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Case Report

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Large Lingual Tori: A Clinical Case Report [Version 1, 1 Accepted with Reservation]

Nikhil M Kurien*, Surej Kumar LK, Aravind S Nair, TT Sivakumar and Varun V Raghavan Pillai

Department of Oral and Maxillofacial Surgery, PMS College of Dental Science and Research, India

***Corresponding author:** Nikhil M Kurien, Department of Oral and Maxillofacial Surgery, PMS College of Dental Science and Research, Vattapara, Trivandrum, Kerala, India, Tel: 9567230826; Email: aravindsnair545@gmail.com

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Abstract

Mandibular tori are asymptomatic bony exophytic growths that are present on the lingual surface of the mandible, opposite to the premolars. These may present in a variety of shapes and forms and usually appear unilaterally. Tori presents with a multifactorial etiology. Surgical removal of torus is indicated when its presence interferes with function like mastication, deglutition, speech or fabrication of denture. We report a case of large unilateral mandibular torus and its management by surgical removal.

Keywords

Exostosis; Oral Tori; Mandibular Tori; Surgical Excision

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Introduction

Tori means “to stand out” in Latin. When multiple, small nodular protuberances appear on the alveolar bone, they are called exostosis. Specific variants of exostosis which develop on specific anatomic sites are named torus and when it occurs on the lingual surface of mandible opposite to mental foramen it is called torus mandibularis. Torus mandibularis is a benign localised, peripheral outgrowth of bone of unknown etiology which is asymptomatic in nature. These bony growths enlarge slowly usually above the mylohyoid line at the premolar and canine area and has a tendency for recurrence [1,2]. The tori usually present as well rounded, smooth-surfaced, hard, bony projections, covered with normal or blanched mucosa. They consist of lamellae of compact bone, but large lesions may have a core of cancellous bone. Generally, surgical resection is not required for mandibular torus, as long as the condition remains asymptomatic. Tori are usually removed when they interfere with speech, tongue positioning, prosthetic reasons, poor oral hygiene and traumatic ulceration of mucosal surface. Torus mandibularis presents many challenges when fabricating a complete denture for a patient. We report a case of unilateral mandibular torus.

Case Report

A 24 year old female patient presented to our department with the chief complaint of bony growth on left side inner aspect of lower jaw which kept growing to the present size and remained quiescent for the last 4 years. She had no other disturbances or irritation from the lesion. A medical and dental history was taken along with a thorough clinical examination which revealed a unilateral non tender bony hard swelling covered with normal mucosa. It was located in the lingual cortical plate above the mylohyoid ridge, extending from 33 to 36 region, measuring about 27×13×12mm.

Based on these findings, a clinical diagnosis of suspected mandibular torus was made, after which we planned a surgical excision of the mass under local anesthesia. All the medical investigations were done. To achieve profound local anesthesia, inferior alveolar, mental and lingual nerve blocks were administered. A crevicular incision was made along the lingual side of necks of teeth extending from canine to second molar. A full thickness mucoperiosteal flap was reflected carefully without tearing thin mucosa over the growth to expose the bone surface, which was flat and smooth, and had the appearance of cortical bone. A guide groove was made on the base of the torus using a fissure bur and the final resection was done using a chisel and mallet. The sharp and rough edges of bone was then smoothed. Excess soft tissue was removed. Flap was reapproximated and surgical site closed using 3-0 Vicryl. Postoperative instructions were given and antibiotics and analgesics were prescribed to the patient. The excised mass was then sent for histopathologic examination. Last review was done after 6 months which revealed no bony regrowth.



Figure 1: Unilateral bony hard swelling covered with normal mucosa located in the lingual cortical plate above the mylohyoid ridge, extending from 33 to 36 region.



Figure 2: CT showing bony hard swelling located in the lingual cortical plate above the mylohyoid ridge.



Figure 3: Surgical site after excision of torus.

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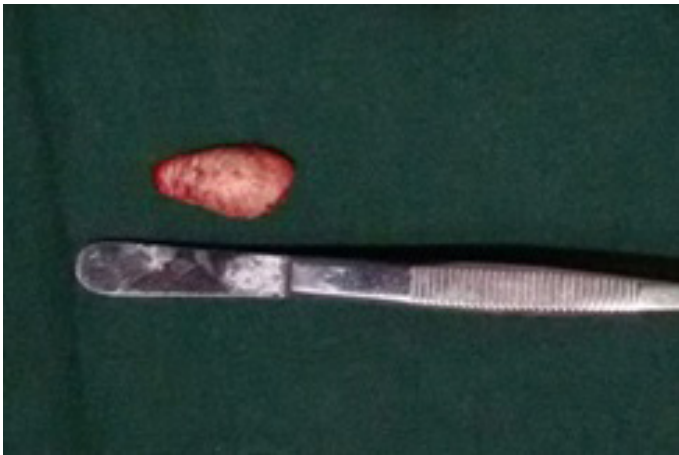


Figure 4: Excised mass.



Figure 5: Flap reapproximated and surgical site closed using 3-0 Vicryl.

