Central Osteoma of Maxilla: A Rare Case Report

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ABSTRACT

Osteomas of the maxillofacial region are slow-growing benign lesions of bony origin that usually cause facial asymmetry and dental malocclusion. They arise from the proliferation of either compact or cancellous bone and may occur as solitary or multiple. Multiple maxillofacial osteomas associated with numerous supernumerary teeth that are seen in Gardner’s syndrome, which is typically characterized by cutaneous sebaceous cysts and colorectal polyposis. However, depending on their origin, solitary osteomas are further classified as central (endosteal), peripheral, and extra-skeletal types. We have documented a rare case of central maxillary osteoma that presented as a fixed bony enlargement in the right half of the maxilla resulting in significant swelling and airway obstruction.

Keywords: Case report, Endosteal maxillary osteoma, Oral diagnosis, Oral pathology, Oral surgery.

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INTRODUCTION

Central osteoma arises from the endosteum due to proliferation in the medullary bone. It is also known as endosteal osteoma. It is a benign, slow-growing lesion and is usually asymptomatic. Its etiology is unclear. Various studies hypothesize it to be congenital or genetically acquired, while others consider it to be a developmental anomaly or a neoplasm occurring in response to trauma or chronic infection. Central maxillary osteoma presents as a large bony swelling in one or more portions of the upper jaw that leads to facial asymmetry, malocclusion, and airway obstruction. Surgery for central maxillary osteoma is done when symptoms are exaggerated in form of pain/paresthesia over the midface resulting due to pressure impingement against the infraorbital nerve. Gross facial asymmetry along with difficulty in respiration or mastication is other indication for surgical treatment.

CASE DESCRIPTION

A 32-year-old male patient (Fig. 1) reported with a complaint of swelling in the right posterior half of the upper jaw causing airway obstruction. Past dental history was insignificant, with no history of trauma to that area. The patient gave a history of slow but gradual increase in the size of the swelling over a period of 6 years. Clinical examination showed a hard well-circumscribed asymptomatic fixed mass on the posterior aspect of the right maxilla that was chiefly present over the posterior palatal vault with extension onto the buccal alveolus (Fig. 2). The swelling was non-tender, non-pulsatile, non-fluctuant, and the associated teeth were found to be clinically vital upon testing. The lesion was grossly “2 × 3 cm” in diameter and was covered by normal palatal and alveolar mucosa.

Paranasal sinus (PNS) revealed a gross radio-opacity of almost the entire right maxilla, on basis of which further detailed computed tomographic (CT) scan was advised. Computed tomographic scan revealed a well-defined radio-opacity in the right posterior half of the upper jaw causing marked deformity with bony expansion (Fig. 3). The central lesion showed heavily mineralized tissue over the right posterior hard palate and alveolar bone, with complete invasion of the maxillary sinus. Superiorly the lesion was seen causing slight deformity of the orbital floor (Fig. 4); however, no

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evidence of infiltration of extracoronal space was seen. Inferiorly there was a convex bulge at the roof of the oral cavity with erosion and expansion of the hard palate. Medially it was encroaching upon the ipsilateral nasal cavity with slight erosion of the nasal turbinates. However, the nasal septum was normal and well in place. Posteriorly the lesion was obviating the pterygomaxillary fissure. The pterygoid plates were well preserved. Anteriorly, the lesion caused a contour bulge in the buccal alveolus with superficial thickening of the overlying soft tissue up to the distal surface of the upper second molar tooth.

Normal pneumatization of right ethmoidal, maxillary, and bilateral frontal and sphenoidal sinuses was seen. The osteomeatal unit was blocked on the affected side. However, other soft-tissue structures appeared to be normal. Trauma or infection was not a causative factor for the development of osteoma in this case. The tumor was not present in the oral cavity for more than 6 years, proving that the lesion was not developmental or congenital in origin. No other lesions or tumors were seen in this patient that would indicate malignancy.

A provisional diagnosis of a maxillary odontome was made and the patient was planned for surgical excision under general anesthesia. The lesion was excised in en bloc and sent for histopathological investigation immediately following the surgical procedure (Figs 5 and 6). Microscopic findings showed a normally dense bone with minimal marrow spaces (Fig. 7). On correlation with the radiological findings, the features were confirmatory of central maxillary osteoma.
Central Osteoma of Maxilla

**Discussion**

Central maxillary osteoma is a slow-growing benign tumor of bony origin, usually producing symptoms by causing obstruction in airway and deformation of the upper jaw. These are sessile tumors, generally composed of densely sclerotic bone. They occur most commonly in the skull and present as a hard, fixed bony protrusion from the cortical surface of the bone causing facial asymmetry and cosmetic disturbance. Central maxillary osteoma may be seen protruding into one of the maxillary air sinuses, thus presenting with symptoms related to airway obstruction and mild dull pain. The condition has a slight predilection for men and can arise at any age. Its etiology is unclear. However, long-standing infections, maxillofacial trauma, vascular malformations, genetic factors, and various congenital as well as developmental anomalies are suggested to be the cause. The condition remains generally asymptomatic and the infiltration of the maxillary sinus subsequently leads to mucocele formation capable of spreading infection into the orbit and the rest of the cranial cavity.

Central maxillary osteoma has rarely been documented to have undergone a malignancy but its association with Gardner's syndrome is not unknown and should be considered as an early marker of colorectal carcinoma. Large and bulky osteomas may invade vital structures beyond the maxillary sinus. They can disrupt the floor of the anterior skull base causing cerebrospinal fluid leaks and may pressurize the contents of the orbit causing significant pain and proptosis. Histologically endosteal osteomas are composed of mature bony trabeculae having interstitial spaces that contain fibrous tissue with varying degree of vascularity. Radiological investigations such as a three-dimensional (3D) CT scan is highly recommended preoperatively to assess the extent and the spread of the tumor for complete surgical excision.

**Conclusion**

Central maxillary osteoma, although a slow-growing tumor in the maxillofacial region, warrants an extensive investigation for the possibility of diagnosing Gardner’s syndrome. Thus, the early detection of an osteoma of the facial skeleton could very well prove to be life-saving for the patient.

Radiological investigation in the form of CT scan with 3D reconstruction is sufficient in determining the extent and spread of the lesion. Surgery is usually indicated for an osteoma that is symptomatic or growing actively leading to functional abnormality or facial asymmetry. Recurrence of this tumor after careful surgical excision is rare. The prognosis is good and postoperative healing is uneventful.

**References**