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RESEARCH ARTICLE

OSTEOMA OF THE MANDIBLE- A RARE CASE

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ABSTRACT

Osteomas are benign osteogenic lesions with very slow growth, which may arise from proliferation of either cancellous or compact bone. In the jaw, these are uncommon lesions. Osteoma usually asymptomatic and it is often detected incidentally on routine radiographic examination or until it causes facial asymmetry or dysfunction. The objective of this article is to present the radiographic features and histological features of one case of osteoma in the buccal and lingual site of the mandibular angle. We report a case of osteoma originating from the buccal and lingual surface of the mandible in a 26 -year-old woman along with a brief review of the literature.

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INTRODUCTION

Osteoma is a benign tumor composed of mature compact or cancellous bone that increases in size by continuous formation of bone. It is a slow-growing, asymptomatic usually solitary lesion, which commonly affects the young adults. Osteomas are most commonly found in the skull and facial bones (Neville, 2002) Osteoma can present as a central, peripheral or extra-skeletal form (Koh, 2016). 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 (Gundewar, 2013). It is a slow-growing, asymptomatic usually solitary lesion, which commonly affects the young adults.Osteoma is essentially restricted to craniofacial skeleton (Neville, 2002). The most common site for the occurrence of osteomas is the mandible, where they appear as radiopaque masses attached to the surface of the cortex.They may be attached by a broad base, or they may be pedunculated (Goudar Gayathi, 2011). The etiology of osteomas remains unknown. Some authors consider such lesions as true neoplasms, while others classify them as developmental anomalies. Traumas and infections are considered to trigger excessive bone activity (Değerli, 2015). Patients with osteomas should be evaluated for Gardner's syndrome.

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This syndrome is an autosomal dominant disease characterized by gastrointestinal polyps, multiple osteomas, skin and soft tissue tumors, and multiple impacted or supernumerary teeth. Because the osteomas may be seen in the earlier stage of Gardner's syndrome , the surgeon may play an important role in the diagnosis of colonic polyposis (Neville, 2002) We here report a case of osteoma originating from the buccal and lingual surface of the mandible and causing asymmetry in a 26-year-old woman.

Case Report

A 26 year old female patient reported to the Department Of Oral Pathology and Microbiology, School of Dental Sciences, Sharda University, Greater Noida with chief complained of painless swelling and numbness in the right lower back region of jaw since the past 1 month.On extraoral examination the facial asymmetry could be seen on the right side of the face. (Figure 1)The surface over the swelling appeared smooth with no visible pulsation .The swelling was bony hard in consistency and non tender.A panoramic radiograph revealed an ill-defined mixed radiopaque and radiolucent lesion of size approximately 4× 5 cm, which extended from the mesial aspect of 44 to angle of the mandible. Buccal and lingual cortical plate expansion was seen in Axial computed tomography (CT) scan (Figure 2). After biopsy tissue speciman was received in 10% Formalin. Bony hard in consistency and grayish white in color and processed routinely and paraffin embedded (Figure 4).

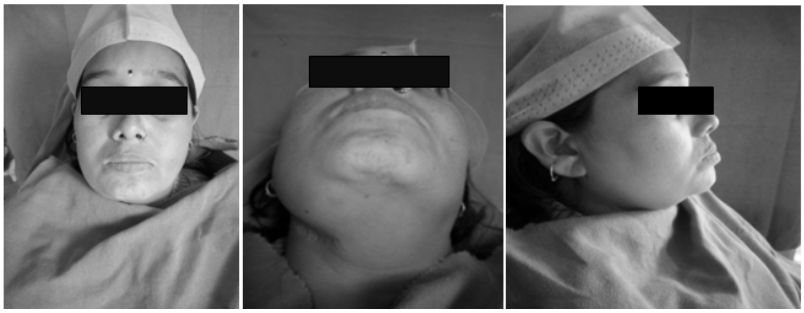
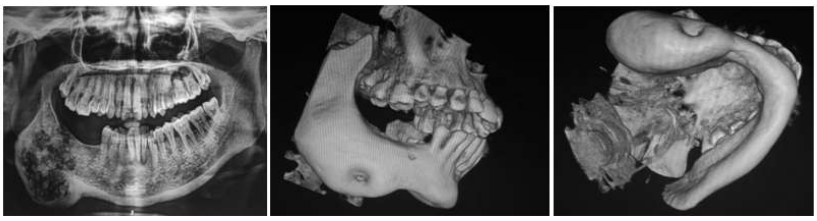


Figure 1. Swelling seen in the right side of the jaw



A B C

Figure 2. A panoramic radiograph revealed an ill-defined mixed radiopaque and radiolucent lesion of size approximately 4× 5 cm, which extends from the mesial aspect of 44 to angle of the mandible

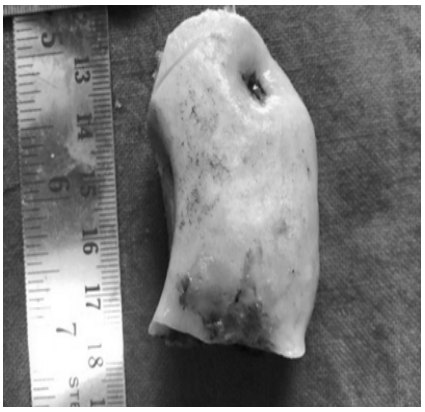
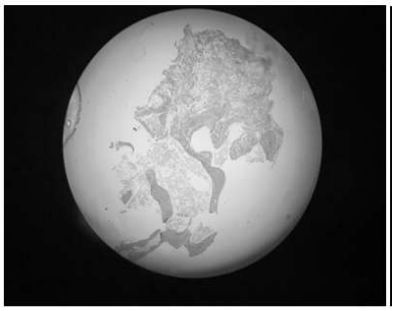


