

Osteoma: A Rare Case Report

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ABSTRACT

Background: Osteomas are relatively rare in the jaws. The causes of these lesions are unknown, although trauma, infection, and developmental abnormalities have been suggested as contributing factors. To the best of our knowledge, only 13 cases of osteomas of the condyle have been reported in literature. Here we report a rare case of osteoma of the left condyle in a 41-year-old male. He had facial asymmetry, deviation of the mandible to the unaffected side, and reduced mouth opening. Considering the patient's history and clinical features, a provisional diagnosis of bony ankylosis was considered. This case highlights the importance of performing a detailed examination in patients presenting with limited mouth opening caused by uncommon conditions such as osteomas of the condyle..

Keywords: Limited mouth opening, mandibular condyle, osteomas.

INTRODUCTION

An osteoma is a benign osteogenic tumor characterized by compact or cancellous bone proliferation. It may be classified as peripheral, central, or extraskeletal. A peripheral osteoma arises from the periosteum, a central osteoma from the endosteum, and an extraskeletal osteoma in the soft tissue¹⁻⁴. The pathogenesis of osteomas is not completely known. They are referred to developmental anomalies, true neoplasms, or reactive lesions triggered by trauma, muscle traction, or infection⁴.

Osteoid osteoma can occur anywhere and can involve either a single bone or several bones. Osteoid osteoma is reported to occur in the cortex of the shafts of long bones in 80-90% of cases. Osteomas are found mainly in the craniofacial bones. A peripheral osteoma (PO) occurs most frequently in the paranasal sinuses. Other locations include the orbital wall, temporal bone, pterygoid processes, and external ear canal^{1,4,5-7}.

Computed tomography is an excellent imaging method to identify the central nidus of the tumor and can also be utilized for treatment, as a guidance for percutaneous removal of the nidus, as described by the article developed by Petrilli et al⁸. It is important to observe that in some cases, the osteoid osteoma nidus cannot be appropriately individualized at conventional imaging methods such as radiography and computed tomography, which makes the diagnosis more difficult⁹⁻¹¹. Because the osteomas may be seen in the earlier stage of Gardner's syndrome, the dentists may play an important role in the diagnosis of colonic polyposis. The purpose of this paper is to present a large peripheral osteoma originating from the buccal surface of the mandible and causing asymmetry in a 37-year-old woman.

CASE REPORT

A 41-year-old man was referred to the Oral Diagnosis and Radiology Department with a complaint of facial and intraoral swelling on the

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posterior buccal aspect the left-side mandible (Fig 1). He had been aware of the slow but steady increase in the size of the lesion over the past six years. The lesion was not associated with pain, and there was no problem with mouth-opening or chewing.

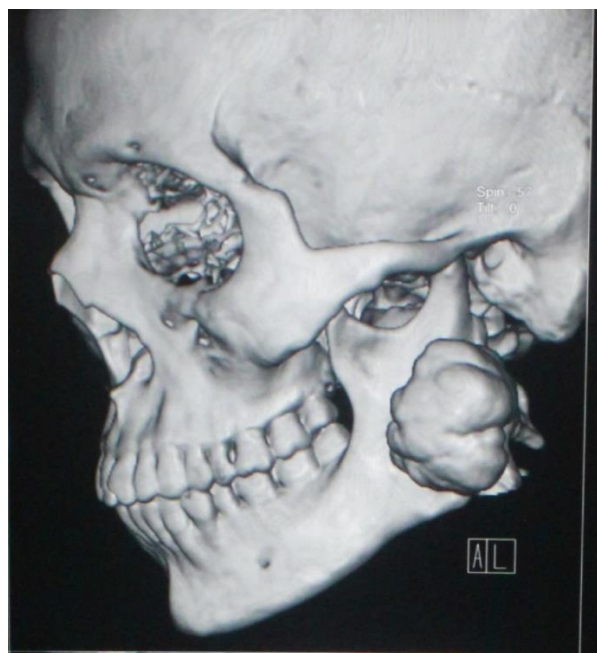


Fig 1: CT Scan shows the swelling at angle of mandible on the left side.

