

## Case Report

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# Peripheral Osteoma of the Mandibular Condyle

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A rare case of peripheral osteoma, which developed in the right mandibular condyle of a 27-year-old man, is presented. Condylectomy with reconstruction of the condyle using a rib graft and subsequent mouth opening exercise as well as orthodontic treatment were performed. Occlusion disharmony and facial asymmetry were substantially improved, with no sign of recurrence two years after surgery. Long-term post-operative care of mouth opening exercise is highlighted. Orthodontic treatment is also indicated for better results on occlusal function and facial appearance. Therefore, a team composed of interdisciplinary specialists such as dentist, oral & maxillofacial and chest surgeons is indispensable to successful treatment.

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### Key Words

condyle;  
mandible;  
osteoma

**O**steoma is a benign neoplasm resulting from a slow growth of both the cortical and cancellous bones.<sup>1</sup> The most common sites for development of an osteoma are the flat bones of the skull. It is uncommon for an osteoma to develop in the mandible or maxilla. In the maxillofacial region, it most frequently occurs in the mandible.<sup>2</sup> Further, it can occur centrally (endosteal) or peripherally (subperiosteal).<sup>3</sup> Peripheral osteoma typically arises at the inferior border of the mandibular body.<sup>2</sup> A review of the English-language literature reveals only six reported cases of peripheral osteoma of the mandibular condyle with histological confirmation.<sup>4-9</sup> A further case with the emphasis of successful management achieved by a team of interdisciplinary specialists is described in this report.

### CASE REPORT

A 27-year-old man presented to our institution with the complaints of malocclusion and facial asymmetry, extant for about five years. Further, the patient had experienced difficulty in opening his mouth, and pain over the right temporomandibular joint (TMJ) area. The first clinical examination was performed by an ENT practitioner, and a tentative diagnosis of TMJ dysfunction was made. Medication was then prescribed for several months, but the patient's condition did not improve. The patient was then referred to our institution for subsequent treatment.

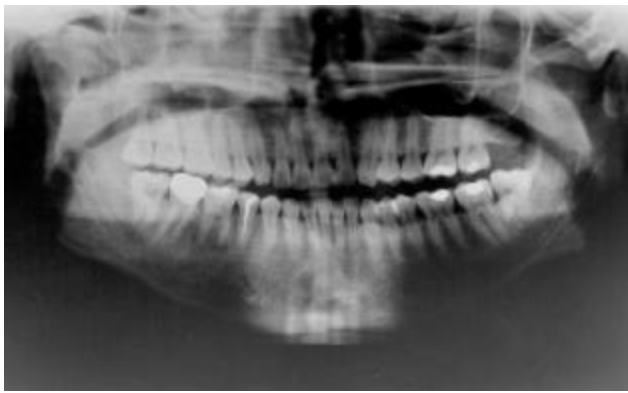
At the initial examination, a leftward mandibular deviation of about 8 mm was found. The interincisal distance was 24 mm. There was no swelling of the lateral as-

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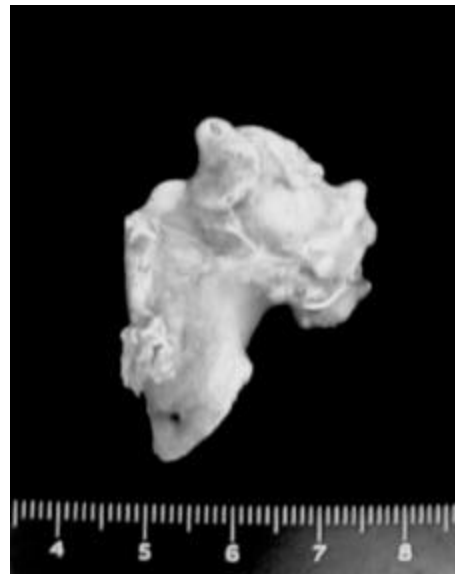


