

Management of Buccal Maxillary Exostoses: A Case Report

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ABSTRACT

Introduction: Dental caries remains a prevalent oral health issue in Indonesia, with *Streptococcus mutans* identified as the main causative agent. While 0.2% chlorhexidine is effective, its side effects highlight the need for natural alternatives. Green tea (*Camellia sinensis*, L) contains antibacterial compounds like catechins and flavonoids.

Introduction: Exostoses are benign, nodular, and asymptomatic bone growths originating from the alveolar cortical bone, most commonly found in the posterior region, particularly in the maxilla. The etiology of exostoses is multifactorial, including genetic factors, changes in bone metabolism, masticatory hyperfunction, and chronic irritation or pressure. These lesions are typically asymptomatic, require no intervention, and are frequently identified incidentally. Surgical excision is indicated when the exostosis precipitates recurrent trauma or impedes prosthodontic rehabilitation.

Objective: This case report aims to provide additional information on exostosis management and outcomes.

Case: A 40-year-old woman presented with a hard, painless lump on the right buccal maxillary gingiva, noticed when preparing for complete dentures. Clinical and radiographic examinations revealed a single nodule matching the surrounding tissue color, measuring 1 cm, with radiopaque features resembling cortical bone, and no history of systemic disease. The treatment plan involved alveolectomy to support successful complete denture fabrication.

Conclusion: This case demonstrates a benign, asymptomatic oral exostosis successfully managed surgically to facilitate prosthodontic treatment, with satisfactory results and no recurrence.

Keywords : Alveolectomy, Exostoses

INTRODUCTION

Oral buccal exostoses (OBEs) belong to the group of benign, nodular, and asymptomatic bone tumors formed by the excessive growth of dense cortical bone. These tumors typically involve the buccal or lingual cortical plate of the maxillary or mandibular alveolus.¹ Exostoses are single or multiple bone protuberances that occur less frequently than tori. These lesions are most commonly found in the posterior maxilla and mandible.² The maxilla shows a higher prevalence (8-51%) compared to the mandible (6-32%). They are found in approximately 3% of adults and are more common in men than women.¹

The literature delineates a multifactorial etiology encompassing hereditary factors, bone

metabolism changes, parafunctional habits, masticatory hyperfunction, and edentulism, which can alter alveolar bone metabolism.¹ Exostosis growth may result from bite irritation and pressure. Single exostoses are typically caused by friction factors such as ill-fitting dental prostheses or bruxism.³ No treatment is recommended for exostoses unless recurrent injury causes chronic inflammation.² If denture fabrication is required, surgical removal can maximize prosthesis retention and minimize the risk of pressure-related trauma.⁴

In this case report, a 40-year-old woman was diagnosed with unilateral buccal exostosis in the area of tooth 13. The treatment plan included complete denture fabrication with exostosis removal for optimal retention. An alveolectomy was performed using conventional scalpel techniques combined with a bur. This report aims to add information on exostosis management and outcomes.

RESULT

A 40-year-old female patient presented to the Dental and Oral Hospital, Palembang, South Sumatra, complaining of a lump inside the oral cavity on the right upper anterior gingiva. The Patient noticed it while planning for complete dentures and decided to have it remove to support treatment success.

Anamnesis and a clinical examination were conducted. The patient was in good general condition, with no history of allergies or systemic diseases. The extraoral examination showed normal face, eyes, neck, lips, lymph nodes, and temporomandibular joint. The intraoral examination (Fig. 1a) revealed edentulous maxilla and mandible with a single nodule on the buccal gingival mucosa in the edentulous area of tooth 13, approximately 1 cm in size, matching the surrounding tissue color, hard like bone on palpation, with a smooth, painless surface. The panoramic radiograph (Fig. 1b) showed a radiopaque density resembling normal cortical bone, continuous with the underlying alveolar bone without discontinuity.



Figure 1. (A) Intraoral Clinical Examination, (B) Panoramic Radiograph

TREATMENT PROCEDURE

Following the anamnesis and clinical examination, the operator explained the diagnosis of bone exostosis to the patient and planned an alveolectomy. Informed consent was obtained, and a vital signs assessment revealed an optimal systemic condition (blood pressure: 118/79 mmHg), no systemic diseases or anesthesia allergies, and the patient exhibited full cooperation throughout the examination.