The real challenge was to remove the lesion on medial and distal surface of Condyle. So, we planned to do osteotomy and swing open the mandible like opening the door and then shutting it back hence, we planned a Sigmoid Swing. We did step osteotomy only in buccal cortex - vertical down from Sigmoid (5-6 mm), horizontal back from that lower part (7-8 mm), vertical down (10-11 mm) and horizontal back up to posterior border of ramus. Then we adapted the bone Plates and marked the fixing screw points and drilled it, but didn't fixed the plates. Once done, we finished the lingual cortex osteotomy and then placed the fragment back to original position and just placed the plates and screws in already drilled bone and fixation was simply finished in 5 mins without and discrepancy (Fig 2). Then swung the condyle fragment and removed the lesion.



Fig 2: Fragment placed back to original position and plated with screws.

The patient presented for a postoperative visit and suture removal a week later, and the healing was progressing normally. There were no postoperative complications. The surgical specimen was submitted for histopathological examination. The histopathologic diagnosis confirmed the clinical diagnosis of peripheral osteoma.

DISCUSSION

Osteoid osteoma is the third most common benign neoplasm of bone, occurring predominantly in young, male patients. In most of cases, the patients report inflammatory-like pain that worsens at night and is alleviated with the use of nonsteroidal anti-inflammatory drugs. Osteoid osteoma is classically characterized at conventional radiography or computed tomography as a well defined lytic area representing the vascularized central nidus, surrounded by sclerosis and cortical thickening. Computed tomography is an excellent imaging method to identify the central nidus of the tumor and can also be utilized for treatment, as a guidance for percutaneous removal of the nidus, as described by the article developed by Petrilli et al. and published in the present issue of Radiologia Brasileira. The authors have evaluated computed tomography-guided percutaneous trephine removal of the nidus in 18 cases of osteoid osteoma, demonstrating that this is a safe and effective method for surgical resection of the lesion with reduced hospitalization time and less postoperative pain.

Osteomas real prevalence is unknown. Sondergaard et al.¹³ in their study demonstrated that the

prevalence of osteoma in 50 patients with ulcerative colitis is 4% and 2% in the control group. It has been reported that osteomas have no sex predilection^{2, 12}. Osteoma of the jaws are very rare to find. These lesions are more frequently seen in the mandible than the maxilla. Sayan et al.⁴ reported finding 22.85% of the lesions in the mandible and 14.28% in the maxilla in their study; also, Kaplan et al.² reported that 81.3% of cases occurred in the mandible, Chaurasia and Balan¹² reported 83%, and Woldenberg et al.⁶ reported 64%. The most common location is lower border of the body. Rarely, as in our case, the lesions are located on the buccal aspect of the body of the mandible.

Considering that most tumors tend to replace the fatty and hematopoietic marrow components, the nidus of the osteoid osteoma may present with persistent signal intensity at out-of-phase sequences as compared with in-phase images. On the other hand, the decrease in signal intensity at out-of-phase sequences as compared with in-phase images would indicate the presence of fat and water in the bone marrow, which would indicate a lower probability of the presence of a neoplasm¹⁴.

Osteomas involving the condylar head can be difficult to differentiate from osteochondromas, osteophytes, or condylar hyperplasia, and those involving the coronoid process may be similar to osteochondromas. Smaller endosteal osteomas are difficult to diagnose, if not impossible to differentiate from condensing osteitis or from idiopathic osteosclerosis. Patients with osteomas should be evaluated for Gardner's syndrome. Osteoma resulting in facial asymmetry and malocclusion may require condylotomy, whereas for small, asymptomatic lesions, periodic observation is necessary. In the present case, condylotomy was done for normal functioning of the mandibular jaw and no recurrence was reported after 6 months follow-up.

