



DIAGNOSTIC CONSIDERATIONS AND MANAGEMENT OF BILATERAL MAXILLARY BUCCAL EXOSTOSES- A CASE REPORT

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ABSTRACT

Exostoses are benign bony outgrowths occurring along the maxillary or the mandibular arches and are located frequently in the pre-molar and the molar regions. They are often asymptomatic and self-limiting but may raise esthetic concerns to the patient along with compromised periodontal health. The exact etiology of exostoses remains unknown. Histopathologically, they appear as areas of hyperplastic bone comprising of mature trabecular and cortical bone.

*This article presents a case of a ** year old male patient with bilateral buccal maxillary exostoses and discusses its diagnosis and management by surgical intervention with a review of literature.*

Keywords: Exostoses, Maxillary Exostoses, Buccalexostoses.

INTRODUCTION:

Tori, Exostoses and osteomas are protuberant bony nodules that are designated specially based on their anatomical locations.¹ The first article on exostosis was published by Fox in 1814.² Exostoses are asymptomatic and benign bony hamartomas, appearing as nodular protuberances over the bony cortices.³ They are considered to be of two types: Buccal and palatal exostosis; affecting maxillary, mandibular or both the arches.

The exact etiology is unknown, however, the possible postulated causes include increased masticatory forces to the teeth,^{4,5} genetic,^{6,7} environmental factors^{8,9} as well as continued growth.¹⁰

Buccal exostoses usually occur as bilaterally along the facial aspect of the maxillary and/or mandibular alveolar region. The overlying mucosa appears intact and normal although it may be slightly stretched but are non-tender and hard on palpation. They often develop during adolescence, gradually increase in size and are self-limiting. Progressive enlargement of the nodule may pose difficulties in maintenance of oral hygiene, associate with problems of food lodgement and may lead to periodontal disease. Often no treatment is required unless patient shows esthetic concerns or if the growth causes any discomfort, in which case surgical intervention is done.

CASE REPORT:

A ** Year old male patient reported to the Department of Oral and Maxillofacial surgery, Faculty of Dentistry-Jamia Millia Islamia; with a chief complain of intraoral bilateral swelling on the facial aspect along the molar region in maxilla. Patient reported of gradual increase in the size of the outgrowths over the past few years. He did not give

any history of associated Symptoms of pain or discomfort. There was no relevant dental or medical history.

Intraoral examination revealed bilateral overgrowths on the buccal aspect of the maxilla along the molars which were bony-hard on palpation. The overlying mucosa was normal and no signs of inflammation were seen. The exostoses measured approximately **** on the right side and **** on the left side. There was no associated tenderness or sensitivity in these regions and an intact dentition was present. Intraoral periapical radiographs (Figure 1,2) and an OPG (Figure 3) was taken which showed normal bone in these regions with a healthy trabecular pattern.

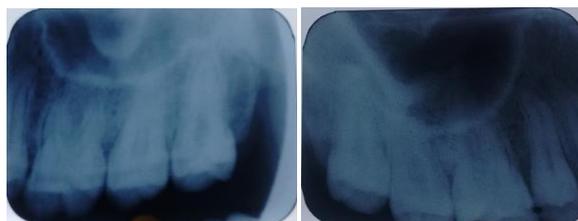


Fig1 and Fig 2 showing relatively dense trabecular pattern



showing dense trabecular pattern at the maxillary molar roots and no abnormal finding in the sinus



Fig 4 Intraoral view showing bilateral bony growth

A biopsy was planned and the bone samples were sent for histopathologic testing. The reports suggested presence of no abnormal findings and confirmed native bone constituents. The histological appearance showed dense bony tissue, with the presence of lacunae and normal osteocytes. The preoperative blood tests, the serum calcium, 25-(OH) Vitamin D, and 1.25-(OH)₂ Vitamin D₃ were within normal limits and no abnormal findings were not observed in other tests. Blood tests also revealed normal serum alkaline phosphatase levels which ruled out suspected paget's bone disease.

Appropriate local anaesthesia was administered and crevicular and vertical incisions were placed to reflect a full thickness mucoperiosteal flap so as to attain complete access to the exostosis (Figure 4). The bony outgrowths were surgically removed by doing the appropriate vertical grooving/festooning and as such the exostosis was removed in several sections which was followed bone recontouring and radicular blending. The procedure was assisted by Copious saline irrigation at all the steps. After removal of the osseous tissue, the flaps were repositioned and the site was palpated to assure that no further recontouring was required. (Figure 5) 3-0 silk sutures were placed and the patient was put on antibiotics for 5 days. No major complications were reported a regular followup revealed and no recurrence or postoperative problems.

