



Case Report

Surgical excision of buccal maxillary exostosis: A case report

Ria Sahay^{1*}, Amitabh Srivastava¹

¹Dept. of Periodontology, Sardar Patel Post Graduate Institute of Dental and Medical Sciences, Lucknow, Uttar Pradesh, India.

Abstract

Large, benign surface growths called buccal exostosis usually develop on the outer or facial surface of the maxilla and/or mandible in the premolar and molar regions. They are avascular in nature and made of compact, thick cortical bone. Although the exact reason is still unknown, it has been hypothesized that abnormally high masticatory stresses on the teeth may be the cause of the bone expansion. This article describes a case of buccal maxillary exostosis and how surgical excision was used to treat it.

Keywords: Bony exostosis, Buccal exostosis, Surgical excision, CBCT

Received: 10-12-2024; **Accepted:** 14-01-2025; **Available Online:** 25-04-2025

This is an Open Access (OA) journal, and articles are distributed under the terms of the [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License](https://creativecommons.org/licenses/by-nc-sa/4.0/), which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: reprint@ipinnovative.com

1. Introduction

In tori, exostosis, fibrous dysplasia, cherubism, central giant cell granuloma, ameloblastoma, osteoma, and osteosarcoma, the bone adjacent to the gingival area enlarges. There may be unrelated inflammatory changes in the gingival tissue, or it may appear normal.¹

Though localized overgrowths of bone (exostosis) are more common, real benign non-odontogenic tumours made of bone (either compact or cancellous) are occasionally observed in the head and neck region.² Depending on the location and extent, it is typically found along the alveoli or on the hard palate. It can be categorized as buccal, lingual maxillary exostosis, torus mandibularis (TM), or torus palatinus (TP).³ Glickman and Smulow distinguished between two categories of buccal alveolar bone enlargement: lipping and exostosis. They regarded it as buttressing bone development in response to occlusion-related damage, however their cause is uncertain. They proposed that this type of bone creation takes place in order to reinforce bony trabeculae for functional adaptation.⁴

The overlying mucosa seems normal, albeit stretched and undamaged. The mucosa may develop ulcers as a result

of trauma or other injuries. They often form in adolescence and may progressively grow larger over time.

It is possible to view buccal exostosis as painless, self-limiting bony masses. An adjacent tooth's periodontal disease may be exacerbated by the larger size. Too far, the cause of tori has not been identified. The most likely causes include masticatory hyper function, environmental influences, genetic factors, and ongoing jaw bone growth.³ This case report describes the presence of maxillary buccal exostosis and how it was effectively treated.

2. Case Report

A 32-year-old male patient reported to the Department of Periodontology and Oral Implantology, Sardar Patel Post Graduate Institute of dental and medical sciences, Lucknow with the chief complaint of pain in right upper buccal posterior region while brushing since 1 month. The patient's dental and medical history was obtained, and it revealed that the patient had experienced seizures since the age of three, for which no medication had been administered, and that the last seizure episode had happened at the age of fourteen. He had no known drug allergies, and was not on any prescription drugs. There was no history of tobacco or alcohol usage also.

*Corresponding author: Ria Sahay
Email: riasahay2015@gmail.com

The intraoral examination revealed the presence of a unilateral, single, oval swelling in right maxillary posterior region (tooth no.#15 #16). **Figure 1** On palpation, firm, raised, non-tender protuberance was diagnosed. To establish the existence of a radiopaque mass along the middle thirds of the roots of the maxillary second premolar and first molar on the right side, an intraoral periapical radiograph was taken **Figure 2**, and no radiolucency or radiopacity was seen.



Figure 1: Intraoral view



Figure 2: IOPA radiograph of #15, #16

CBCT was then advised and revealed the presence of radiopaque mass on buccal aspect of maxillary posterior region (#15, #16) suggestive of bony exostosis. (**Figure 3**)

After obtaining the informed consent from the patient, the case was taken up for Phase 1 therapy with complete ultrasonic scaling followed by Blood investigations and Phase 2 therapy (Surgical phase) was planned. Crevicular incision was made, **Figure 4** after administering the proper local anaesthetic, and a full-thickness mucoperiosteal flap was reflected to provide access to the exostosis.

