Stomatologija. Baltic Dental and Maxillofacial Journal, 27: 43-5, 2025

Bilateral mandibular tori: A case report and review of literature

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SUMMARY

Objective. To present a case where bilateral mandibular tori complicated prosthetic rehabilitation and to discuss the etiology, clinical features and management of this anatomical variant based on a review of current literature.

Case Report. A 45-year-old female presented with gingival bleeding and lower anterior tooth mobility. Clinical and radiographic examination revealed chronic periodontitis, missing teeth (#35, #36, #37, #46) and bilateral, lobulated mandibular tori. The left torus was surgically removed under local anesthesia using a chisel and mallet to facilitate the fabrication of a removable partial denture. Postoperative healing was uneventful, with complete mucosal healing observed at one month. The prosthesis was subsequently delivered successfully.

Conclusions. While often asymptomatic, mandibular tori can impede prosthetic treatment. Surgical removal is a predictable procedure when indicated, leading to favorable functional and prosthetic outcomes. This case underscores the importance of interdisciplinary management in oral healthcare.

Keywords: mandibular tori, exostosis, pre-prosthetic surgery, oral surgery, case report.

INTRODUCTION

Mandibular tori are benign, non-neoplastic exostoses that develop from the lingual aspect of the mandible, most frequently in the premolar region superior to the mylohyoid ridge (1). Histologically, they consist of compact lamellar bone with occasional trabecular spaces and limited marrow content, reflecting a predominantly cortical structure (2). The overlying mucosa is thin and poorly vascularized, which increases susceptibility to trauma or ulceration from mechanical irritation (3).

The prevalence of mandibular tori shows wide geographic and ethnic variation, reported between 0.5% and 63.4% (1, 4). Higher rates have been documented among Asian and Inuit populations, suggesting a strong genetic contribution. Familial clustering and twin studies further support heritable influences, although environmental and functional factors also play significant roles (5). Chronic masticatory stress, particularly in individuals with bruxism, clenching habits, or heavy occlusal forces, has been associated with increased osteogenic activity in the mandibular cortex, possibly mediated through Wolff's law and local mechanotransduction pathways (6, 7).

Clinically, mandibular tori are characteristically bilateral, sessile or nodular and exhibit slow, progressive enlargement over years (8). They are generally asymptomatic and identified incidentally during intraoral examination or radiographic assessment. However, depending on size and location, they may cause discomfort, interfere with tongue movement, compromise oral hygiene, or complicate denture fabrication by limiting prosthetic flange extension (9,1 0).

Although treatment is not routinely indicated, surgical removal is warranted when the exostosis impedes prosthetic rehabilitation, contributes to chronic mucosal ulceration, causes speech or swallowing difficulties, or when the site serves as a potential donor source for autogenous bone grafting (11, 12). This case report presents the management of bilateral mandibular tori in a patient whose condition hindered prosthodontic restoration, followed by

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Fig. Intraoral photograph showing bilateral mandibular tori on the lingual aspect of the mandible in the canine-premolar region

a discussion on the etiology and therapeutic strategies for this anatomical variant.

CASE REPORT

A 45-year-old female presented to the clinic with a chief complaint of bleeding from the gums for the past seven months and mobility of the lower anterior teeth for the past four months. Her medical history was non-contributory.

Intraoral examination revealed gingiva that was bluish-red in colour, swollen and bled upon probing. The lower anterior teeth exhibited Grade I mobility with periodontal pocket formation. Teeth #35, #36, #37 and #46 were missing. Bilateral, lobulated bony hard swellings were noted on the lingual aspect of the mandible, consistent with mandibular tori. The right-sided torus extended from the canine to the second premolar region, while the left-sided torus extended from the canine to the first premolar. The overlying mucosa was thin but intact, with normal colour and consistency (Figure).

A preoperative panoramic radiograph confirmed the presence of dense, radiopaque bilateral projections on the lingual cortex of the mandible. Initial therapy involved scaling and root planing of the lower teeth to improve periodontal health.

