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Research Article

Osteoma of the Left Mandible: A Rare Benign Lesion with Clinical Significance

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Introduction

Osteomas are benign, slow-growing osteogenic neoplasms composed of mature lamellar bone. They are most commonly encountered in the craniofacial skeleton, particularly within the paranasal sinuses, frontal bone, and mandible [1]. Among these, osteomas of the mandible are relatively rare, and when localized unilaterally-such as on the left side-they may present unique diagnostic and therapeutic considerations [2].

Mandibular osteomas are typically classified into three types based on their origin: central (arising from the endosteum), peripheral (from the periosteum), and extraskeletal (within soft tissues). Peripheral osteomas are the most frequently encountered variant in the mandible and are often discovered incidentally during routine radiographic examinations [3]. However, in some cases, they may manifest clinically as a firm, painless swelling, leading to facial asymmetry, occlusal disturbances, or functional limitations such as restricted mandibular movement or masticatory discomfort [4].

The etiology of osteomas remains uncertain, with proposed theories including developmental anomalies, trauma, infection, or reactive bone proliferation. While solitary osteomas are usually sporadic, multiple osteomas may be associated with syndromic conditions such as Gardner's syndrome, necessitating systemic evaluation [1]. Radiographically, mandibular osteomas appear as well-circumscribed, radiopaque masses with a homogenous internal structure, often requiring differentiation from other osseous lesions such as exostoses, osteoblastomas, ossifying fibromas, or fibrous dysplasia. Histologically, they consist of dense, compact bone or trabecular bone with minimal marrow spaces and lack cellular atypia [2].

Although benign and non-aggressive, surgical excision is indicated in symptomatic cases, for aesthetic concerns, or when the lesion interferes with oral function. The prognosis following complete excision is excellent, with minimal risk of recurrence [5]. This article presents a detailed overview of a left-sided mandibular osteoma, emphasizing its clinical presentation, diagnostic approach, differential diagnosis, and management strategies, supported by a review of relevant literature. These lesions are considered non-aggressive and are usually discovered incidentally during routine imaging. However, their growth potential and proximity to vital structures may necessitate clinical intervention [3].

Case Report

A 42-year-old female patient presented with a chief complaint of a painless swelling in the anterior left mandibular region. The swelling had been gradually increasing in size over several months without any associated pain, paraesthesia, or functional limitation. The patient denied any history of trauma or systemic illness. Clinical examination revealed a firm, dome-shaped swelling located in the buccal vestibule adjacent to the left mandibular premolars. The overlying mucosa exhibited mild inflammation, and a whitish mass was noted protruding through the buccal mucosa.

Figure 1: Intra-Oral Picture.

On palpation, the lesion was firm, non-tender, immobile, and well-circumscribed. Radiographic evaluation was performed using panoramic and mandibular occlusal views. The panoramic radiograph revealed a solitary, dense radiopaque mass situated between the left mandibular premolars, suggestive of a bony outgrowth. The occlusal radiograph further delineated a well-defined radiopaque lesion measuring approximately 1.8 × 1.5 cm, consistent with the radiographic appearance of a peripheral osteoma. No evidence of cortical perforation or root resorption was observed.

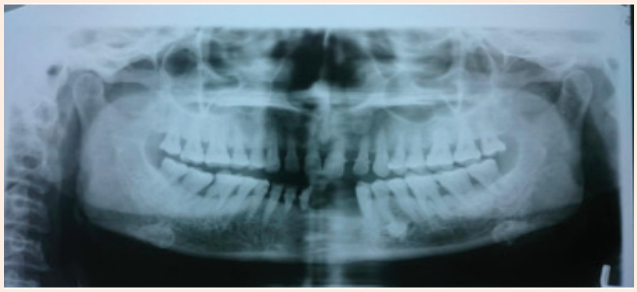

Figure 2: Pre-Operative OPG.

Figure 3: Pre-operative occlusal view.

Following a comprehensive clinical and radiographic assessment, a provisional diagnosis of peripheral osteoma was made. After obtaining informed consent, the patient was scheduled for surgical excision under local anesthesia.

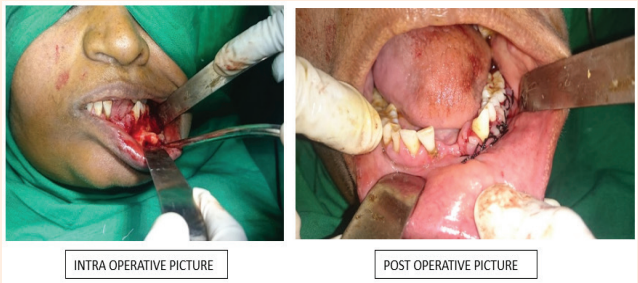

Figure 4: Intra and Post operative picture.