**Fig. 1.** Panoramic radiograph revealing a lesion appearing as a bone like opacity in the right mandibular condyle.



**Fig. 2.** Axial computed tomography revealed a bone like mass in contact with the medial pole of the right condyle.

pect of the right TMJ area. In addition, two episodes of trauma (from motorcycle accident and falling down stairs) to the right side of the face were noted, both occurring about ten years previously. However, no facial bone fractures were sustained on either occasion. On the panoramic radiograph, a bonelike, radiopaque, irregular shaped lesion was found at the right mandibular condyle (Fig. 1). Axial computed tomography revealed a bone-like mass in contact with the medial pole of the right condyle (Fig. 2). A bone tumor was suspected on the basis of the radiographic findings. The patient was subsequently referred to an oral & maxillofacial surgeon for further treatment. Under general anesthesia, a right retromandibular approach (Ridson incision) was used. This was then followed by division of the platysma muscle with preservation of the mandibular branch of the fa-

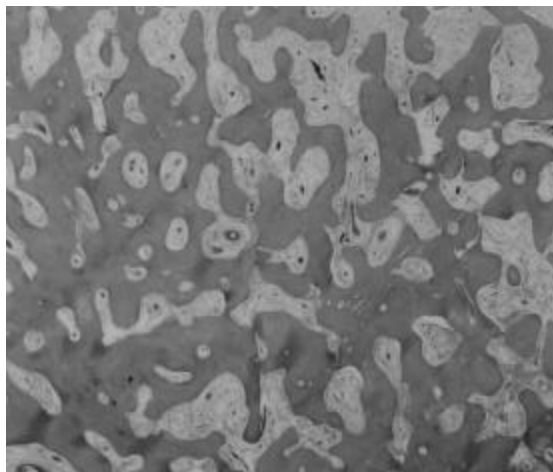


**Fig. 3.** On gross examination, the irregular surface of the tumor was covered with soft tissue.

cial nerve. The masseter muscle and its underlying periosteal attachments were sharply divided. The lateral aspect of the ramus and sigmoid notch were then noted. Condylectomy of the right condyle was performed. A rib graft (right seventh rib) was subsequently harvested by a chest surgeon, and fixed to the lateral cortex of the ascending ramus with wires and placed into the glenoid fossa. The primary retromandibular incision was closed, with an arch bar placed for intermaxillary fixation. Post-operative course of the surgical wound was uneventful, however, trismus with an interincisal distance of 20 mm was noted after removal of the intermaxillary fixation. Then, the patient was placed on an active physiotherapy program of mouth opening exercise. Furthermore, anterior and posterior open bite with only contact between bilateral upper and lower second molars were complained. Therefore, orthodontic treatment to correct the occlusion and improve the chewing function was performed. Three months after surgery, the interincisal distance had increased to 31 mm.

About two years after surgery, the occlusion disharmony and facial asymmetry were substantially improved, with no sign of recurrence. Temporomandibular joint function was satisfactory, and the interincisal distance was maintained at 36 mm.

The surgical specimen was submitted to the oral pa-



**Fig. 4.** Hematoxylin and eosin (HE) stain of the decalcified specimen revealing bony trabeculae composed of dense bone (HE  $\times 100$ ).

thology laboratory. On gross examination, the tumor measured 28 mm  $\times$  10 mm in diameter, and its irregular surface was covered with soft tissue (Fig. 3). On section of the tumor, whitish color and hard consistency were noted. Histological sections of the decalcified specimen were examined, revealing bony trabeculae composed of dense bone (Fig. 4). The diagnosis of osteoma of the right mandibular condyle was then rendered.

## DISCUSSION

Only seven cases of peripheral osteoma arising in the condylar process of the mandible (including the current case) have been reported in the English-language literature.<sup>4-9</sup> In summary of these reported cases, most of the patients were male, with a male-to-female ratio of 5:2. The most frequent clinical manifestation, noted in all of these cases including the present one, was pain over or near the auricular region.<sup>4-7</sup> Facial asymmetry<sup>6,9</sup> and trismus<sup>7,9</sup> were experienced by three of the patients, while facial swelling was a complaint for three,<sup>4,5,8</sup> with these complaints also noted for our patient. Further, trauma history was noted in three of the seven cases.<sup>4,8</sup> Histologically, compact-type osteomas consisted primarily of dense lamellar bone<sup>4,5,7,8</sup> while cancellous-type osteomas had an abundance of bone marrow.<sup>6</sup>

