Medical Science

A Large Frontal Sinus Osteoma Presenting as Proptosis of the Eyeball

KEYWORDS

Osteoma, frontal sinus, Proptosis with Osteoma

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ABSTRACT

Osteoma is the most common benign tumor of the paranasal sinuses that is capable of extending to surrounding structures. We describe a patient with osteoma of the frontal sinus who presented with left proptosis.

INTRODUCTION:

Osteoma is the most common benign tumor of the nose and paranasal sinuses, and the frontal sinus is its more frequent location. Paranasal sinus osteoma is a slow growing, encapsulated bony tumor that may be commonly asymptomatic, being detected incidentally in 1% of plain sinus radiographs or in 3% of sinus computerized tomographic scans. Osteomas are a frequent cause of mucoceles and sinusitis due to blockage of the nasal ducts, but they can also present with more dramatic signs, such as orbital or intracranial invasion. If larger and invading the orbit, they result in proptosis and/or globe displacement and ocular motility problems.

We describe a patient with osteoma of the frontal sinus who presented with left proptosis. To the best of our knowledge, this is the rare case which has been presented osteoma associated with proptosis of the eyeball.

CASE:

A 60 year-old man presented with left eye lid edema and periorbital swelling. At physical examination, inferior lateral displacement of the left eyeball and proptosis were detected.

Fundoscopic examination revealed no papilledema or evidence of optic atrophy

Anteroposterior x-ray of the skull showed a large, dense, mushroom shaped mass projecting into the left orbit from the orbital roof (Figure 1).

Axial and coronal computed tomography images revealed a 3.5x3x4 cm well-defined, multilobulated high density tumor, originated from the superior wall of the frontal sinus and involving the majority of the anterior superior left orbital region. Extension into the orbit with narrow neck was noted. The mass had displaced the left superior rectus muscle and bulbus oculi inferiorly.

On the basis of the x-ray and CT findings, the diagnosis of a large osteoma of the frontal sinus was made.

DISCUSSION:

Symptoms referable to frontal sinus osteomas are variable and usually proportional to the size of the tumor. Many small osteomas are asymptomatic. A progressively enlarging osteoma can, although rarely, outgrow the sinus walls causing forehead deformity, intraorbital or intracranial complications.

The etiology of osteomas is controversial. The most accepted theories are embryologic, traumatic or infectious causes. In favor of the developmental theory is the fact that many osteomas appear to rise at the junction of the ethmoid and
With the optic canal and optic nerve is well shown in axial section of the roof of the orbit. The relationship of the tumor tissue involvement. The orbital extensions are well defined in from other bone tumors, and from fibrous dysplasia. Spiral CT or magnetic resonance imaging (MRI) of osseous lesions are easily demonstrated by plain radiographs, CT or magnetic resonance imaging (MRI) as localized, isolated, markedly radiodense lesions resting on the floor of the sinus and expanding the involved sinus with or without orbital or intracranial extension.

These findings usually consent to differentiate osteomas from other bone tumors, and from fibrous dysplasia. Spiral CT helps to give a three-dimensional reconstruction of the tumor. MRI is important in the definition of dural or soft tissue involvement. The orbital extensions are well defined in the coronal and sagittal images; which provide a good evaluation of the roof of the orbit. The relationship of the tumor with the optic canal and optic nerve is well shown in axial sections. Radionuclide bone scan can help to differentiate an actively growing lesion (“hot”) from a stable lesion (“cold”). Orbital venography has been used to demonstrate compression of the superior ophthalmic vein.

No treatment recommended for asymptomatic osteomas, especially in elderly patients. They can be followed radiographically. If significant growth or clinical sign is shown, a more aggressive posture could be used. The type of procedure selected depends on the location and extent of the osteomas and the nature of any existing complications.

In the orbital region, anterior lesions can be removed via an anterior orbitotomy, while more posterior tumors require an orbitocranial procedure.

Fibrous dysplasia has been described in three forms: monostotic, polyostotic, and McCune-Albright syndrome. In the skull, a grossly expansile, sclerotic lesions are seen. Lesions do not really need to be diagnosed by biopsy, as the appearances are usually characteristic.

Prognosis is worse when the lesions occur early in life. Cranial nerve palsies, raised intracranial pressure, and nasolacrimal duct and nasal obstruction can also occur.

In conclusion, frontal sinus osteomas can cause proptosis with orbital extension. It must be kept in mind for differential diagnosis of proptosis. Osteoma associated with fibrous dysplasia have not been described previously. Both of them has unknown etiology and originated from benign proliferation of bony tissue. The coincidence in our case can be explained by similar etiologies.

**REFERENCE**