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Case Report: Osteoblastoma of the Maxillar Sinus

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Abstract

Osteoblastoma is an uncommon benign tumor which commonly affects the vertebrae and the long bones. It occasionally arises in the maxilla. It is important to do differential diagnoses which include osteoid osteoma, giant cell bone tumour, aneurysmal bone cyst and fibrous dysplasia giant cell tumor and osteogenic sarcoma. The current study presents the case of a 14-year-old boy with a tumor in the ethmoid cell and maxillary sinus. Previous literature was reviewed and discussed.

Keywords

Osteoblastoma, Bone Tumours, Maxilla, X-Ray Computed Tomography, MRI

1. Introduction

Osteoblastoma is an uncommon benign tumor of the bone. It accounts for approximative 1% of all primary bone tumors [1] [2] and 3% of all benign bone neoplasias [3]. Histologically, it is characterized by the proliferation of numerous plump osteoblasts forming trabeculae of osteoid and immature bone in a richly vascularized stroma [4] General osteoblastoma tends to occur in vertebral column and long bones [5]. This tumour rarely develops in the maxillofacial region.

The aim of this article is to add one more case of this rare entity. We present an atypical case of osteoblastoma involving the right maxillar sinus.

2. Observation

A 14-year-old boy with no previous medical history admitted to our department with a gradually enlarging mass of the right side of his face. Recently this mass had grown larger and became increasingly painful despite the use of analgesics. The axial CT showed a large mass involving the right ethmoid cells and maxillar sinus (**Figure 1**) enhanced after contrast injection. The tumor blew the bony walls which were lysed here

and there. Magnetic resonance imaging (MRI) in the axial, sagittal, and coronal planes showed an extensive mass interesting the ethmoid cells and maxillary sinus, with heterogeneous low signal intensity on T1-weighed imaging and high signal on T2 (**Figure 2**) moderately enhanced by gadolinium. The process delimits cubicles in asignal (aeric) without liquid. The size of the lesion was 54 × 40 × 32 mm. The process fills the right nasal cavity and bombs in the nasopharynx. There was no orbital extension.

3. Discussions

Osteoblastoma is defined as a rare benign bone neoplasm. It represents less than 1% of all tumours of bone. The tumour can arise in any bone of the skeleton. The long tubular bones are the most commonly affected followed by the spinal column [6]-[8]. However, it rarely involves the maxilla and mandible; the maxilla is less affected than, the mandible [9]. The male-to-female ratio is 3-2:1 [10]-[12].

Clinically, osteoblastoma is associated with spontaeous, continuous dull pain [13]-[15]. It is reported that the pain is persisted after the use of analgesics [16].

On Plain radiography, osteoblastoma appears as a cystic bone lesion with well-circumscribed margins [17] [18] CT demonstrates an expansive mass, it can be a mixed lytic

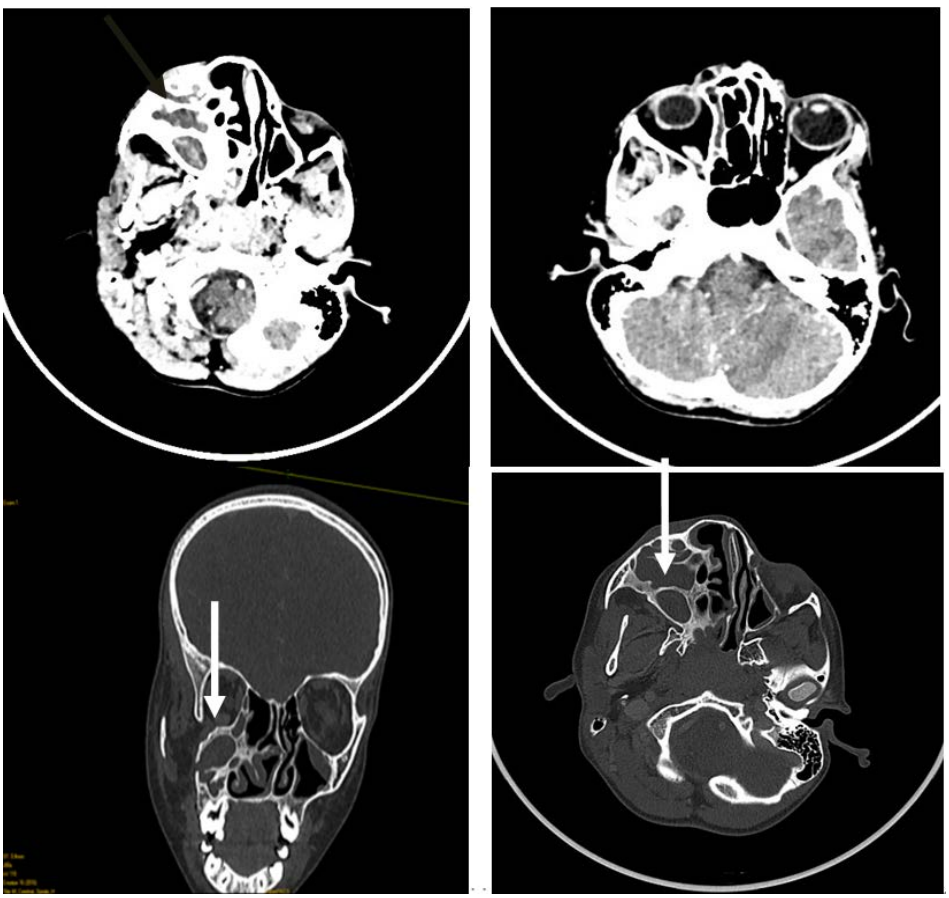

Figure 1. The axial CT showed a large mass involving the right ethmoid cells and maxillar sinus, enhanced after contrast injection.