Discussion

Exostosis was first described in medical literature by Fox [3]. In 1879 Kupser and Besselhegen put forward the word torus and it was used to designate exostosis arising in the midline of palate and lingual side of lower jaw [4]. Hyperostosis is defined as benign neof ormation of bone tissue which is diffuse or localized [5]. Genetic factors, environmental factors, masticatory hyperfunction and continued growth are the current postulated etiologic factors for this entity [6-8]. It is believed that mandibular tori are caused by several factors. Genetic predisposition to mandibular torus may be inherited in a dominant manner [7]. They are more common in early adult life and are associated with bruxism. A mechanism of proposed buttressing bone formation is stated because flexor causes release of bone morphogenic proteins which then stimulates bone growth expression as thickening, lipping or exostosis at a point of stress [9]. Genetic origin of torus mandibularis was estimated in 29.5% of the cases while approximately 70% of the origin was attributed to environmental factors like occlusal stress by Eggen [10]. Consumption of fish which contains omega 3 unsaturated fatty acid and Vitamin D encouraging bone growth was found

to be etiologic reason as done by the study of Al-Bayaty et al [11]. In our patient no genetic disposition was noted but masticatory hyperfunction was observed related to bruxism. Also the patient's consumption of fish was found to be high. A relationship between hyperparathyroidism and development of tori was observed in haemodialysis patient by Pey Jung Chao [12]. Certain ethnic group like Eskimos, Mongolians and Japanese and in countries like USA appearance of tori was found to be more common [6,8].

The prevalence of tori, from the results of a study by Al-Bayaty et al. [11] is 12.3%, similar to that of Bruce et al. [13] with 14.6%, while Jainkittivong et al. [14] reported their prevalence to be 26.9%. The prevalence of mandibular tori ranges from 6% to 7% of the population [13]. It is less common than bony growths occurring on the palate, known as torus palatinus. According to Eggen and Natvig, torus is more frequent between 10-49 years and very rarely seen before age of 10 [10]. Bruce et al study shows that average age of onset of 34 year old [13]. There is a correlation between the number of teeth existing and the incidence of mandibular torus as the number of existing teeth was significantly higher in patient with mandibular tori than in those without torus [15]. It is observed that torus mandibularis has no significant differences between men and women although in all studies it was more common in males [16]. Haugen's clinical study found that females have significantly higher percentage of both palatal and mandibular tori [17]. Eggen et al classified these growths; <2 mm as small, 3-4 mm as medium and > 4mm as large [10,17]. They vary in size, from few millimeters to few centimeters in diameter. Most of mandibular tori are small and appear bilaterally, but larger and unilateral lesions also exist rarely as in our case. The average measurements were reported to be 10 x 9 mm for mandibular torus in a study by Al-Bayaty et al [11]. Here the patient was 24 year old female and she showed a large mandibular tori of size 27x13x12 mm which was unilateral. The overall volume of mandibular tori in relation to oral cavity was also fairly large compared to other similar reported cases.

Tori mandibularis can be nodular, unilateral or bilateral, single or multiple [18]. Depending on anatomic location they are classified as torus mandibularis, torus palatines and buccal bone exostosis [19]. Torus mandibularis arises in the lingual side of mandible in relation to premolars above the mylohyoid ridge [2]. Tori can be categorized by their appearance as 1. Flat tori having broad base, smooth surface symmetrically located on midline of palate 2. Spindle tori having a ridge in the midline 3. Nodular tori having multiple bony growths and each having their own base 4. Lobular tori having multiple bony growths with common base [19]. Study by Eggen and Natvig found that in a dentate patient the presence of mandibular torus is significantly correlated with normal alveolar bone height around the teeth [7]. Our case was categorized into the fourth type and according to Eggen's classification was of large type.

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X rays reveal radiodense images with a slightly higher density than that of surrounding bone. Histopathologically Torus is characterized by dense outgrowth of bone in a laminated pattern with bone marrow occupying small spaces where minimum osteoblastic activity can be seen [20]. Our case also shows similar pattern. Histologic features of tori and exostosis are identical. The latter is described as hyperplastic bone consisting of mature cortical and trabecular bone [2]. Differential diagnosis is compact osteoma, cancellous osteoma, osteochondroma, subperiosteal haematoma, ossifying fibroma and chondrosarcoma.

Mandibular tori are usually a clinical finding with no treatment necessary until it interferes with tongue positioning, speech or fabrication of dentures or causes traumatic ulceration from mastication. Surgical removal of the tori can be done in such cases but possible complications of surgery include lingual nerve damage in cases of distally extended tori, infection and haemorrhage.

Conclusion

Torus is a localized peripheral overgrowth of bone where the base is continuous with the original bone. It is a benign pathology and is mostly asymptomatic. Mandibular tori can be an excellent site for harvesting bone. Exostosis should be differentiated from osteoma which produce a similar clinical, radiographic and histologic picture. Osteomas are benign developmental neoplasms which induce proliferation of dense, compact or coarse, cancellous bone usually in an endosteal or periosteal location.

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