

Surgical Excision of Peripheral Osteoma of the Inferior Border of the Mandible by Extraoral Approach: A Case Report of Three Cases

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Abstract

Rationale: Osteoma is a benign osteogenic lesion with a slow growth, characterized by the proliferation of either cancellous or compact bone. Peripheral osteoma which is known to arise from the periosteum is a rare entity in the mandible. This case report emphasizes on the extraoral approach used for surgical excision of peripheral osteoma of the mandible. **Patient Concerns:** This article presents three cases of peripheral osteoma in females who presented with extraoral swelling near the inferior border of the mandible. The swelling was noticed incidentally and had mild or no pain. **Diagnosis:** Diagnosis was made after correlating clinical and radiographical findings and confirmed by histopathology. **Treatment:** Extraoral submandibular incision was used for the excision of peripheral osteoma in all the cases. **Outcomes:** Patients were followed up for 3 months without any signs of recurrence. **Take-away Lessons:** Every case is unique, and it is wise to take uncommon surgical approach keeping in view the patient's benefit at large.

Keywords: Female, mandible, osteoma.

INTRODUCTION

Osteomas are benign, slow-growing, and well-defined osteogenic lesions developing from mature bone. Characterized by proliferation, they can be compact or cancellous bone.^[1] They are usually classified as central from endosteum (endosteal), peripheral from periosteum (parosteal, periosteal, or exophytic), and extraskelatal (osseous choristoma).^[2] Pathologically, osteomas are divided into two types: compact and cancellous osteoma. They are usually asymptomatic and can be discovered during routine clinical and radiographic examinations.

Peripheral osteoma of the craniofacial region occurs most frequently in the paranasal sinuses. Other locations include external auditory canal; orbit, temporal bone, and rarely in pterygoid processes.^[3] Peripheral osteomas of the jaws are a relatively rare entity. They involve the mandible more than the maxilla,^[4] with the site of greatest predilection being the lingual aspect of the body, angle, and inferior border of the mandible.^[5] Literature revealed that most of the cases are managed by intraoral approach,^[6-8] however, the use of extraoral approach has also been reported.^[9,10]

This article presents three cases of peripheral osteoma, which presented in our college from June 2018 to August 2019. The uniqueness of this case report lies in the extraoral surgical approach chosen.

CASE REPORT

Case 1

A 19-year-old female reported with a complaint of swelling in the left mandibular body region [Figure 1a]. The swelling had been gradually enlarging for four years but was otherwise asymptomatic. There is no history of trauma and inflammation

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in that region. The swelling was bony hard, incompressible, and fixed to the inferior border of the mandible. It is nontender and sessile, round to oval, and approximately 2 cm x 2.5 cm x 2.5 cm in dimension. Intraorally no abnormalities were detected. Coronal and axial computed tomography (CT) sections showed a hyperdense, well-circumscribed mass, attached to the lingual and buccal cortex of the left body of the mandible. Three-dimensional (3D) CT showed a well-circumscribed lesion measuring 3.5 cm x 2.5 cm in size [Figure 1b]. Radiographic differential diagnoses included bony exostoses, osteoblastoma, osteoid osteoma, peripheral ossifying fibroma, and peripheral osteosarcoma. Dense immobile lesion, lack of pain and radiographic findings helped us arrive at the diagnosis of peripheral osteoma. The surgical procedure was performed under local anaesthesia. A submandibular skin incision was made, and the subcutaneous tissues were bluntly dissected. The mass was excised in toto using osteotome and bone cutting burs [Figure 1c]. Wound was cleaned thoroughly and closed in layers. The biopsy report revealed live bony trabeculae with osteocytes within and fatty marrow in between. Haematopoietic tissue was seen between bony trabeculae [Figure 1d]. The final diagnosis suggested it to be compact osteoma. Postsurgical recovery was uneventful and 3-month follow-up revealed no evidence of recurrence.

Case 2

A 24-year-old female reported with the complaint of a swelling in the right mandibular body region [Figure 2a]. The swelling was accidentally noticed by the patient while taking a photograph 1½ years back. The swelling has remained the same size and was otherwise asymptomatic.

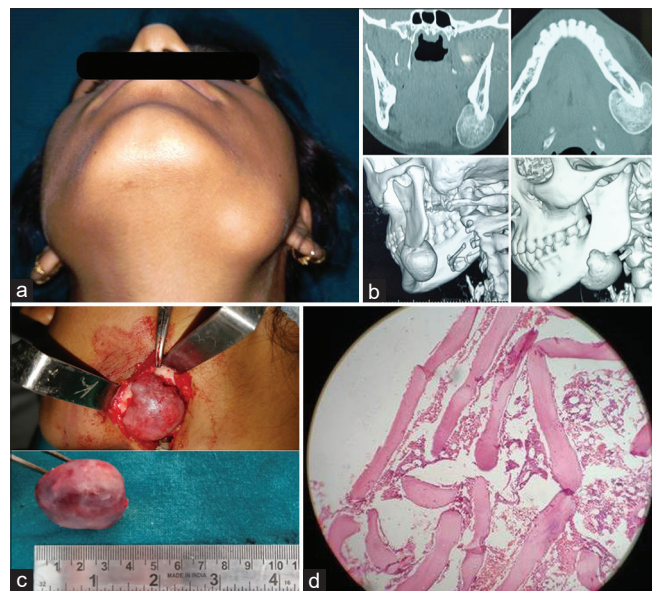


Figure 1: (a) Extraoral large swelling at left mandibular posterior region. (b) Coronal, axial, and three-dimensional-computed tomography views of hyperdense lesion at left mandibular posterior region. (c) Intraoperative surgical site and exenterated lesion. (d) Histopathological slide showing bony trabecular with osteocytes