An inferior alveolar nerve block with supplemental buccal infiltration was administered. A crevicular incision was made extending from the mandibular left central incisor (tooth 31) to the first molar (tooth 36), and a full-thickness mucoperiosteal flap was elevated to expose the lesion.

The bony mass was carefully dissected and separated from the surrounding cortical bone using rotary instruments and was excised. The surgical site was thoroughly irrigated with copious saline to remove debris and minimize thermal injury. After confirming complete removal and absence of residual fragments, haemostasis was achieved, and the flap was repositioned and sutured using 3-0 black braided silk sutures.

Postoperative care included a regimen of antibiotics, analgesics, and antiseptic mouthwash. The patient was advised to maintain a soft diet for 3-5 days, ensure meticulous oral hygiene, and avoid trauma to the surgical site. The first postoperative review was conducted at seven days for suture removal, and healing was monitored over a period of four to six weeks. The excised specimen was submitted for histopathological examination, which confirmed the diagnosis of peripheral osteoma composed of mature lamellar bone with osteocytes in lacunae and no evidence of atypia. The postoperative course was uneventful, with no signs of infection, nerve injury, or recurrence observed during follow-up.

Discussion

Osteomas represent a distinct category of benign osteogenic tumours characterized by the proliferation of mature lamellar bone. Their slow-growing nature and well-circumscribed morphology often render them clinically silent, particularly in the early stages. However, their anatomical location-especially within the craniofacial skeleton-can lead to significant clinical implications when they enlarge or impinge upon adjacent structures [5].

The mandible, though less commonly affected compared to the paranasal sinuses and frontal bone, remains a notable site for peripheral osteomas [6]. These lesions typically arise from membranous bone and are classified into three subtypes based on their origin: central (endosteal), peripheral (periosteal), and extra-skeletal (soft tissue) [7]. Peripheral osteomas are the most frequently encountered variant in the mandible and are often discovered incidentally during routine dental imaging or evaluation for unrelated complaints [8].

Despite their benign and non-aggressive behaviour, osteomas may present with aesthetic concerns, facial asymmetry, or functional disturbances such as impaired mastication or speech, depending on their size and location [9]. In rare cases, they may mimic other osseous pathologies, necessitating a thorough differential diagnosis. Radiographically, osteomas appear as well-defined radiopaque masses, often indistinguishable from other benign bone lesions such as exostoses, ossifying fibromas, or odontomas without histopathological confirmation [10].

The pathogenesis of osteomas remains debated, with theories ranging from developmental anomalies and trauma to reactive bone proliferation following chronic irritation [11]. While solitary osteomas are typically sporadic, the presence of multiple osteomas should prompt evaluation for syndromic associations such as Gardner's syndrome, which includes intestinal polyposis and epidermoid cysts [12].

Management of mandibular osteomas is largely dictated by symptomatology and patient preference. Asymptomatic lesions may be monitored, whereas symptomatic or enlarging lesions warrant surgical excision [13]. The prognosis following complete removal is excellent, with minimal risk of recurrence [14].

In the presented case, the peripheral osteoma of the left anterior mandible was clinically evident and radiographically distinct, necessitating surgical intervention. The lesion's proximity to the premolar region and its outward projection through the buccal mucosa posed both aesthetic and functional concerns [15]. Surgical excision was performed successfully, and histopathological analysis confirmed the diagnosis of a mature osteoma [16]. This case underscores the importance of recognizing peripheral osteomas in the differential diagnosis of mandibular swellings and highlights the role of imaging and histopathology in guiding appropriate management [17].

Conclusion

Peripheral osteomas of the mandible, though rare, should be considered in the differential diagnosis of solitary radiopaque lesions presenting with swelling or asymmetry [18]. Their benign nature and slow growth often allow for conservative management; however, surgical excision is warranted in symptomatic cases or when aesthetic or functional compromise occurs [19]. Accurate diagnosis relies on a combination of clinical examination, radiographic imaging, and histopathological confirmation. The presented case illustrates the successful management of a left-sided mandibular osteoma through surgical excision, with excellent postoperative outcomes and no recurrence during follow-up [20].

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