2]

Conclusion

Slow and progressive, cemento-ossifying fibroma is a rare benign tumor that reaches the maxilla and more frequently the mandible. The ossifying and cementifying fibromas are differentiated by their clinical, radiological, and histological findings. Complete surgical excision of cemento- ossifying fibroma comes out to be only effective treatment that gave satisfactory results and can beconsidered as a definitive treatment modality.

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