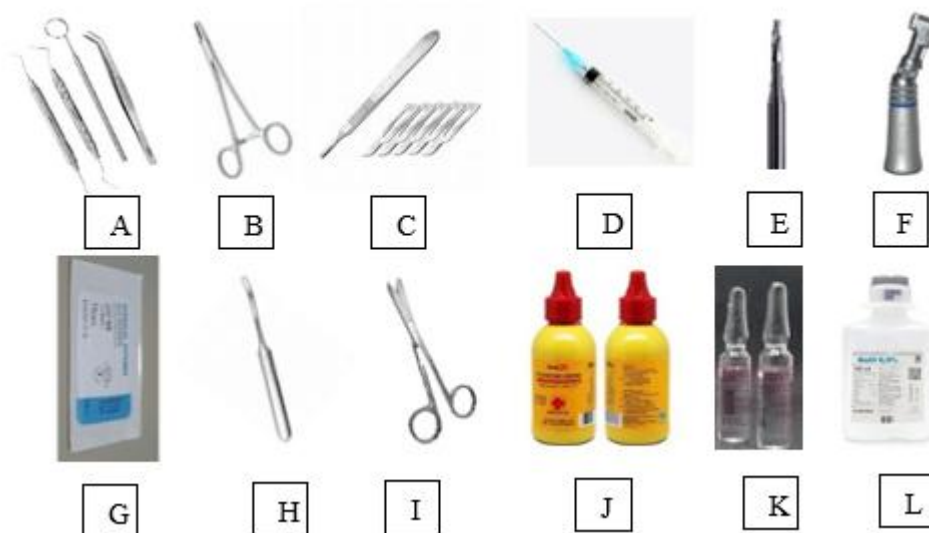


Figure 2. Instruments and Materials: (A) Diagnostic set (B) Needle holder (C) Scalpel no 3 and blade no 15 (D) 3 cc syringe (E) Carbide bur (F) Low-speed handpiece (G) Surgical suture (H) Raspatorium (I) Scissor stitch (J) Povidone iodine (K) Pehacaine (L) 0.9% NaCl Solution

The procedure began with asepsis using cotton pellets soaked in 10% povidone-iodine, followed by the application of topical anesthetic gel on the mucobuccal fold and hard palate for 2 minutes. Supraperiosteal infiltration anesthesia was administered (Fig. 3a). A triangular flap was created with a vertical oblique incision extending from distal to mesial horizontal along the lesion using scalpel and No. 15 blade (Fig. 3b). The flap was elevated with a raspatorium to fully expose the prominent bone (Fig. 3c, 3d). The lesion was removed using low-speed carbide bur until level with surrounding tissue (Fig. 4a), and then smoothed with bone file (Fig. 4b). Irrigation with 0.9% NaCl was performed with each instrument change. The flap was repositioned and sutured using a simple interrupted technique (Fig. 4c).

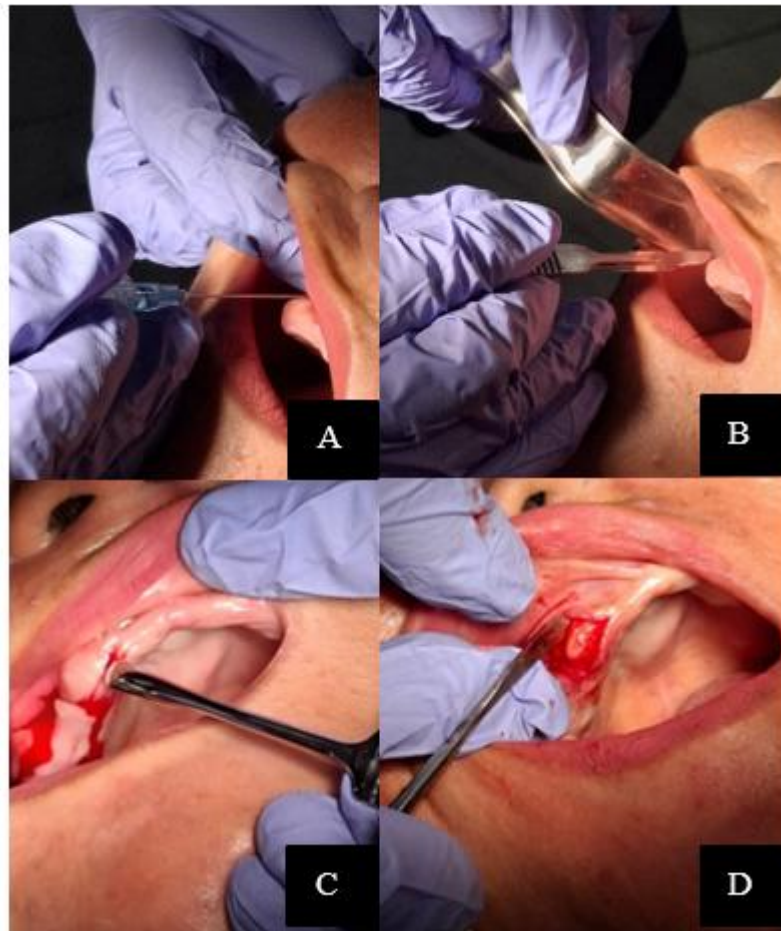


Figure 3. (A) Infiltration anesthesia on the right edentulous maxilla; (B) Incision; (C) Mucoperiosteal flap elevation with raspatorium; (D) Bone lesion

Postoperatively, antibiotics and analgesics were prescribed to be taken if needed. Instructions included avoiding hot/spicy foods, consuming a soft diet, refraining from sucking on the wound, and returning for a suture removal follow-up. One week post-surgery, the site showed excellent wound healing with no recurrence (Fig. 4d).

