Central (Endosteal) Osteoma of the Maxilla: Report of a Case

SUMMARY

Osteomas of the jaws are well-differentiated bone lesions, affecting more frequently the mandible than the maxilla. They are classified in 2 groups, central and peripheral, although the existence of central osteoma is debated. They usually remain asymptomatic, except when they take large dimensions or produce functional disturbances.

This paper describes a rare case of central osteoma in a 74-year-old man. The lesion was presented as an asymptomatic ulcer, dens-like protuberance, which was located on the residual alveolar ridge of the left maxilla, with no other clinical symptoms. The 3 years follow-up after complete surgical excision showed no sign of recurrence.

Keywords: Osteoma, central; Maxilla

Introduction

Osteomas are benign, well differentiated bone lesions, which are found almost exclusively in the flat bones of the skull, in paranasal sinuses, and more rarely in extra-skeletal soft tissues. Their location in the jaws is rare, and the maxilla is less frequently affected than the mandible.

Osteomas usually remain asymptomatic for a long period of time. However, when they take on large dimensions, they might produce disfigurement of the face, or functional disturbances such as difficulties in mastication and swallowing, or vision and balance problems due to their vicinity to the carotid sinus or to the internal carotid artery. They are seldom associated with pain.

Osteomas are classified according to their location in 2 main groups, central (endosteal) and peripheral (subperiosteal), although severe doubts have been raised as to whether a central osteoma is a real entity. Up until now, we have found only 1 fairly well documented case of endosteal osteoma in the English literature. In this paper, an extremely rare case of a central osteoma of the maxilla is presented. We also discuss the pathogenesis, the clinical and radiological features, and the pathology of such lesions.

Case Report

A 74-year-old man was referred by his dental practitioner to the Department of Maxillofacial Surgery of the Aristotle University of Thessaloniki for evaluation and treatment of an asymptomatic ulcer, dens-like protuberance of the posterior alveolar ridge of the left maxilla. The lesion had appeared 2 weeks previously, with no other clinical symptoms. The patient had been through a full mouth restoration with full dentures 6 months earlier. The oral mucosa was normal, with a slight bony prominence in the area of the lesion and a small ulcer located on the affected area, with no other intraoral findings.

Figure 1. Intraoral appearance of the lesion. A small ulcer at the area of the residual crestal ridge can be seen
The radiographic imaging showed a round, well-defined, high-density radiopaque mass in the left maxilla, measuring 20x30 mm, without any obvious correlation with the left sinus (Fig. 2). Physical and laboratory examinations were within normal limits. The patient’s medical history was free of gastrointestinal symptoms or skeletal abnormalities, and the possibility of Gardner’s syndrome was excluded.

The clinical diagnosis was “odontogenic tumor”. A decision was made for a total removal of the lesion in order to achieve a complete histology. Under local anesthesia and through a labial mucoperiosteal flap, the mass was exposed and revealed (Fig. 3). It is noteworthy that the lesion was much harder than the surrounding healthy bone, without any clear distinguishing border between them. The upper part of the lesion was firmly attached to the surrounding bone and we used a small round burr and a straight elevator to remove it (Fig. 4). So, in a manner of speaking, the mass was not encapsulated. After removal of the lesion, some bone particles from the surrounding tissues were also removed. (Fig. 5).

Microscopically, the excised mass was mainly composed by well-differentiated dense compact bone containing few very small spaces with thin vessels (Fig. 6). Taking into consideration the other diagnostic parameters, a diagnosis of central osteoma of the maxilla was made. There has been no recurrence during a follow-up of 3 years (Figs. 7 and 8).
Osteomas of the jaws are benign neoplasms consisting of well-differentiated compact or cancellous bone, characterized by continuous osseous growth. They are generally found in the skull and facial jaw bones, and are classified as peripheral or central. Peripheral osteomas are considered to arise from periosteum. The site most frequently affected by peripheral osteomas is the frontal sinus, followed by the ethmoidal and maxillary sinuses. Peripheral osteomas have also been described in various locations of the skull, such as the pterygoid plates and the temporal bone. Peripheral osteomas are usually located on various sites of the mandible, while the maxilla is less frequently affected. Trauma or infection has been suggested as a possible etiologic factor in the formation of these lesions. Trauma is considered to play an important role since many osteomas are encountered on the lower border or the buccal aspect of the mandible, a location which is more vulnerable to trauma than the lingual aspect.

Central osteoma is considered to arise from endosteum. However, great controversy surrounds the existence of this pathologic entity. Indeed, central osteoma, as a sound pathological entity, has been questioned up until now, since many reported cases have been reevaluated and reclassified. Osteomas of the facial skeleton, associated with skeletal abnormalities and gastrointestinal symptoms, should reinforce the possibility of Gardner’s syndrome. The dental abnormalities of such patients also include supernumerary and impacted teeth, odontomas and dentigerous cysts. The most frequent sites for osteomas associated with Gardner’s syndrome are the external surface of the skull, the paranasal sinuses and the mandible.

Although peripheral osteoma is now an acceptable and classified lesion, the classification of central osteoma as a discrete lesion remains equivocal, as many cases of central osteoma proved to be other pathologic entities, such as cementoma, fibrous dysplasia or focal sclerosing osteomyelitis.

In our case, the radiographic and surgical findings along with histological features and the patient’s history strongly suggest for the diagnosis of central osteoma of the maxilla. It is clear from the panoramic X-ray that the lesion was entirely developed into the body of the maxilla, without having any relation to the ipsilateral maxillary sinus. We also could conclude that the slight intraoral prominence of the lesion from the neighboring healthy maxillary bone was created gradually, as a result of the pressure exerted by the patient’s denture. This pressure could also cause the small ulcer of the mucosa, observed over the osteoma.

Histological examination revealed a well demarcated lesion from the surrounding trabecular bone, which consisted of dense compact bone. There were neither odontogenic epithelial remnants, nor any cement or cement-like findings. There was also no evidence of active or previous inflammation. Another point favoring the diagnosis of central osteoma was the absence of previous trauma or infection at the affected site.

In contrast to another published case of central osteoma, where severe pain was the main clinical symptom, our patient was free of pain and other related symptoms. Correlating the above mentioned findings, we conclude that the lesion we removed was an osteoma of the maxilla with central location.

References


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