Figure 5 Under constant saline irrigation, the bony growth was removed with a bone-cutting carbide bur, No. 702 SS white bur. (**Figure 6A,B**) Granulation tissue was curetted and the rough surface was smoothed using a bone file. After thoroughly cleaning the surgical site with a saline solution, the flap was positioned, sutured with 3-0 silk, and a periodontal dressing placed **Figure 7**.



Figure 3: CBCT of #15, #16



Figure 4: Crevicular incision



Figure 5: Exostosis on buccal aspect

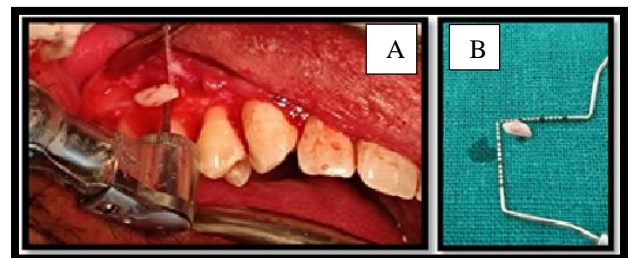


Figure 6: A) Removal of exostosis under saline irrigation, B) Excised exostosis

Postoperative instructions were given. Analgesic aceclofenac 100 mg with paracetamol 325 mg every 8 hours for three days, together with a systemic antibiotic 500 mg amoxicillin, were prescribed. After one week, the patient was called back for suture removal, and at one, three, and six months, he was called back for additional postoperative follow up (**Figure 8A,B and C**).



Figure 7: Suture with periodontal dressing

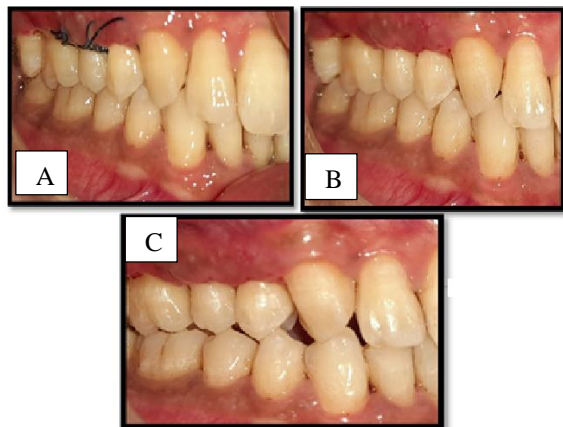


Figure 8: A) Suture after 1 week, B) After 1 month and C) After 6 months

3. Discussion

Buccal exostosis are benign growths with minimal clinical importance.⁴⁷ These are numerous, frequently bilateral bone protuberances that emerge from the jaw and/or maxilla. There are various forms of buccal exostosis, which are often categorized based on their location. "Tori" is the term used to describe the two most prevalent types: A sessile, nodular bony mass commonly seen on the midline of the hard palate is the torus palatinus, whereas the torus mandibularis is a bony protuberance on the lingual aspect of the jaw in the canine and premolar region.⁶ In all intraoral regions, the male population is more affected than the female population (1.66:1), with the maxilla displaying the highest prevalence rate (5.1:1) when compared to the mandible.⁷

Although the cause of the numerous exostosis is uncertain, it has been proposed that they result from a mild, persistent periosteal inflammation.⁵ Exostosis may serve as a buttress, supporting the alveolar process and preventing excessive occlusal force. In 1965, Glickman and Smulow introduced the idea of buttressing bone growth with their work. On both the tension and compression sides of teeth that had undergone occlusal stress, the external surface of the alveolar ridge of three specimens (two rhesus monkeys and one human) showed new bone formation. This suggested that bone trabeculae reinforcing was the cause of this bone production.⁸ The clinical correlation between strong chewing

forces, thick masseter muscles, occlusal wear facets, buccal alveolar exostosis, and tori is also validated by Agrawal N *et al.*⁹ In genetically predisposed populations, exostosis may therefore occur as a result of the altered function.⁷ Burkes *et al.* described the clinical and radiographic results of nine individuals with bone development in the posterior mandibular edentulous region, covered by a pontic. They suggested that the causes of this bone growth could be functional stressors, chronic irritation, and genetic predetermination.¹⁰

