Osteoma : A Case Review

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Abstract

Osteoma is a benign tumor composed of mature compact or cancellous bone. It is distinguished from common palatal and mandibular tori and buccal exostosis which are thought to be developmental or reactive origin in spite of being similar to osteomas histopathologically hence not believed to be true neoplasm. Osteoma arises from surface of the bone (periosteal) or located in the medullary bone (Endosteal) as a polypoid or sessile mass. They most common site is in the skull. They are frequently found in lingual surface of the mandible. We present a case of osteoma in the lingual side of the mandible in a 22 year old male patient which was managed by surgical excision.

Introduction

Osteoma was described as a specific entity by Jaffe in 1935, and since then hundreds of cases have been published which bear out his original criteria: the lesion is a benign neoplasm, it formed large amounts of osteoid which became calcified; there was little evidence to suggest that the lesion was an inflammatory process, there were characteristic X-Ray changes, such reactive bone, which appeared some distance from the lesion, the lesion occurred most frequently in young adults, pain is an outstanding feature (not so anymore) and complete removal is the treatment of choice.[1]

Osteoma is a benign often asymptomatic neoplasm, consisting of well-differentiated matured bone. It is characterized by proliferation of either compact or cancellous bone in an endosteal or periosteal location[(2)]. It can be central, peripheral or extraskeletal. The central osteoma arises from the endosteum, the peripheral osteoma from the periosteum and the extra-skeletal soft tissue osteoma usually develops within the muscle.[3]

In the facial bones, both central and peripheral osteomas have been described. Peripheral type of osteoma is most common in the lower jaws, which occurs at the surface of the cortical bone andis sessile or pedicled.[3] Most of the osteomas occurring in the mandible are dense osteomas, and the cancellous osteoma is comparatively rare.[4] It is seen in young adults and usually remains less than two cm in size after years of slow enlargement.[3] The pathogenesis of peripheral osteoma is unclear.

Some investigators consider it as a true neoplasm, while others classify it as a developmental anomaly.[5] Possibility of a reactive mechanism, caused by trauma or infection has also been suggested. Maxillofacial osteoma associated with cutaneous sebaceous cysts, multiple supernumerary teeth and colorectal polyposis is known as Gardener's syndrome.[3]

Case Report

A 22 year old male patient reported to Dept. of Oral & Maxillofacial Surgery in with chief Complain of a swelling in the lingual surface of right mandible region. History of slow growing swelling since 3 years which gradually attained to the present size. Patient did not have any significant medical or family history. The lesion was totally asymptomatic. No functional disturbances seen except for the right lateral movements of the tongue.

On Extra oral examination, no gross asymmetry was detected. On Intra oral examination a well defined mass was present on the lingual aspect of right body of mandible extending from first premolar to first molar On Inspection and Palpation, the swelling measured approximately 2x1 cms which was non-tender and hard in consistency. The overlying mucosa was normal in color and texture. (Fig .1). All the biochemical & hematological investigations were within normal limits.

Occlusal radiograph shows a well circumscribed radiopaque mass in relation to lingual surface of right body of mandible (Fig. 2).

Under local anesthesia the body mass was approached by making a crevicular incision, mucoperiosteal flap was reflected (Fig 3). The mass was found to be attached to the bone. The mass was divided into parts using bone cutting burs and then excised used chisel and mallet (Fig 4). The cortical plate of the body of the mandible was smoothened with a bur under copious saline irrigation and the specimen sent for histopathological examination. Post operative recovery was uneventful. Post operative Occlusal radiograph shows total clearance.

Histopathological examination of the H & E stained sections show bony trabeculae consisting increased amount of marrow spaces. The marrow spaces contain RBCs, scattered inflammatory cells & blood vessels.

Discussion

Osteoma is described as a benign neoplasm of bone composed of mature compact or cancellous bone in an endosteal or periosteal location.[6] The central osteoma arises from the endosteum, the peripheral osteoma from the periosteum and the extra skeletal extraskeletal soft tissue osteoma usually develops within the muscle. In the maxillofacial area both central and peripheral osteomas have been described. Peripheral osteoma is most common in the lower jaws. The most common site is the frontal sinus, followed by the ethmoidal and maxillary sinus. Peripheral osteomas are more frequent in the mandible than in the maxilla.[3] They most commonly develop in young adults and are rare benign tumors of bone.[3]

Osteomas are usually slow growing, painless solitary mass that is palpable unless it develops within the medullary space.[7] Periosteal osteomas clinically appears on the surface of bone as a polypoid or sessile mass, with freely mobile underlying mucosa.[6] Endosteal osteoma are usually asymptomatic and noted on routine radiographs.[8] As reported in our case patient was a young adult with a sessile mass attached to lingual cortical plate of mandible with firmly adherent mucosa. Males seems to be affected more frequently than females, and children are almost never affected unless they have Gardners syndrome., which is an autosomal dominant triat that features osteomas, fibromatosis of the skin and fascia, and polyposis of large intestine with a high degree of malignant transformation.[7]

Osteomas should be distinguished from tori and exostosis which are thought to be developmental or reactive in origin, histopathologically they are found to be similar, hence not believed to be true neoplasm.[8] Tori is also known to develop in the bicuspid area in response to the torsional stress created by heavy mastication.[9] The exact etiology and pathogenesis of peripheral osteoma is unknown. Both hamartomatous and neoplastic factors have been advocated, but no definite conclusion has been reported. Infiltration of interdental bone and abnormal histological bone structure might support the neoplastic nature of this lesion.[10]

Developmental, neoplastic and reactive causes have been attributed as possible etiologic factors. It is unlikely that peripheral osteomas are a developmental anomaly, as most cases occur in adults.[3] Some investigators have classified them as a reactive condition triggered by trauma, because peripheral osteomas are generally located on the lower border or buccal aspect of the mandible which are areas susceptible to trauma.[11] But most of the times they are considered as neoplasm.

