Peripheral Osteoma of the mandible – a case report
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Abstract
Osteoma is a benign often asymptomatic neoplasm, consisting of well-differentiated mature bone. Osteomas are characterized by the proliferation of compact and/or cancellous bone. It can be of a central, peripheral, or extra skeletal type. The peripheral type arises from the periosteum and is rarely seen in the mandible. This case report presents a 42-year-old man with a large peripheral type of osteoma on the left side of the jaw at the angle of mandible. Advanced Radiographic examination by NCCT (Non Contrast Computed Tomography) revealed extent of the lesion which led to removal of the lesion surgically and no recurrence was observed after 2 months.

Key words: Computed tomography; Mandible; Osteoma; Panoramic radiography

Introduction
Osteoma is a benign osteogenic lesion characterized by proliferation of compact or cancellous bone (1–7). Osteomas are found almost exclusively in the skull, facial, and jaw bones however peripheral osteomas are uncommon (8, 9). Peripheral osteomas are more frequent in the mandible than the maxilla. Males and females are equally affected. These lesions usually appear as sessile or pedunculated masses. The most common sites are the angle and the lower border of the body of the mandible (10).

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The solitary osteoma may be classified as: peripheral (paraosteal, periosteal or exophytic) when arising from the periosteum, central (endosteal), when arising from the endosteum and extraskeletal (the so-called osseous choristoma) when arising from soft tissue (11).

Clinically it is a circumscribed, slow-growing, generally asymptomatic, hard mass producing obvious asymmetry (13). Radiographically, it is characterized by an oval, radiopaque, well-circumscribed lesion attached by a broad base or pedicle to the host bone cortex (12).

Histologically, osteoma may be of two types: (1) compact or “ivory” and (2) cancellous, trabecular or spongy. Multiple osteomas of the jaws occur in association with intestinal polyposis, as reported by Gardner et al., (14).

As peripheral osteoma of mandible is rare in occurrence, we present a case of this uncommon behavior of this neoplasm.

Case report
A 42 year old male patient reported to the Department of Oral Medicine and Radiology because of an asymptomatic swelling involving the left side of his face. He had noticed the swelling for the past 8 years, initially it was small and it was gradually increasing in size since 2 years. He had no previous history of facial trauma. Apart from aesthetic reasons, the patient had no pain or difficulty in chewing.

On extra oral examination, a well circumscribed swelling measuring 3x2 cm approximately in the left angle of the mandible was detected (figure 1). On palpation, it was bony hard, non-tender and non-pulsatile. It was adherent to underlying structure and not to overlying structure. The overlying skin was normal in color. No abnormality was seen intraorally. On bimanual palpation no lymph nodes were palpable.

On the basis of clinical examination, a provisional diagnosis of osteoma was made with Ameloblastoma as the differential diagnosis. The patient was subjected to conventional radiological examination. The panoramic radiograph showed a large radiopaque lesion in the left angle of the mandible obscuring the mandibular canal (figure 2). Left lateral oblique view of the mandible showed a well circumscribed, round radiopaque lesion at the left angle of the mandible.

Figure 1: Extra oral photograph depicting swelling on the left angle of the mandible.

Figure 2: Panoramic radiograph showing a large radiopaque lesion in the left angle of the mandible obscuring the mandibular canal.
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and well-defined attached to the inferior part on the left side of the angle of the mandible with a peduncle and extending along the external border (figures 3 and 4).

Radiographic findings were diagnostic of peripheral osteoma that required excision. All the biochemical and hematological investigations were within normal limits.

Figure 5: Surgically excised mass measuring 3X4 cm.

On the basis of clinical and radiological examination, diagnosis of peripheral osteoma was made and patient was sent for excision of the lesion. The mass was surgically excised under local anesthesia. On examination of the excised lesion, it was a hard, rigid mass measuring 3X4 cm (figure 5). On histopathological examination, an area of compact bone with lacunae was found. Most of the lacunae were empty and contain few osteocytes. Connective tissue contained collagen fibers and blood vessels were extravasated with RBCs (Red Blood Corpuscles) which confirmed the provision diagnosis (figure 6)

Discussion

Osteoma is a benign neoplasm consisting of well differentiated compact or cancellous bone that increases in size by continuous osseous growth (1-6). It is divided into a central osteoma arising from the endosteum and a peripheral osteoma arising from the periosteum (4,7,8). Peripheral osteomas of jaw bones are uncommon. Nevertheless, there is a greater occurrence in the mandible (22.85%) than in the maxilla (14.28%). Sayan et al., and Kaplan et al., reported that 81.3% of cases occurred in the mandible (1,8) while Woldenberg et al., and Balan et al., reported 64% and 83% respectively (12, 15). Osteomas can occur at any age, but are found most frequently in individuals older than 40 years (8, 15). In the present case, the age and site of the lesion are in agreement with the earlier reports of peripheral osteomas.
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The pathogenesis of peripheral osteoma is still unknown (17, 18). Some investigators classified it 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 traumatized areas. Trauma may be minor, that is unlikely to be remembered by the patient years later, and causes subperiosteal bleeding or edema that causes an osteogenic reaction (17,18). Others believe it is a true benign neoplasm (19). In our case, patient reported no history of trauma, but there could be a chance that patient experienced minor trauma which he is not aware of.

Figure 6: Histopathological examination demonstrating an area of compact bone with lacunae with few osteocytes.

Radiographically, the peripheral osteoma includes radiographic features of a well circumscribed radiopaque lesion attached to the mandible. (5,8,18) In our case report, Radiopaque lesion present on left angle of the mandible which was large, lobulated, well-defined, densely sclerotic and attached to the inferior part angle of the mandible with a peduncle and extending along the external border. Osteomas combined with a histological picture of mature bone that is either compact, cancellous, or a combination of both (17). Cortical type osteomas develop more often in men (17) while women have the highest incidence of the cancellous type as observed in our case. Multiple osteomas of the jaws are a frequent finding in Gardner’s syndrome. Patients with Gardner's syndrome may exhibit multiple colonic polyps; multiple osteomas of the long bones, skull, and jaws; multiple epidermoid or sebaceous cysts; and impacted permanent or supernumerary teeth (8,14,17,18). The lesion in our case is an isolated one and no associated syndromal features were found. Imaging of peripheral osteomas can involve traditional radiography (e.g., panoramic radiographs, Waters’ view) or CT. The use of CT with 3-D reconstruction results in better resolution and more precise localization (19).

Treatment of the osteoma consists of complete surgical removal at the base where it unites with the cortical bone. Surgical excision is the preferred treatment of osteomas. Recurrence of peripheral osteoma after surgical excision is extremely rare. Radiographic follow-up on a six month schedule is recommended for two to three years. (20)

Conclusions
We have presented a case of a large osteoma on the left angle of the mandible. The lesion had grown slowly for past two years. Following clinical and radiological diagnosis, surgical excision was done and was confirmed histopathologically. Recurrence of peripheral osteoma after surgical excision is extremely rare. However, it is appropriate to provide both periodic clinical and radiographic follow up after surgical excision of a peripheral osteoma as was done in this case.

References
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