

Peripheral Osteoma of Mandible in a Female: A Case Report

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ABSTRACT

Background: Osteomas of Oral and Maxillofacial areas are a rare entity in the female. The literature review revealed that very less informative cases in female patients had been reported to date. Being a benign neoplasm, Osteomas are often asymptomatic and involves matured bone. Osteoma shows three variants- Osteomas arising from the endosteum and termed as the central type, arising from the periosteum and known as the peripheral type and the one which develops within the muscle is coined as extraskeletal soft tissue osteomas. Amongst the Oral and Maxillofacial bones, most commonly both central and peripheral osteomas have been described. Peripheral osteomas generally involve the frontal, ethmoid, and maxillary sinuses, but are seldom found in jawbones. The cases of Osteomas are commonly seen in male than female. Herewith we present a rare case of peripheral Osteoma of the angle of the mandible in the 30-Year-old female patient.

Keywords: Osteoma, Benign neoplasm, Extraskeletal, Periosteum.

INTRODUCTION

Osteoma is a benign osteogenic tumor arising from the proliferation of cancellous or compact bone. The Osteoma can be central, peripheral or of an extraskeletal type. Osteomas arising from the endosteum are termed as the central type, arising from the periosteum are known as the peripheral type, and the one which develops within the muscle is known as extraskeletal soft tissue osteoma^{1,2}.

Peripheral osteomas are uncommon. Clinically, the Peripheral osteomas is usually an asymptomatic slow-growing lesion which can produce swelling and asymmetry³. As noted in previous reports in the literature, Peripheral osteomas of the jaw bones is quite rare. These lesions usually appear as unilateral, pedunculated mushroom-like masses. In the mandible, the most common sites are the angle and lower border of the body, locations that are more susceptible to trauma. Generally, the cases of

Peripheral osteomas are commonly seen in male and older individuals¹.

The pathogenesis of Peripheral Osteoma is still unclear. According to the literature, some studies revealed it as a true neoplasm, while others classify it as a developmental anomaly⁴. There is also a possibility of a reactive mechanism, triggered by trauma or infection⁵. The association between maxillofacial osteomas, cutaneous sebaceous cysts, multiple supernumerary teeth and colorectal polyposis is known as Gardner's syndrome⁶.

The purpose of presenting a case report is to shed light on a large peripheral osteoma originating from the right border of the mandible and causing asymmetry in a 30-year-old Female.

Received: July. 8, 2020; Accepted: Aug. 29, 2020

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A 30-year-old female patient from Ujjain, Madhya-Pradesh visited the K.M.Shah Dental College and Hospital, with the chief complaint of swelling on the right lower one-third of the jaw for three years. Before three-year patient had no complain of swelling, but after that, she noticed a swelling which was small, painless and slowly growing to the present size. There was no relevant medical, dental and family history to the present condition. Moreover, the patient had normal oral habits and normal vital statistics. There was no history of trauma to the region.

On clinical examination, there was extra-oral swelling which was 1 X 1cm in size present on the right side of the base of the mandible near to the angle (Figure-1). The swelling was oval in shape, bony hard and attached to the lower border of the mandible, without any rise in temperature. The overlying skin was normal in colour and was not attached to the underlying structure. On Intra-oral examination, there was no evidence of any pathological change and or significant finding with respect to the swelling in the oral tissue (Figure-2). On the basis of history and clinical examination, a provisional diagnosis of Osteoma of the inferior border of the right body of the mandible was given. Differential diagnosis of the exostosis, Osteoid Osteoma, Osteochondroma and osteoblastoma was given.

The patient was advised for radiographic examination. The orthopantomography showed a well-defined radiopaque oval-shaped mass, measuring about 1×1 cm over the right inferior border of the mandible near to the angle (Figure-3).CT scan view revealed a well-defined radio-dense area present on the right lateral side of the lower border of the mandible (Figure-4). On the basis of radiographical examination, diagnosis of Osteoma of the inferior border of the right body of the mandible was given.