Histologically osteomas consists of mature, lamellar bone or cancellous bone with abundant fibrofatty marrow between bony trabeculae[7,8] as reported in our case. Histologically there is no evidence of differentiation between osteoma, osteochandroma, and tori, it can only be differentiated clinically & Radiographically. Radiographically osteoma show as well circumscribed, densely sclerotic and radiopaque mass. Endosteal osteomas are generally identified on routine radiographic examination.[8](Fig. 5)

Osteomas are diagnosed and treated by local excision.[7] Recurrence of peripheral osteoma after surgical excision is extremely

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thermoplastic obturation techniques combined with lateral condensation techniques for proper adaptation to canal walls.

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Case Report 1

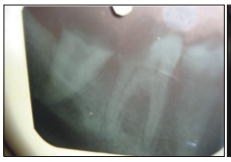

Fig. 1

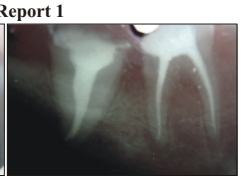

Fig. 2

Case Report 2

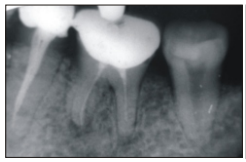

Fig. 3

Fig. 4

Case Report 3

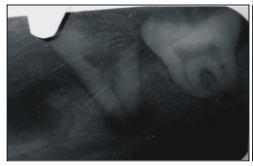

Fig. 5

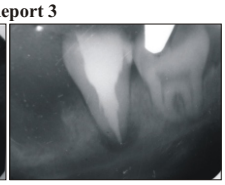

Fig. 6

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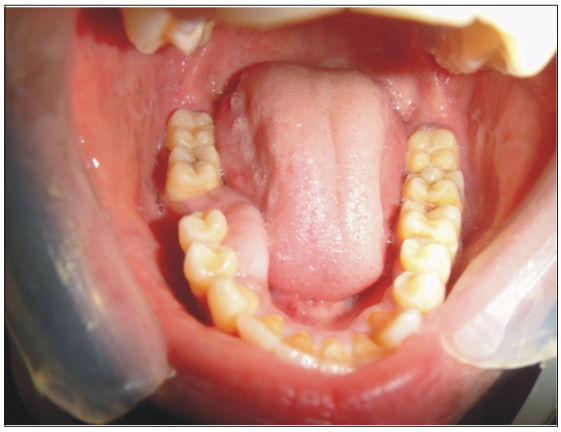


Fig. 1

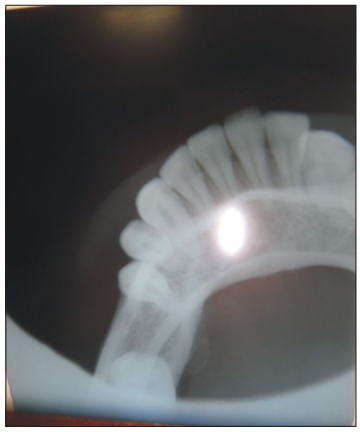


Fig. 2

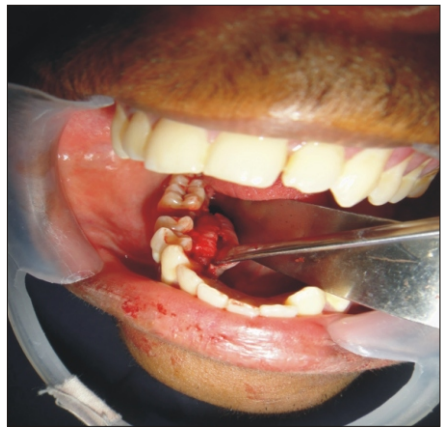
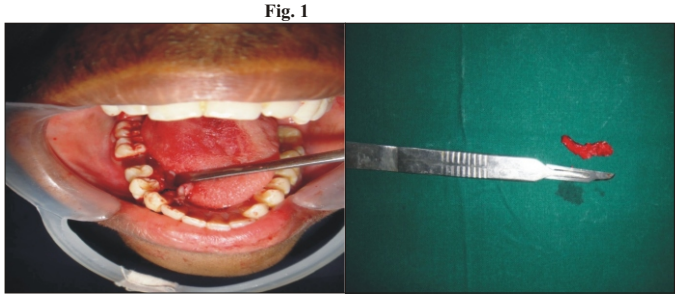


Fig. 3



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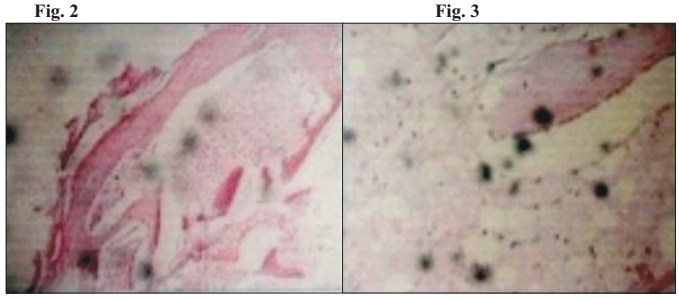

Fig. 5

rare, the goal of follow-up is to look for new osteomas or other signs indicative of Gardners syndrome, as it is ruled out in our case. Malignant transformation of peripheral osteoma has not been reported in the literature.[12]

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