Tumor resection is recommended for most peripheral

osteomas;<sup>4,5,8,9</sup> however, for treatment of large osteomas, including the present case, condylectomy is indicated.<sup>6,7</sup> Furthermore, it is emphasized that simple resection of the condyle and osteoma without repair is not an ideal surgery. For patients who undergo condylectomy, surgery should permit reconstruction of the mandibular condyle.<sup>10</sup> In order to achieve a successful reconstruction, cooperation with a chest surgeon (as in the current case) is of utmost necessity. Moreover, long-term post-operative care of active physiotherapy program of mouth opening exercise is recommended. Orthodontic treatment is also indicated for adequate occlusal function and facial appearance. Therefore, as shown in the present case, a team composed of interdisciplinary specialists such as dentist, oral & maxillofacial and chest surgeons is indispensable to successful treatment. Although recurrence of this tumor would not be expected, one case of a recurrent peripheral osteoma after surgical removal has been reported.<sup>11</sup>

Clinically, condylar osteoma can be found singly or as multiple tumors. Multiple osteomas are a feature of Gardner's syndrome, a symptom complex in which these tumors are seen in association with intestinal polyps. A case of condylar osteoma associated with Gardner's syndrome has been reported.<sup>12</sup> Therefore, as an osteoma is encountered clinically, it is important to investigate whether multiple tumors are present.

Finally, most patients with discomfort near the auricular area may first visit an ENT practitioner (as in the present case) to seek alleviation for their symptoms. Therefore, it is essential that these doctors make the correct diagnosis, and preferably refer the patients to a dental department for further examination and treatment.

## REFERENCES

1. Lucas RB. *Pathology of tumors of the oral tissues*. 4th ed. Edinburgh, Scotland: Churchill Livingstone, 1984:191.
2. Kragh LV. Bone tumors of the jaws. In: Gorlin RJ, Goldman HM, eds. *Thomas's Oral Pathology*. 6th ed. St Louis, Mosby, 1970:560.
3. Schneider LC, Dolinsky HB, Grodjesk JE. Solitary peripheral osteomas of the jaws: report of case and review of the literature. *J Oral Surg* 1980;38:452-5.
4. Nelson DF, Gross BD, Miller FE. Osteoma of the mandibular

- condyle: re port of a case. *J Oral Surg* 1972;30:761-3.
5. MacLennan WD, Brown RD. Osteoma of the man di ble. *Br J Oral Surg* 1974;12:219-24.
  6. Wang-Norderud R, Ragab RR. Osteoma of the man dib u lar condyloid pro cess: case re port. *Scand J Plast Reconstr Surg* 1976;10:77-81.
  7. Papavasiliou A, Sawyer R, Lund V, Mi chaels L. Be nign con di tions of the temporomandibular joint: a di ag nos tic di lemma. *Br J Oral Surg* 1983;21:222-8.
  8. Bessho K, Murakami K, Iizuka T, Ono T. Osteoma in man dib u lar condyle. *Int J Oral Maxillofac Surg* 1987;16:372-5.
  9. Konadoh T, Seto K, Kobayashi K. Osteoma of the man dib u lar condyle: re port of a case with a re view of the lit er a ture. *J Oral Maxillofac Surg* 1998;56:972-9.
  10. Zhang X, Wang X, Wu J. Sur gi cal treat ment of the condylar osteoma. *Zhonghua Kou Qiang Yi Xue Zhi* 1997;32:331-4.
  11. Bosshardt L, Gordon RC, Westerberg M, Mor gan A. Re cur rent pe riph eral osteoma of man di ble: re port of case. *J Oral Surg* 1971;29:446-50.
  12. Lew D, DeWitt A, Hicks RJ, Cacalcanti MGP. Osteomas of the condyle as so ci ated with Gardner's syn drome caus ing lim ited mandibular move ment. *J Oral Maxillofac Surg* 1999; 57:1004-9.