After 10 days, following resolution of the acute gingival inflammation, surgical removal of the left mandibular torus was planned. Under local anesthesia (2% Lidocaine with 1:80,000 epinephrine; total volume 3.6 mL), a full-thickness mucoperiosteal flap was raised via a crestal incision extending from the distal of the left canine (tooth #33) to the mesial of the first molar (tooth #36 region), with vertical releasing incisions at both ends. The torus was fully exposed, revealing a lobular shape measuring approximately 15 mm in length, 8 mm in width and 4 mm in height. Surgical removal was accomplished using a surgical chisel and mallet, applying controlled force to fracture the torus at its base. The residual bone was smoothed with a round bur under copious saline irrigation. Hemostasis was achieved with direct pressure. The flap was repositioned and sutured with 3-0 black silk interrupted sutures. A Coe-pak periodontal pack was placed over the surgical site for protection.

Postoperative medications included amoxicillin 500 mg TID for five days, ibuprofen 400 mg TID for three days as an analgesic and anti-inflammatory and chlorhexidine mouthwash 0.12% BID for two weeks. The patient was instructed on a soft diet for one week and to avoid traumatic oral hygiene measures at the surgical site.

Sutures were removed after 10 days, at which point the surgical site showed satisfactory healing with minimal edema and no signs of infection. The patient reported minimal postoperative discomfort, well-controlled with the prescribed medication. She was followed up at one month, by which time the site had healed completely with healthy, keratinized mucosa and no complaints of altered sensation or functional impairment. Subsequently, a removable partial denture was fabricated and delivered to replace the missing teeth (#35, #36, #37, #46). The prosthesis seated comfortably without impingement on the healed surgical site.

DISCUSSION

The precise etiology of mandibular tori remains multifactorial, with genetic and environmental factors playing a role (5, 13). Environmental influences include masticatory stress, bruxism and clenching (6, 7). A strong genetic predisposition is widely suspected, with Eggen estimating a genetic component in approximately 29.5% of cases (14). The theory of functional adaptation is supported by a correlation between the presence of tori and the number of functional teeth, suggesting a response to biomechanical stress (15).

The prevalence of tori varies widely among populations. Globally, the incidence ranges from 0.5% to 63.4% for mandibular tori (1). They are more common in certain ethnic groups, including Asians and Inuit populations (16). Tori typically develop in the second or third decade of life, with an initial rapid growth phase that slows but may continue throughout life (17). Most studies indicate no significant sex predilection (13).

In this case, the bilateral tori were identified during a routine examination for periodontal complaints. The primary indication for surgical intervention was prosthetic, as the tori would have

prevented the proper extension and seating of the denture flange. The surgical approach using a chisel and mallet is a traditional and effective method for removing these dense cortical bony growths (2, 17). Careful flap design and copious irrigation are essential to minimize thermal injury and postoperative complications such as hematoma, dehiscence, or sensory disturbances to the lingual nerve (12).

The successful outcome in this case highlights the importance of a structured treatment sequence: initial periodontal therapy to establish a healthy oral environment, followed by pre-prosthetic surgery and finally prosthetic rehabilitation. This interdisciplinary approach ensures optimal functional and aesthetic results for the patient.

CONCLUSIONS

1. Mandibular tori, while benign and often asymptomatic, can present a significant obstacle to prosthetic dentistry.
2. Surgical removal is a safe and predictable procedure when indicated for prosthetic reasons, with a low complication rate and excellent healing potential.
3. A comprehensive treatment plan involving periodontics, oral surgery and prosthodontics is crucial for managing such cases effectively and achieving satisfactory long-term outcomes.

STATEMENT OF CONFLICTS OF INTEREST

The authors state no conflict of interest.

ACKNOWLEDGEMENTS

The authors would like to thank the patient for consenting to the publication of this case. We also acknowledge the support of the nursing and auxiliary staff at Mercy Multispeciality Dental Centre.

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Received: 26 05 2022
Accepted for publishing: 20 06 2025