OSTEOMA WITH ORBITAL EXTENSION: A CASE REPORT

Qurrat-ul-Ain Tahir, Muhammad Nauraiz Zubair, Raees Abbas Lail, Zahid Kamal, Shahid Ali

Sahiwal Medical College, Sahiwal Pakistan

ABSTRACT

Osteoma is a benign slow growing bony growth typically occurring in skull or jaw bone. Most commonly facial osteomas arise in paranasal sinuses mostly fronto-ehmoidal sinuses and can cause ophthalmic symptoms. An 18 years old male patient presented to us with complaints of swelling of left upper eyelid and bulging of left eye. CT scan showed left sided fronto ethmoidal osteoma with extensions into nasal cavity and nasolacrimal duct. Patient was managed by left medial orbitotomy with growth excision from nasal cavity and paranasal sinuses. The microscopic examination favored osteoma. Osteomas most commonly affect the fronto-ethmoid sinuses. Traditionally osteomas on histological analysis are classified as eburnated (ivory), fibrous, and mature. Computed tomography is very important in the evaluation of bone extension of the tumor and also the site of origin. Treatment is surgical excision. Osteomas of the paranasal sinuses are usually asymptomatic. If they become voluminous, they can lead to orbital manifestations. The rarity of fronto-ethmoidal osteoma with orbital growth made our case interesting to report.

Key Words: Osteoma, Orbit, Ethmoid surgery.

This case report can be cited as: Tahir Q, Zubair MN, Lail RA, Kamal Z, Ali S. Osteoma with orbital extension: A case report. Pak J Pathol. 2021; 3(3): 131-133.

INTRODUCTION

Osteoma is a benign slow growing bony growth typically occurring in skull or jaw bone [1]. Primary orbital osteomas are rare [2]. Orbital osteoma consists of mature cancellous bone. Primary tumors of the orbital bones constitute 0.6% to 2% of all orbital tumors. Most commonly facial osteomas arise in paranasal sinuses mostly fronto-ehmoidal sinuses and can cause ophthalmic symptoms like globe displacement, diplopia, visual disturbance, epiphora, or proptosis. Hence osteoma from paranasal sinuses is one of the most important cause of proptosis [3].

We present a case of fronto-ethmoidal osteoma causing ophthalmic signs and symptoms.

CASE REPORT

An 18 years old male patient presented to us with complaints of swelling of left upper eyelid and bulging of left eye for 7-8 months which was gradually increasing. It was associated with headache and decreased vision in left eye. There were no other associated complaints.

On Examination Visual acuity was 6/6 in right eye and 6/18 in left eye. Intra ocular pressure was within normal limits. On extra ocular movement there was mild restriction on adduction. Inferotemporal dystopia and proptosis was present. Rest of examination was normal.

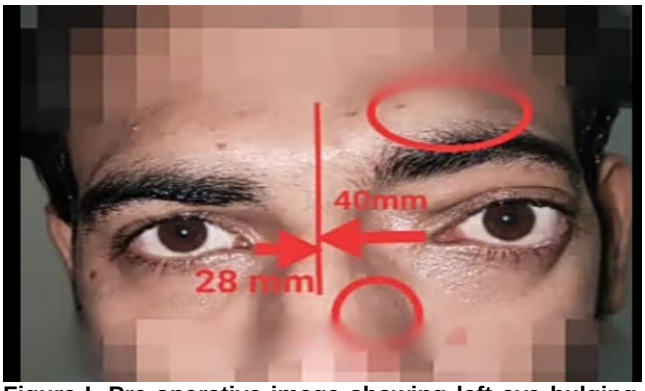

Figure-I: Pre-operative image showing left eye bulging and lateral deviation of left eye.

Computerized Tomography scan showed left sided ethmoidal bone density mass with extensions into frontal sinus, nasal cavity, nasolacrimal duct pushing the eye ball anterolaterally causing proptosis and pushing left medial rectus laterally as shown in Figure-II.

Figure-II: C.T scan orbit, brain and paranasal sinuses coronal section showing bone density mass lesion extending into frontal sinus, ethmoidal sinus and nasal cavity.

Correspondence: Dr Muhammad Nauraiz Zubair, Department of Ophthalmology, Sahiwal Medical College, Sahiwal Pakistan

Email: **nopact340@outlook.com**

Received: ***21 Jun 2021****; Revised:* ***22 Sep 2021****; Accepted:* ***27 Sep 2021***

Rest of the investigations were unremarkable. Patient was managed by left medial orbitotomy with growth excision from nasal cavity and paranasal sinuses.