Surgery was planned under Local Anesthesia for excision of the mass. And the excised Lesion was sent to the Oral Pathology Department for further confirmation. On grossing, the given specimen was 1.5 X 1.5 cm in size, oval in shape, whitish in colour, hard in consistency with regular border and smooth surface (Figure-5). Tissue specimen was fixed in

10% formaldehyde and then decalcified in 5% formic acid solution. After decalcification, the tissue was processed routinely and paraffin-embedded. Tissue block was prepared, and sections prepared of 5 μ thickness. The prepared slides were stained with hematoxylin and eosin.

The histopathological examination of the specimen revealed a hard trabecular bone with marrow spaces (Figure-6). Bony trabeculae were irregularly arranged and contained plump active looking osteocytes within the lacunar spaces. The interstitial marrow spaces were composed of cellular connective tissue, numerous blood vessels and adipose tissue (Figure-7). A well defined periosteal connective tissue was also noted. With clinical and radiographic Correlation, the histopathological diagnosis of Peripheral Osteoma was given.



Fig 1: Extra-oral Swelling.



Fig 2: Intraoral area with no evidence of Pathology.



Fig 3: Orthopantomograph revealing well-defined radiopaque oval shaped swelling.

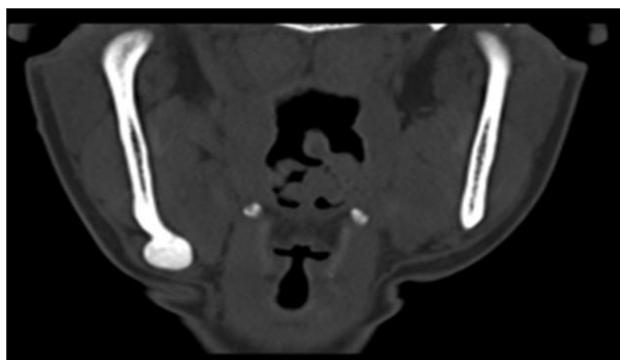


Fig 4: CT scan view revealed a well-defined radio-dense area present on the right lateral side of the lower border of mandible.



Fig 5: Grossing image of the Lesion.

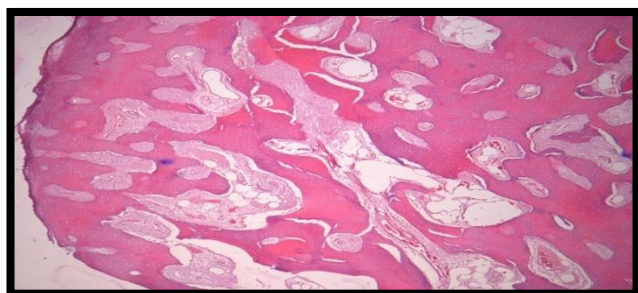


Fig 6: H & E stained section shows hard trabecular bone with marrow spaces.

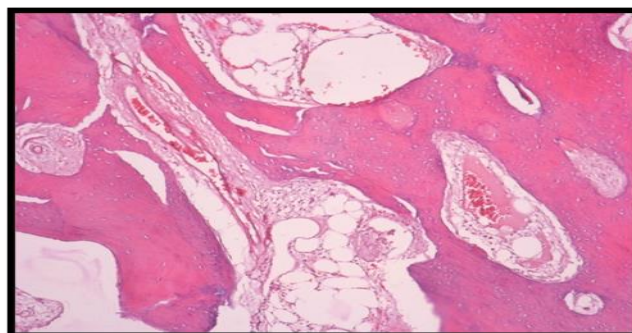


Fig 7: Bony Trabeculae showing osteocytes within the lacunar spaces and numerous blood vessels with adipose tissue in marrow spaces.

DISCUSSION

Osteoma is a benign often asymptomatic neoplasm, consisting of the well-differentiated mature bone. Osteomas are characterized by the proliferation of compact and/or cancellous bone⁷. The Osteoma can be central, peripheral or an extraskeletal type. Osteomas arising from the endosteum are termed as the central type, arising from the periosteum are known as the peripheral type, and the one which develops within the muscle is known as extraskeletal soft tissue osteoma^{1,2}.