There is no history of trauma or inflammation in that region. The swelling is bony hard, incompressible, and fixed to the inferior border of the mandible. It was nontender and sessile, round to oval, and approximately 1.5 cm x 1 cm x 1.5 cm in size. Intraorally no abnormalities were detected. Preoperative orthopantomogram (OPG) revealed a dense radiopaque mass located at the right inferior border of the mandible in the posterior region, attached to the inferior border. Lack of pain along with dense immobile lesion and the radiographic findings help us arrive at the diagnosis of peripheral osteoma. The surgical procedure was performed under general anaesthesia, using submandibular skin incision [Figure 2b]. The mass was excised in toto and sent for histopathology reporting. The final diagnosis suggested it to be compact osteoma. Postsurgical recovery was uneventful and 3 months follow-up revealed no evidence of recurrence.

Case 3

A 42-year-old female reported with a complaint of swelling and intermittent mild pain in the left mandibular angle region for the last three years [Figure 3a]. The swelling has remained the same size and was associated with mild pain which subsides on its own. There is no history of trauma or inflammation in that region. The swelling is bony hard, incompressible, and fixed to the inferior border of the mandible. It was nontender and sessile, round to oval, and approximately 1 cm x 1 cm in size. Intraorally no abnormalities were detected. Preoperative OPG revealed a well-defined oval-shaped completely radiopaque lesion in the left angle region of the mandible [Figure 3b]. Bony hard swelling along with little or no pain associated with no other intraoral findings helped us arrive at the diagnosis of a peripheral osteoma. The surgical procedure was performed under local anaesthesia, using submandibular skin incision. The mass was excised in toto and sent for histopathology reporting. The final diagnosis suggested it to be compact osteoma. Postsurgical recovery was uneventful and 3 months follow-up revealed no evidence of recurrence.

DISCUSSION

Osteoma is a benign osteogenic neoplasm composed of well-differentiated mature bone tissue. Osteomas are mainly tumours of craniofacial bone, rarely affecting the extragnathic skeleton, although cases of soft-tissue

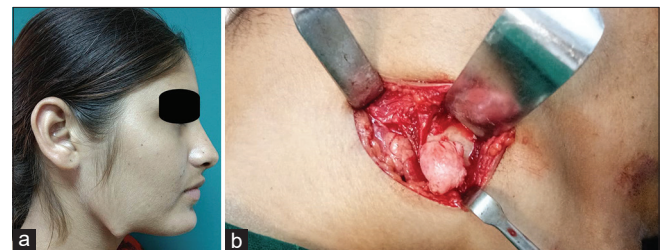


Figure 2: (a) Extraoral large swelling at right mandibular posterior region. (b) Intraoperative surgical site

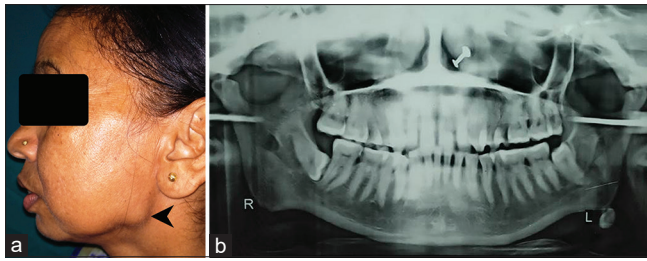


Figure 3: (a) Extraoral swelling at left mandibular posterior region. (b) Orthopantomogram showing one radiopaque mass at the left angle of the mandible

osteoma arising within the bulk of skeletal muscles have been reported.^[6]

In the present case series, none of the cases were due to trauma or muscle traction along the lateral surface of the mandibular ramus, which has no muscle attachment. As osteoma may remain asymptomatic for years, they are usually diagnosed when they enlarge or are discovered accidentally when diagnostics is carried out because of other health concerns. In case 1 and case 2 reported above, the swelling was accidentally discovered when they were taking photographs and during routine activities. Case 3 had mild intermittent pain.

The differential diagnoses may include peripheral ossifying fibroma, exostoses, sessile osteochondroma, osteoid osteoma, periosteal osteoblastoma, and parosteal osteosarcoma. In all the three cases, it was noted that swelling was well localized, slowly growing, bony hard in consistency and fixed to the bone with little or no pain at all and with no other comorbidities such as a decayed tooth or any inflammatory reaction in the region as well no history of trauma. All this leads to the diagnosis of peripheral osteoma.

Small-sized osteomas are usually kept under observation; surgical excision is the treatment of choice when it causes disfigurement and functional disability.^[9] Usually, the intraoral route is preferred because of cosmetic concerns; however, in the cases presented above, 3D-CT clearly showed the location of the lesion near the inferior border of the mandible, making it challenging for the intraoral approach. An extraoral approach was chosen to gain proper access to the lesion, which further allows proper excision of the lesion. Literature showed that the extraoral surgical approach was used when lesion affected the angle of the mandible.^[9,10]

CONCLUSION

Peripheral osteoma is a rare swelling that is detected incidentally and is mostly asymptomatic. Swellings or

deformities in the head and region can be a point of concern for patients and clinicians as well. The aim of any surgical excision is to completely remove the lesion, which would be possible only when proper access is gained. Surgeons should thus consider taking an unconventional surgical approach when the cases demand. Appropriate use of imaging diagnostics plays a crucial role in diagnosis as well as surgical planning.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. Patient(s) have given their consent for their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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