Figure-III: Extracted tumor.

Growth was sent for histopathology. The specimen consisted of a lobulated, tan-white, bony mass measuring 5.0 cm x 4.0 cm x 1.8 cm with a coarse texture.

The microscopic examination revealed trabeculae of lamellar mature bone lined by osteoblasts within well vascularized moderately cellular fibrous stroma. Patient condition was satisfactory on follow up after six months.

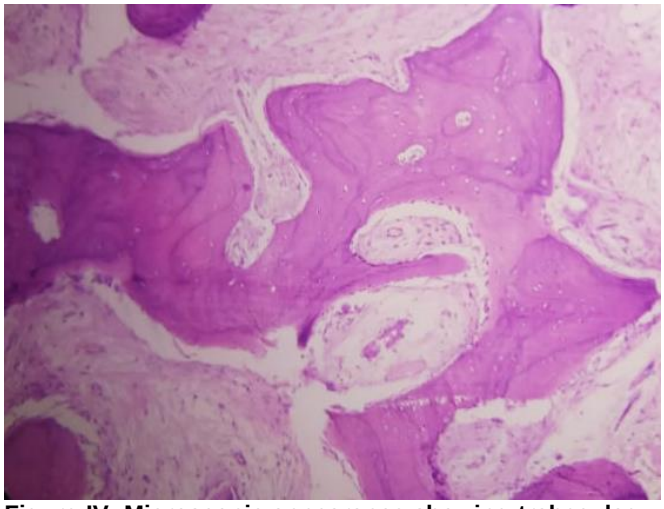

Figure-IV: Microscopic appearance showing trabeculae of lamellar mature bone lined by osteoblasts surrounded by vascularized fibrous stroma.

DISCUSSION

Osteoma, a benign neoplasm, arises from proliferation of cancellous bone. It can attain significant size. A giant craniofacial osteoma (more than 110 g in weight or >30mm in size) can cause intra orbital extension [4]. Most commonly facial osteomas arise in paranasal sinuses mostly fronto ehmoidal sinus and can cause ophthalmic symptoms. It can cause symptoms such as globe displacement, diplopia, visual disturbance, epiphora, or proptosis [4]. Hence osteoma from paranasal sinuses is one of the most important causes of proptosis [3]. The incidence of osteoma in patients undergoing CT examination of paranasal sinuses is about 3%. It is mostly diagnosed in young adult males in 20-50 years age group [7].

Etiology of osteoma is not fully understood. There are traumatic, infective and embryonal theories. Trauma during puberty can lead to development of osteoma according to traumatic theory as bone development is maximum. Infective theory favors sinus infection and inflammation as a predisposing factor. Embryonal theory states meeting of membranous and cartilaginous tissues in fronto-ethmoidal sutures during embryonal life as a cause [7].

Osteomas arise from endosteal or subperiosteal surfaces of cortex of bone. Grossly they are seen as round or oval bosselated and sessile masses. On histological examination they are mostly composed of lamellar bone deposited in cortical pattern with Haversian-like canals. Less frequently trabecular bone is found having intertrabecular spaces rich in blood vessels. Traditionally osteomas on histological analysis are classified as eburnated (ivory), fibrous, and mature [5]. A study conducted in AL Shifa Rawalpindi Pakistan classified orbital osteoma into a combination of seven types:

1. Sessile osteoma (broad-based)
2. Pedunculated osteoma (mushroom shaped having a thin stalk of origin)
3. Dumb-bell-shaped osteoma (involving orbit with adjoining sinus or nasal cavity)
4. wrapped osteoma (covered by a thin cartilage)
5. Naked osteoma (which has no such cartilagenous covering)
6. Homogenous osteoma (uniformly dense)
7. Heterogeneous osteoma (varying areas of density) [6]

CONCLUSION

Mostly osteomas originating from para-nasal sinuses are asymptomatic but if they become large enough, they can cause orbital manifestations leading to serious complications. Complete surgical removal of tumor is usually curative.

AUTHORS CONTRIBUTION

Qurrat ul Ain Tahir: Literature review
Muhammad Nauraiz Zubair: Manuscript writing
Raees Abbas Lail & Zahid Kamal: critical revision, final review.
Zahid Kamal & Shahid Ali: Treatment of patient and case monitoring.

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