Figure 3. Hard tissue received after biopsy



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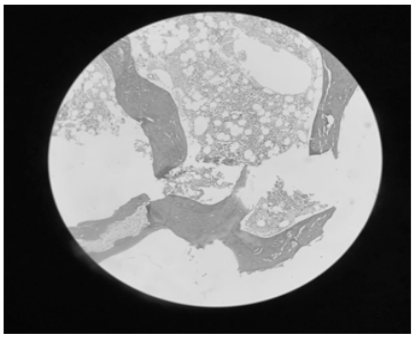

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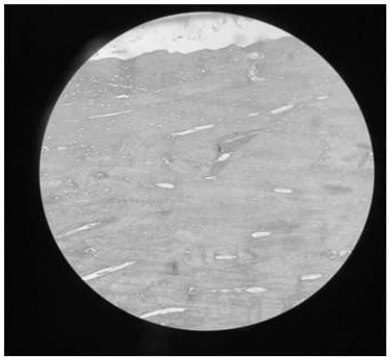

C

Figure 4- A. 4X -Decalcified H & E stained section showed dense compact bone and vascular connective tissue and stroma.

Decalcified H & E stained section showed extremely dense compact bone and vascular connective tissue and stroma .Bony trabecular seen throughout the stroma.The bone formed appears normal (Figure 5). Overall clinical, radiographical and histopathological features were suggestive of "Osteoma". Figure 2- A panoramic radiograph revealed an ill-defined mixed radiopaque and radiolucent lesion of size approximately 4× 5 cm, which extends from the mesial aspect of 44 to angle of the mandible. B. Buccal cortical plate expansion evident are seen in CBCT. C. Lingual cortical plate expansion are also seen in CBCT. B. 1OX- Bony trabecular seen through the stroma. The trabeculae are thin and show prominent osteoblastic rimming. C. 4OX - Osteocytes lacunae are also seen.

DISCUSSION

In 1935, Jaffe first described osteoma as a specific entity (Koh, 2016). Osteomas are most commonly found in the skull and facial bones (Khandelwal, 2016). It is generally slow growing, painless, asymptomatic solitary mass that is palpable unless it arises within the medullary space. Some have hypothesised that the lesion is caused by congenital anomalies. Another proposal, which is no longer held, was that chronic inflammation caused neoplastic proliferation.The development of these formations may be a result of trauma or embryogenetic changes (Kaplan, 2008). Since the tumour has been found to develop after puberty Haymann believed it to depend on conditions regulating growth in the cranial bones. Friedber gsuggested trauma with consequent periostitis as a predisposing factor (Rajendran, 2009). Three different types of osteomas are central, peripheral and extra-skeletal. 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 (Gundewar, 2013). They are most commonly encountered on the craniofacial skeleton (Karandikar, 2011). Most jaw osteomas are detected in young adults and are generally asymptomatic, solitary lesions (Khandelwal, 2016).The mandible is more frequently involved, and the most common sites are the lingual aspect of the body, the angle, and the condyle (Meher, ?). Lesions are usually asymptomatic and can be discovered in routine clinical and radiographic examination. Sometimes, depending on the location and size of the lesion, it may cause swelling, facial asymmetry, and functional impairment (Bozkurt, 2018) Osteoma is composed either of extremely dense, compact bone or coarse of cancellous bone (Noordin *et al*., 2018). Radiographically, osteoma show as well circumscribed, densely sclerotic and radiopaque mass. Endosteal osteomas are generally identified on routine radiographic examination. Histologically osteomas consists of mature, lamellar bone or cancellous bone with abundant fibrofatty marrow between bony trabeculae. Histologically there is no evidence of differentiation between osteoma, osteochondroma, and tori, it can only be differentiated clinically (16). Patients with osteomas should also be evaluated for Gardner's Syndrome. This syndrome is an autosomal dominant disorder which is characterized by colorectal polyposis, multiple maxillofacial osteomas, soft tissue tumors, cutaneous sebaceous cysts and multiple impacted supernumerary teeth (Siar, 2004) If the dentists find multiple impacted supernumerary teeth associated with osteomas of the jaw, they should examine patient for the presence of the Gardner's Syndrome (Koh, 2016). Osteoblastomas and osteoid osteomas are more frequently painful and grow more rapidly than posteoma (Sayan, 2002).

Osteomas Differential diagnoses of peripheral osteoma includes several pathological entities, such as exostoses, osteoblastoma, osteoid osteoma, complex odontoma or central ossifying fibroma. Exostoses are osseous overgrowths that usually stop growing after puberty is attained, differentiating them from osteomas. Central ossifying fibromas have well-defined borders and a thin, radiolucent line separating the lesion from the surrounding normal bone. Osteoblastomas and osteoid osteomas are most often painful and growth is rapid as compared to osteomas. A complex odontoma also presents as a well-defined radiopacity within bone, but the density is greater than that of bone and resembles that of a tooth (Koh, 2016). Larger osteomas of the mandibular body causing symptoms or cosmetic deformity are treated by conservative surgical excision.Osteomas arising in the condyle are usually removed surgically.Large lesions mandate condylectomy (Khandelwal, 2016)

Conclusion

In conclusion, the identification of the radiographic features is essential to diagnose the osteoma, since its radiographic appearance is characteristic and should be kept in mind in order to do the diagnosis. Although its aetiology remains unknown, we could suggest developmental aetiology for the present case.Since osteomas, can cause facial deformity, limitation or deviation of the mandible on opening, headache, bone pain, dysphagia or exophthalmos, the clinician should look for these findings while examining the patient Periodical clinical and radiographic follow-ups were performed in this patient.

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