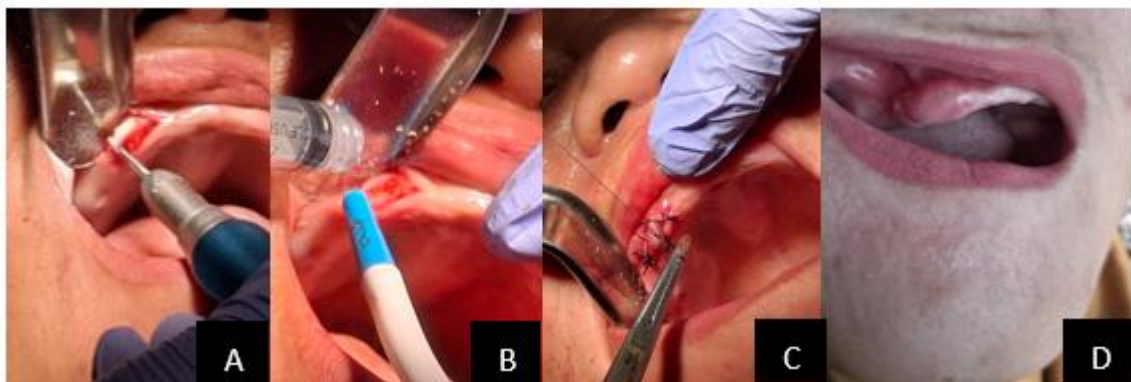


Figure 4. (A) Excision procedure; (B) Post-excision; (C) Flap repositioning and suturing; (D) 7-day follow-up.

DISCUSSION

Exostoses are benign bone growths commonly found in the alveolar ridge region, either buccally or palatally, and are generally asymptomatic.⁵ They are often discovered incidentally during routine clinical examinations or denture preparation, as in this case. Clinical features include hard bony nodules matching the surrounding tissue color with a smooth surface, characteristic of exostoses.⁶ They are painless and can slowly enlarge.⁷

The etiology of exostoses is not fully established. Mandibular torus, palatal torus, and exostoses may share similar underlying causes. Evidence supports multifactorial etiology, including genetic influences, masticatory hyperfunction, and ongoing jaw bone growth.⁸ Race, autosomal dominant factors, tooth attrition, and nutrition have been proposed.⁹ In this case, the patient's healthy profile, combined with the absence of skin or bone abnormalities or impacted unerupted teeth on the panoramic radiograph, suggests a genetic predisposition as the primary factor, given the edentulous maxilla. Panoramic radiography revealed no evidence of impacted or unerupted teeth, which is suggestive of genetic predisposition as the predominant etiological factor.

The differential diagnosis includes osteoma, a rare condition that mimics exostosis clinically, radiographically, and histopathologically. An osteoma is a progressive benign neoplasm of compact or cancellous bone from endosteal or periosteal surfaces, frequently associated with patients suffering from Gardner's syndrome who present with multiple bone growths outside typical sites, intestinal polyposis, and skin cysts or fibromas. A biopsy is advocated when diagnostic uncertainty persists to establish a definitive diagnosis.⁸ In this case, the absence of a systemic history, coupled with consistent clinical and radiographic findings definitively corroborated the diagnosis of oral exostosis.

Surgical management of alveolar exostoses is indicated for clinical symptoms or prosthodontic interference. Prominent exostoses impair denture base adaptation, reducing retention and stability.¹⁰ These osseous protuberances also augment the susceptibility of mucosal tissues to mechanical trauma and pressure-induced ulceration from prosthetic forces, thereby rendering surgical alveolar recontouring and smoothing imperative to attain an optimal bone morphology conducive to prosthodontic rehabilitation.¹¹

CONCLUSION

Exostoses are benign bone growths that are typically asymptomatic and incidentally found, as in this case. Clinical and radiographic features were consistent with oral exostosis

without systemic or syndromic signs. The etiology is likely multifactorial, with genetics being predominant in this edentulous maxilla case. Surgical management supported prosthodontic success by improving alveolar contour and denture adaptation, yielding satisfactory results with no recurrence at the 1-week follow-up.

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