As noted in previous reports in the literature, Osteomas show continuous and a slowly growing pattern if left untreated. The most common locations of POs are the paranasal sinuses including frontal, ethmoidal and maxillary sinuses. Among the craniofacial sites POs are rarely seen in the jaws but when occur in the jawbones it mostly affect the mandible⁸. Peripheral osteomas of the jaw bones usually appear as unilateral, pedunculated mushroom-like masses. In the mandible, the most common sites are the angle and lower border of the body, locations that are more susceptible to trauma^{3,9}. All the above features are evident in present case.

Clinically, peripheral Osteoma appears as mass ranging from 1 to 4 centimeter in diameter^{3,10}. 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^{3,10-14}. All these features are clearly seen in the present case.

The exact aetiology and pathogenesis of peripheral Osteoma are unknown. Neoplastic and reactive causes have been suggested as possible etiologic factors. Woldenberg et al.³ suggested that some peripheral osteomas may be reactive rather than neoplasms, probably associated with trauma. Also, some authors have reported that as many of the peripheral osteomas are located on the lower border of the mandible, it is possible that muscle traction plays a role in the development of peripheral osteomas^{3,11}. However, in the present case, there is no history of previous trauma or infection.

Radiographically peripheral osteomas are well-demarcated, round or oval radio-dense mass. The CT scan is the best image examination tool for the diagnosis of peripheral osteomas because it shows more details about the relationship between the tumour and the adjacent structures when compared to conventional radiographies¹⁵. In our cases, the peripheral Osteoma was diagnosed by means of routine radiographic examination as well as was complemented by the CT scan, with the goal of enabling an adequate result which can help for surgical planning.

Histopathological examination of Osteomas shows the variation in the form of picture revealing mature bone that is either compact, trabecular, or a combination of both⁷. Compact type osteomas develop more often in men⁷ while women have the highest incidence of the trabecular type as observed in our case.

After all the examination, Peripheral Osteoma should be differentiated from several pathologic entities, such as exostoses, osteoblastoma, and osteoid osteoma, late-stage central ossifying fibroma, Cementoblastoma, or complex odontoma. Exostoses are bony excrescences that usually stop growing after puberty, differentiating them from osteomas^{16, 17}.

According to literature, Central ossifying fibromas are well-defined, and a thin, radiolucent line may separate it from the surrounding bone. A sclerotic border may be present in the bone next to the lesion¹⁸. Osteoblastoma and osteoid osteomas are more frequently painful and grow more rapidly than peripheral osteomas¹¹. Complex odontoma presents as a well-defined radiopacity situated in

bone, but with a density that is greater than bone and equal to or greater than that of a tooth. It is also surrounded by a narrow radiolucent rim¹⁸. Ossifying fibromas are asymptomatic can cause bone expansion, root resorption or displacement of teeth¹⁷ whereas Peripheral Osteoma will not show such features. Cementoblastomas are asymptomatic and characterized by proliferation of cementum in close association with tooth root¹⁷ which is also not seen in present case.

Removal of an asymptomatic peripheral osteoma is not generally necessary. Surgical intervention is indicated only if it becomes large enough to cause facial asymmetry and functional impairment^{3,10,13,14}. In the present case due to facial asymmetry the surgical excision was planned. Recurrence after removal is very rare and malignant transformation has not been reported in literature.

CONCLUSION

Peripheral osteomas of the jaw bones are rare and usually detected incidentally because of the asymptomatic nature of the tumor. Herewith, we reported a case of Peripheral Osteoma that occurred in the right border of mandible of a female patient. Clinical and pathological features along with the use of radiographic investigatory tool poses a crucial role in terms of the differential diagnosis of the tumor as it has a characteristic features. Proper clinical, radiological and histopathological knowledge provide a medium for better understanding and a clear picture of such a rare bony lesions so that they could be diagnosed at a much earlier stage and treated accordingly.

CONFLICTS OF INTEREST

The authors declare they have no potential conflict of interests regarding this article.

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