CONCLUSION

Osteoma of the condyle is a rare, benign, bony growth that may cause painless restriction in mouth opening. It should be considered as one of the possible etiologies in patients with limited mouth opening. Early diagnosis and surgical excision of this osteogenic lesion helps in alleviating subsequent facial asymmetry. Even though

recurrence is rare, it is appropriate to provide both periodic clinical examination and radiographic follow-up after the surgical excision of such lesions.

CONFLICTS OF INTEREST

The authors declare they have no potential conflict of interests regarding this article.

REFERENCES

1. N. Larrea-Oyarbide, E. Valmaseda-Castellón, L. Berini-Aytés, and C. Gay-Escoda, "Osteomas of the craniofacial region. Review of 106 cases," *Journal of Oral Pathology and Medicine*, vol. 37, no. 1, pp. 38–42, 2008.
2. I. Kaplan, Z. Nicolaou, D. Hatuel, and S. Calderon, "Solitary central osteoma of the jaws: a diagnostic dilemma," *Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology and Endodontology*, vol. 106, no. 3, pp. e22–e29, 2008.
3. I. Kaplan, S. Calderon, and A. Buchner, "Peripheral osteoma of the mandible: a study of 10 new cases and analysis of the literature," *Journal of Oral and Maxillofacial Surgery*, vol. 52, no. 5, pp. 467–470, 1994.
4. N. B. Sayan, C. Üçok, H. A. Karasu, and Ö. Günhan, "Peripheral osteoma of the oral and maxillofacial region: a study of 35 new cases," *Journal of Oral and Maxillofacial Surgery*, vol. 60, no. 11, pp. 1299–1301, 2002.
5. A. M. Alicia and J. L. Daniel, "Extensive osteomas of the temporal-parietal-occipital skull," *Outology and Neurotology*, vol. 32, no. 1, pp. e3–e4, 2011.
6. Y. Woldenberg, M. Nash, and L. Bodner, "Peripheral osteoma of the maxillofacial region. Diagnosis and management: a study of 14 cases," *Medicina Oral, Patología Oral y Cirugía Bucal*, vol. 10, supplement 2, pp. E139–E142, 2005.
7. I. Peña González, S. Llorente Pendás, C. Rodríguez Recio, L. M. Junquera Gutiérrez, and J. C. De Vicente Rodríguez, "Cranio-facial osteomas: report of 3 cases and review of the literature," *Revista Espanola de Cirugia Oral y Maxilofacial*, vol. 28, no. 5, pp. 301–306, 2006.
8. Petrilli M, Senerchia AA, Petrilli AS, et al. Computed tomography-guided percutaneous

trephine removal of the nidus in osteoid osteoma patients: experience of a single center in Brazil. *Radiol Bras.* 2015;48:211–215.

9. Biebuyck JC, Katz LD, McCauley T. Soft tissue edema in osteoid osteoma. *Skeletal Radiol.* 1993;22:37–41.

10. Ehara S, Rosenthal DI, Aoki J, et al. Peritumoral edema in osteoid osteoma on magnetic resonance imaging. *Skeletal Radiol.* 1999;28:265–270.

11. Costa FM, Canella C, Gasparetto E. Advanced magnetic resonance imaging techniques in the evaluation of musculoskeletal tumors. *Radiol Clin North Am.* 2011;49:1325–1358.

12. A. Chaurasia and A. Balan, “Peripheral osteomas of jaws—a study of six cases,” *Kerala Dental Journal*, vol. 32, no. 1, pp. 23–26, 2009.

13. S. Y. An, C. H. An, and K. S. Choi, “Giant osteoma of the mandible causing breathing problem,” *Korean Journal of Oral and Maxillofacial Radiology*, vol. 36, no. 4, pp. 217–220, 2006.

14. Zajick DC, Jr, Morrison WB, Schweitzer ME, et al. Benign and malignant processes: normal values and differentiation with chemical shift MR imaging in vertebral marrow. *Radiology.* 2005;237:590–596.