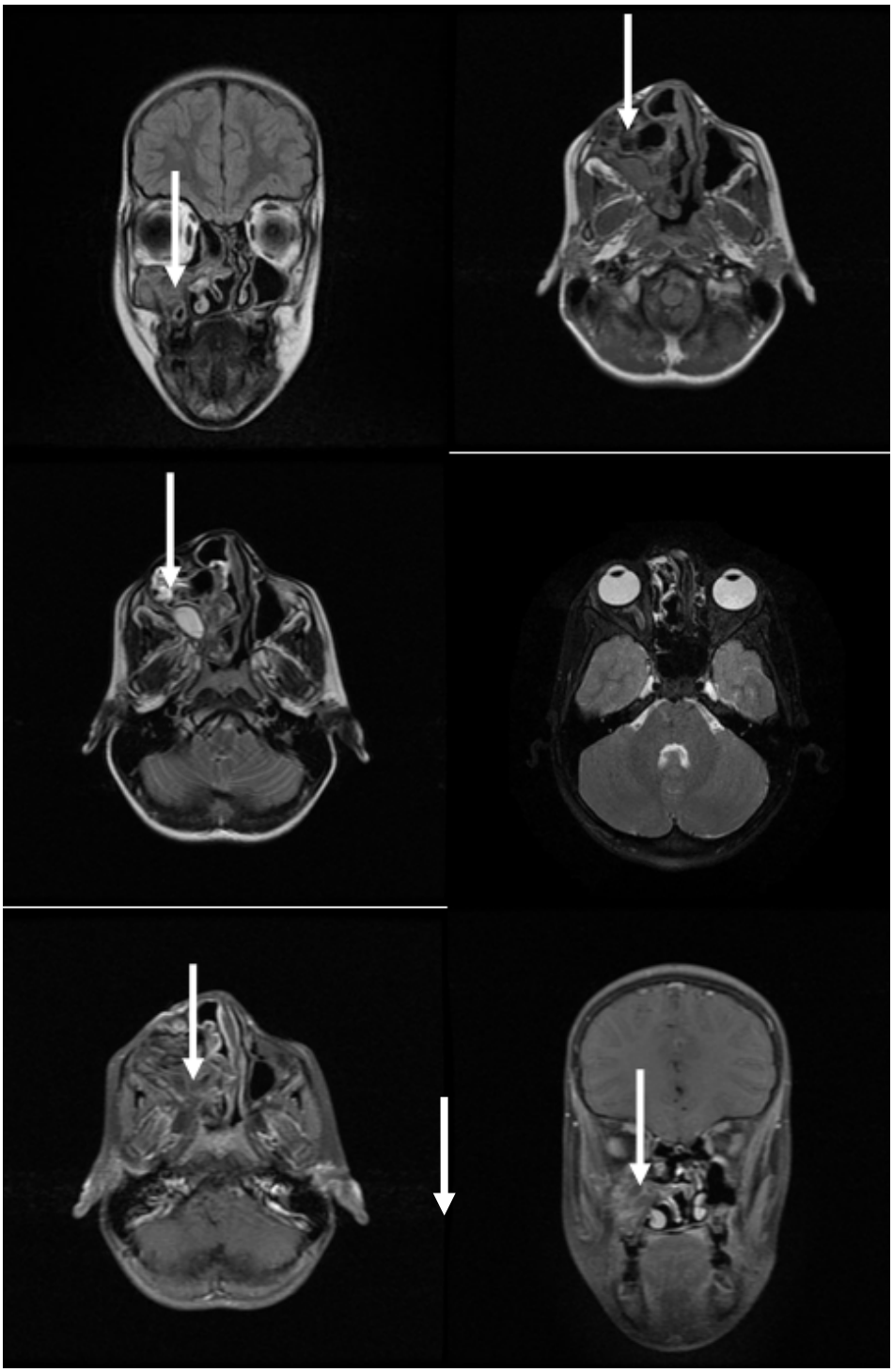

Figure 2. MRI showed an extensive mass interesting the ethmoid cells and maxillary sinus, with heterogeneous low signal intensity on T1-weighed imaging and high signal on T2 moderately enhanced by gadolinium.

and sclerotic appearance [17]-[19]. Contrast enhancement is variable on CT [20]. MRI provides important information about the extension of osteoblastoma and involvement

of the adjacent soft tissues [18] [19] [21]. The tumour generally is characterized by an hypointense or isointense mass on a T1-weighed image with hyperintensity or hypointensity on T2-weighted images [18]-[20] with homogenous or heterogeneous enhancement after the administration of gadolinium.

In our case, the tumor was iso intense in T1, hyperintense in T2 with moderate enhancement.

Radiographically, Differential diagnosis of osteoblastoma includes osteoid osteoma, giant cell bone tumour, aneurysmal bone cyst and fibrous dysplasia giant cell tumor and osteogenic sarcoma.

Post–surgical radiotherapy is controversial [22]. According to Marsh *et al*. radiotherapy is reserved for unresecable lesions, continual growth or recurrence tumor. Other authors report that radiotherapy is contra indicated in osteoblastoma of the facial bones [23].

4. Conclusion

Osteoblastoma is a rare tumor of the paranasal sinus. Clinicopathological and radiographic findings of a case of osteoblastoma of the paranasal sinus have been presented in this report.

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