BENIGN OSTEOLASTOMA OF MAXILLARY SINUS: A RARE PRESENTATION

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Abstract: Benign osteoblastoma of paranasal sinuses is a rare tumor of the 2nd decade of life with only few cases reported till date. It arises most commonly from the ethmoid sinus and present as an intra-nasal mass leading to broadening of the nasal bridge. Here we present a case of benign osteoblastoma in a 8 year old girl presenting with a large intranasal mass seen through nostril and leading to facial deformity.

Keywords: Sino-nasal tumor; Benign osteoblastoma

INTRODUCTION:

Benign osteoblastoma of the head and neck is a rare fibro-osseous tumour of young age. They account for less than 1% of all bony tumours commonly affecting long bones and vertebrae. Head and neck cases of osteoblastoma account for only 18% of these tumours. Sinonasal tract origin of these tumours is even more rare. The first case of sinonasal osteoblastoma was reported by Fu and Perzin and Freedman in 1974.^{3,4}

Fibro-osseous lesions of sino-nasal tract are not very common in day to day practice occurring more commonly among the females. Most common among them are fibrous dysplasia, ossifying fibroma and cementifying fibroma.² Here we present a very rare case of benign osteoblastoma of maxillary sinus in a 8 year old girl.

CASE REPORT :

An eight year old girl presented in our outdoor with a huge right sided nasal mass for the last one year. She complained of gradually progressive nasal obstruction and intermittent bleeding from the right side for the last 1 year which was not associated with any pain. The mass has gradually progressed in size over the last 1 year. There was history of gradually increasing difficulty in

breathing for the last 1 month. There was no history of antecedent trauma. On examination of the nose, a large pinkish non-pulsatile

mass with smooth surface was seen in the right nasal cavity. Externally there was broadening of the dorsum with frog faced deformity (Fig. 1). On palpation, the mass was found to be firm, non tender and not bleeding to touch. The mass was fixed to lateral wall of nose. On anterior rhinoscopy, right sided nasal cavity was totally occluded by the nasal mass and left sided nasal cavity was occluded with gross deviation of nasal septum. On regional examination, no palpable regional lymphnodes were found. On examination of the eye, mild telecanthus was present but visual acuity and eye movements were normal with no diplopia. Ophthalmoscopic examination revealed no abnormality. On examination of palate, no obvious bulging or ulceration was noted. No dental malocclusion or loosening of teeth was seen. On systemic examination, apart from pallor no other significant findings were present.

Routine blood test revealed mild anemia. On X-ray PNS OM view there was a smooth homogeneous opacity involving both nasal cavities and right maxillary antrum and ethmoid sinus. CT scan showed a heterogeneous mass (5cm x4cm) with multiple punctate discrete opacities. There was a very thin sclerotic margin around the mass which was extending into the right maxillary, ethmoid and the sphenoid sinus with bulging of the medial wall of the right orbit. The nasal septum was pushed towards the left side. Coronal scan with bone windows showed the mass to be partly ossified and partly of low density (Fig. 2).

Fig 1: Clinical photograph showing nasal mass coming out of right nostril.

Fig 2: CT Scan showing a heterogeneous mass in right maxillary antrum with multiple punctate discrete opacities.

Fig 3: Photograph showing the mass after removal.

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Fig 4: Histological picture showing trabeculae of osteoid with variable mineralization with florid osteoblastic proliferation.(H&E Stain,10X10)

Fig 5: Osteoblastoma high power

OPERATIVE PROCEDURE :

The mass was excised under general anaesthesia with oro-tracheal intubation through a lateral rhinotomy approach. The mass was found in the nasal cavity extending towards the right maxillary sinus, involving ethmoid and sphenoid sinus. The medial wall of the maxilla was totally eroded. The cartilaginous septum was intact and pushed entirely towards the left side. The mass (4.5cm × 3cm) was removed meticulously and sent for histopathological examination (Fig. 3). Septoplasty was done to bring the septum in the midline. Post operative recovery was unremarkable. Histopathology of the tissue showed soft myxoid tissue with intermittent bony areas. Microscopically, the bony areas represented Haversian bone of cortical architecture. The myxoid zone showed trabeculae of osteoid with variable mineralisation. The trabeculae appeared to mature towards the periphery. Florid osteoblastic proliferation was present. Small numbers of osteoclasts and giant cells were also present. Little mitotic activity was present. The appearance was consistent with benign osteoblastoma (Fig. 4)

DISCUSSION :

Fibroosseous lesion of sinonasal tract in children are usually benign and slowly progressive, most common being ossifying fibroma, cementifying or cemento-ossifying fibroma, psammomatoid ossifying fibroma. Commonly they are confined within the sinus but may cause palatal bulging or facial deformity. Benign osteoblastoma is a very rare tumour in this area.^{2,5,6}

Benign osteoblastoma was first described by Jaffee and Lichtenstein in 1956, however, it was not until 1974 when Freedman and Fu and Perzin described cases of benign osteoblastoma in the ethmoidal sinuses.⁵ Two thirds of benign osteoblastoma occur in long bones of the extremities or in vertebrae (Kent 1969).³ Of these, 14% occur in the head and neck. In the head and neck the majority (75%) of osteoblastoma occur in the cervical vertebrae and mandible. Sino-nasal tract being rarely involved.^{5,6}

In the sino-nasal tract, osteoblastoma is generally more common in the 2nd decade of life and indeed very rare in the 1st decade as seen in our case. The mass commonly arises from the ethmoid

sinus resulting in intranasal mass or broadening of the nasal bridge leading to telecanthus but rarely the mass is big enough to be seen through the nostril as in our case. Males and females are almost equally affected. These tumours are generally asymptomatic until obstruction or compression of surrounding structures occurs resulting in symptoms such as diplopia, epiphora or nasal obstruction. Telecanthus although a late sign, may be an important presenting feature in many cases.¹

The majority of osteoblastoma in the sino-nasal tract are nasal or ethmoidal in origin.^{3,5,7} Malignant transformation of benign osteoblastoma although a rare occurrence, has been reported.⁴ It is therefore important to keep regular clinical and radiological follow up to detect possible recurrence and/or transformation.⁴ Open biopsy is the usual method of diagnosis but since the mass was so large and amenable to complete excision without much adjoining tissue destruction we preferred excision biopsy of entire mass. Some authors suggest haemorrhage can complicate open biopsy or excision biopsy so some author advocate preoperative embolisation to reduce operative haemorrhage but we did not find this and the tumour was relatively avascular during surgery. Treatment of benign osteoblastoma of the sinonasal tract is complete surgical excision. The tumour is well circumscribed and usually amenable to complete excision without extensive bony destruction. Role of local irradiation is controversial. It may be used if the tumour is incompletely excised in order to reduce recurrence. But there is always a risk of radiotherapy induced malignant transformation

CONCLUSION :

Such an atypical presentation of benign osteoblastoma in a 8 year old girl presenting with an extra-nasal mass though very rare, is a reality. Therefore a surgeon must keep this in the differential diagnosis of sinonasal tumors. Fortunately for us simple surgical excision is all that is required.

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