Exostosis should be distinguished from periosteal osteosarcoma, chondrosarcoma, mature ossifying fibroma (expanding cortical lamina), compact osteoma, cancellous osteoma, osteochondroma, and organized sub periosteal hematoma. Osteomas are benign developing tumours that cause dense, compact, or coarse cancellous bone to proliferate, commonly in the periosteum or endosteal region.¹¹ The findings of the CBCT, radiography, and clinical examination support the diagnosis of buccal exostosis.³ Radiographs show maxillary vestibular buccal exostosis as rounded opacities covering the tooth root at the base of the maxillary sinuses. Nodular lesions made up of well-differentiated normal bone with trabecular and cortical bone can appear on CT scans when the maxillary and/or mandibular facial aspects are examined.⁶ Treatment is not necessary for either the torus or the bone exostosis unless they get large enough to compromise with function, denture implantation, or cause repeated traumatic surface ulcers (usually from sharp food).¹²

In this case, the exostosis made brushing painful, thus the bony mass might be cut off through the base of the lesion or sliced away with a bone-cutting bur.⁷

4. Conclusion

This case report illustrates a unique and rare occurrence of exostosis that made brushing difficult on the buccal side of the maxillary premolar-molar region. An exostosis excision was done surgically. Before giving their informed permission, the patient had a full understanding of the treatment; it was conducted successfully, and the patient was happy with the outcome. Following a thorough clinical examination, differential diagnosis, and investigations, exostosis excision can be accomplished surgically.

5. Source of funding

None.

6. Conflict of Interest

None.

References

1. Chandna S, Sachdeva S, Kochar D, Kapil H. Surgical management of the bilateral maxillary buccal exostosis. *J Indian Soc Periodontol.* 2015;19(3):352–5.

2. Tamrakar AK, Ahmad SA, Rathee M. Surgical removal of palatal bony exostosis: A case report. *Ann Dent Spec.* 2014;2(3): 110–1.
3. Siddiqui H, Singh DK, Mishra S, Mandal A. Bilateral buccal exostosis evaluated by cone-beam computed tomography: A rare accidental finding. *Indian J Dent Sci.* 2017;9(1):34–7.
4. Smitha K, Smitha GP. Alveolar exostosis - revisited: A narrative review of the literature. *Saudi J Dent Res.* 2015;6(1) 67–72.
5. Medsinghe SV, Kohad R, Budhiraja H, Singh A, Gurha S, Sharma A. Buccal exostosis: A rare entity. *J Int Oral Health.* 2015;7(5):62–4.
6. Dion B, Coulier B. Multiple maxillar exostosis. *J Belg Soc Radiol.* 2019; 103(1):25.
7. Rani A, Poswal R. Rare Case of Buccal Exostosis in Edentulous Mandibular Body Region. *J Orofac Res.* 2015;5(2):65–7.
8. Mishra I, Vijayalaxmi N, Ramaswami E, Jimit D. Bony Exostoses: Case Series and Review of Literature. *Acta Sci Dent Sci.* 2018;2(10):64–7
9. Agrawal N, Kallury A, Agrawal K, Nair PP. Alveolar bone exostoses subsequent to orthodontic implant placement. *BMJ Case Rep.* 2013; 2013:bcr2012007951
10. Burkes EJ, Marbry DL, Brooks RE. Subpontic osseous proliferation. *J Prosth Dent.* 1985;53(6):780–5.
11. Kashima K, Rahman OI, Sakoda S, Shiba R. Unusual peripheral osteoma of the mandible: Report of 2 cases. *J Oral Maxillofac Surg.* 2000;58(8):911–3.
12. Puttaswamaiah RN, Galgali SR, Gowda VS. Exostosis: A donor site for autograft. *Indian J Dent Res.* 2011;22(6):860–2.

Cite this article: Sahay R. Surgical excision of buccal maxillary exostosis- A case report. *IP Int J Periodontol Implantol.* 2025;10(1):44–7