DISCUSSION:

Tori and exostoses are calcified protuberant bony nodules and are designated according to their location anatomically. Torus palatinus (seen on midline of hard palate) and torus mandibularis (on lingual aspect of mandible) are the two most common types of intraoral osseous overgrowths. Buccal and palatal exostoses are multiple bony nodular masses found less frequently than tori.^{11,12}

Tori can be categorised by their appearance.

1. Arising as a broad base and a smooth surface, flat tori are located on the midline of the palate and extend symmetrically to either side.
2. Spindle tori have a ridge located at their midline.
3. Nodular tori have multiple bony growths that each have their own base.
4. Lobular tori have multiple bony growths with a common base.

The torus may be bosselated or multi-lobulated but the exostosis is typically a single, broad-based, smooth-surfaced mass, perhaps with a central sharp, pointed projection of bone producing tenderness immediately beneath the surface mucosa. The histologic features of tori and other types of exostoses are identical. These are described as hyperplastic bone, consisting of mature cortical and trabecular bone.¹²

According to Glickman & Smulow buccal alveolar bone enlargement may be further classified into two subtypes: exostosis and lipping. They considered exostosis to be a buttressing bone formation as a



Figure 5. Bone growth exposed bilaterally

response to trauma from occlusion.¹⁴ Buccal exostoses are benign bony protuberances arising from the cortical plates of maxilla or mandible. These may be manifested in the early adult years and can continue to enlarge slowly over time. Etiology of exostoses remains unknown, however, a mild chronic periosteal inflammation and increased occlusal stress have been suggested as the possible cause for their occurrence.¹⁵ Buccal bone exostoses are seen buccally along the maxilla or mandible, occurring usually in the premolar and molar regions. These lesions are more common in males than in females¹⁶ occurring in a ratio of about 5:1 and may be found in about 3% of adults. Multiple lesions may also be present in which case they may appear as several discrete

bony overgrowths on the buccal aspect of alveolar bone in dentulous individuals subjects or may be seen as palatal tori in maxilla and mandibular tori.¹⁷ The overlying mucosa of exostoses has a normal appearance, but may appear whitish or ulcerated if exposed to any trauma.¹⁸ Radiographically, exostoses may be well or poorly differentiated and appear as areas of increased opacity conforming to the morphology of the particular overgrowth. Following extraction of teeth, the exostoses present on the alveolar process show an increased prominence progressively as they do not resorb and can be seen more clearly radiographically.¹⁹

The diagnosis of a buccal exostosis is based on clinical and radiographic findings. It remains important to distinguish exostoses from similar pathology arising from gingival enlargement or from osteomyelitis, osteoma and osteosarcoma. Absence of signs of inflammation help exclude inflammatory gingival enlargement and osteomyelitis. While as Osteoma, osteosarcoma and other intra bony pathology can be ruled out on the basis of radiological and histopathological findings. Buccal exostoses are considered different entities to osteomas²⁰ even though the two lesions are histopathologically identical.²¹

It is also important to differentiate exostoses from similar presenting lesions like osseosarcomas and Gardner's syndrome in case of multiple occurring exostoses. Intestinal polyposis and cutaneous cysts or



Figure 6. Bone recontouring done and sutures placed

fibromas are other common features of this autosomal dominant Gardner's syndrome²². Paget's bone disease exhibits increased levels of serum Alkaline phosphate in blood along with peculiar radiographic and histological findings and hence aids in differentiating it with similar pathologies. Other lesions that could be considered as the differential diagnosis include Compact osteoma, Cancellous osteoma, Osteochondroma, Organized subperiosteal hematoma, Mature ossifying fibroma (expanding cortical lamina), Periosteal osteosarcoma or chondrosarcoma.²³

Most of the times exostoses do not require any treatment unless any functional problems, discomfort or esthetic reasons are the concern of the patient. Conservative surgical removal with bony recontouring is the treatment of choice, with occasional recurrences expected. The

possible complications after surgery include hematoma, edema, wound dehiscence, and infection.²⁴ Inadvertant bone resection along the buccal cortex apically could also lead to antral perforations.

CONCLUSION:

Many pathologies of the jaw may appear similar clinically and may lead to misdiagnosis. Hence, it is important to consider all radiographic, histopathological and clinical aspects including blood studies to diagnose and rule out a pathology. This aids in definitive management and timely control of the concerning disease.

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