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Peripheral Osteoma of the Mandible in the Premolar–Molar Region of an Adolescent: A Case Report

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ABSTRACT

Osteomas of the mandible are rare, benign osseous tumours characterized by slow growth and well-circumscribed morphology. They often present as asymptomatic swellings but may cause functional or aesthetic concerns depending on their size and location. This article reports a case of a peripheral osteoma extending from tooth number 44 to 46 in an 18-year-old girl, managed successfully by surgical excision under local anaesthesia. Radiographic evaluation was performed using an occlusal radiograph, and intraoperative photographs documented the surgical procedure. The case highlights the importance of early diagnosis, appropriate imaging, and minimally invasive surgical management.

Keywords: Osteoma; Mandible; Peripheral osteoma; Local anaesthesia; Case report; Occlusal radiograph

INTRODUCTION

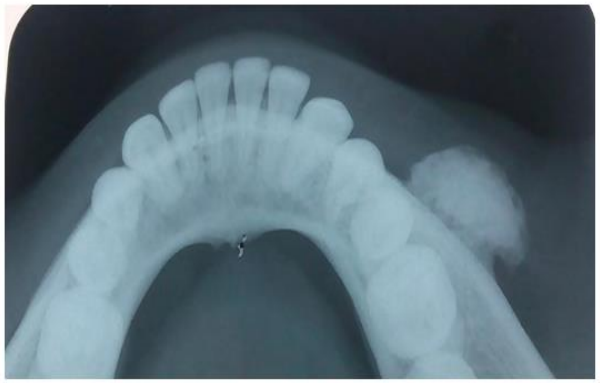
Osteomas are benign osteogenic lesions composed of mature compact or cancellous bone. They are classified as central, peripheral, or extraskeletal depending on their origin [1]. Peripheral osteomas of the mandible are uncommon and typically arise from the cortical bone surface, presenting as slow-growing, well-demarcated masses [2]. Although asymptomatic in many cases, they may interfere with mastication, occlusion, or facial aesthetics [3].

The etiology of mandibular osteomas remains debated, with theories suggesting developmental, reactive, or neoplastic origins [4]. Radiographically, they appear as dense, radiopaque masses with well-defined borders [5]. Surgical excision remains the treatment of choice, with intraoral approaches preferred for accessibility and aesthetic outcomes [6].

This case report describes a mandibular osteoma in a young female patient, extending from tooth number 44 to 46, excised under local anaesthesia, with emphasis on radiographic and intraoperative documentation.

CASE REPORT

An 18-year-old female presented to the outpatient department with a chief complaint of a hard swelling in the right mandibular premolar–molar region that had been gradually increasing in size over the past year. The patient reported no pain, paraesthesia, or difficulty in mastication, but expressed concern about the aesthetic prominence of the swelling.

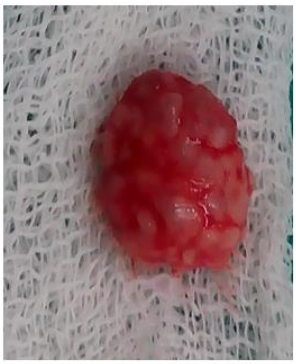


MANDIBULAR OCCLUSAL RADIOGRAPH

On extraoral examination, no facial asymmetry was evident. Intraoral examination revealed a firm, non-tender, sessile bony mass extending from the region of tooth numbers 44 to 46. The lesion was well-defined, with smooth margins, and the overlying mucosa appeared intact and normal in color, with no signs of ulceration or inflammation. Teeth in the affected region were vital, with no mobility or periodontal compromise.

Radiographic evaluation was performed using a mandibular occlusal radiograph. The image demonstrated a well-circumscribed, homogenous radiopaque lesion arising from the buccal cortical plate in the premolar–molar region. The lesion appeared to be attached broadly to the cortical surface, with no evidence of root resorption or periapical pathology. The radiographic features were consistent with a benign osteogenic lesion, and a provisional diagnosis of peripheral osteoma was established. Surgical excision was planned under local anaesthesia, considering the patient's age, lesion size, and accessibility. Following administration of local infiltration anaesthesia, a crestal incision was placed in the premolar–molar region, and a full-thickness mucoperiosteal flap was carefully elevated to expose the lesion. The bony mass was clearly visualized, appearing ivory-like and well demarcated from the surrounding cortical bone. Using rotary instruments and chisels, the lesion was meticulously dissected and excised in toto, ensuring preservation of adjacent teeth and vital structures. Haemostasis was achieved, and the surgical site was irrigated with sterile saline.

AFTER FLAP REFLECTION AND EXPOSURE OF THE OSTEOMA



THE EXCISED MASS - OSTEOMA

AFTER EXCISION OF THE OSTEOMA

POSTOPERATIVE PICTURE AFTER SUTURING

The flap was repositioned and sutured with 3.0 Black braided silk sutures. Intraoperative photographs were taken to document the exposure of the lesion, the excision process, and the final surgical site. The excised specimen was submitted for histopathological examination, which revealed dense lamellar bone with minimal marrow spaces, confirming the diagnosis of osteoma.

The postoperative period was uneventful. The patient was prescribed analgesics and advised on oral hygiene maintenance. Sutures were removed after one week, and the surgical site demonstrated satisfactory healing. Follow-up visits at one month, three months, and six months revealed complete resolution of the swelling, with no recurrence and restoration of normal contour in the premolar–molar region. The patient expressed satisfaction with both functional and esthetic outcomes.

- **Clinical features:** Slow-growing, asymptomatic swelling with intact mucosa and firm consistency.
- **Radiographic findings:** Occlusal radiograph showing a well-circumscribed radiopaque lesion attached to buccal cortex.
- **Surgical management:** Intraoral approach under local anesthesia, complete excision with flap elevation.
- **Histopathology:** Dense lamellar bone confirming osteoma.
- **Outcome:** Uneventful healing, no recurrence at six months, esthetic and functional restoration.

DISCUSSION

Peripheral osteomas of the mandible are rare, with predilection for the posterior region and angle of the mandible [7]. However, involvement of the premolar–molar region, as seen in this case, has also been reported [8]. The lesion typically presents as a slow-growing, painless swelling, often discovered incidentally during routine dental examination [9].

Radiographic evaluation is crucial for diagnosis. Occlusal radiographs, as used in this case, provide clear visualization of buccolingual expansion and cortical involvement [10]. Advanced imaging such as CT scans may offer more detailed assessment but are not always necessary for small, well-defined lesions [11].

Surgical excision remains the definitive treatment. Intraoral approaches are favored due to reduced morbidity and better esthetic outcomes compared to extraoral approaches [6]. Complete excision is essential to prevent recurrence, although recurrence rates are generally low [12].

Histologically, osteomas consist of mature lamellar bone with minimal marrow spaces, consistent with findings in this case [13]. Differential diagnoses include exostoses, osteoblastoma, and osteoid osteoma, which can be distinguished based on clinical, radiographic, and histological features [11-13].

This case underscores the importance of early recognition and minimally invasive management of mandibular osteomas, particularly in young patients where esthetic and functional concerns are paramount.

CONCLUSION

Mandibular osteomas, though rare, should be considered in the differential diagnosis of localized bony swellings. Occlusal radiographs provide valuable diagnostic information, and surgical excision under local anesthesia offers a safe and effective treatment modality. Documentation with intraoperative photographs enhances clinical understanding and academic reporting. Early diagnosis and appropriate management ensure favorable outcomes with minimal morbidity.

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