Orbital Osteoma

Gina M. Rogers, MD and Keith D. Carter, MD
June 3, 2011

Chief Complaint: Left eyelid mass

History of Present Illness: A healthy 20 year-old woman presented to the Oculoplastics Clinic with a 9-month history of left upper lid droopiness. Over the same period of time, she also noted a "bump" at the nasal aspect of her upper eyelid and felt that it was increasing in size. She denied any vision changes, ocular pain, pain with eye movement, or headaches. A complete review of systems was negative.

Past Ocular History: Myopia

Past Medical History: Non-contributory

Medications: None

Review of Systems: Negative

OCULAR EXAMINATION:

Visual acuity with correction:

- Right (OD): 20/20
- Left (OS): 20/20

Pupils: Briskly reactive without relative afferent pupillary defect

Extraocular motility: Full OU

Intraocular pressure: 17 mmHg OD, 18 mmHg OS

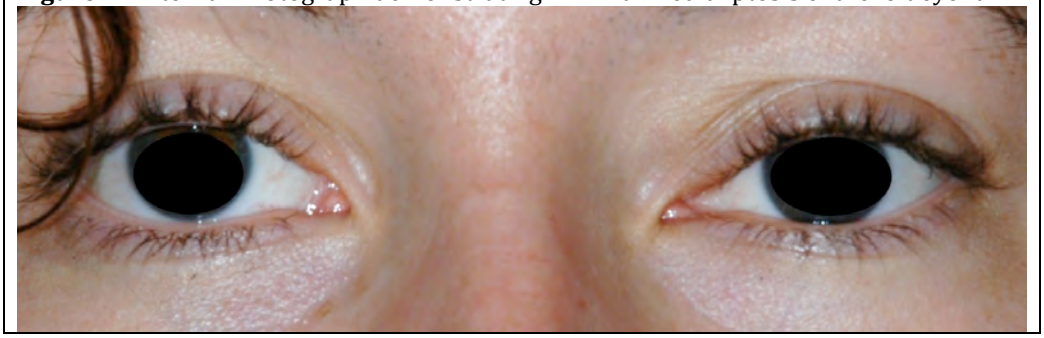
External Exam

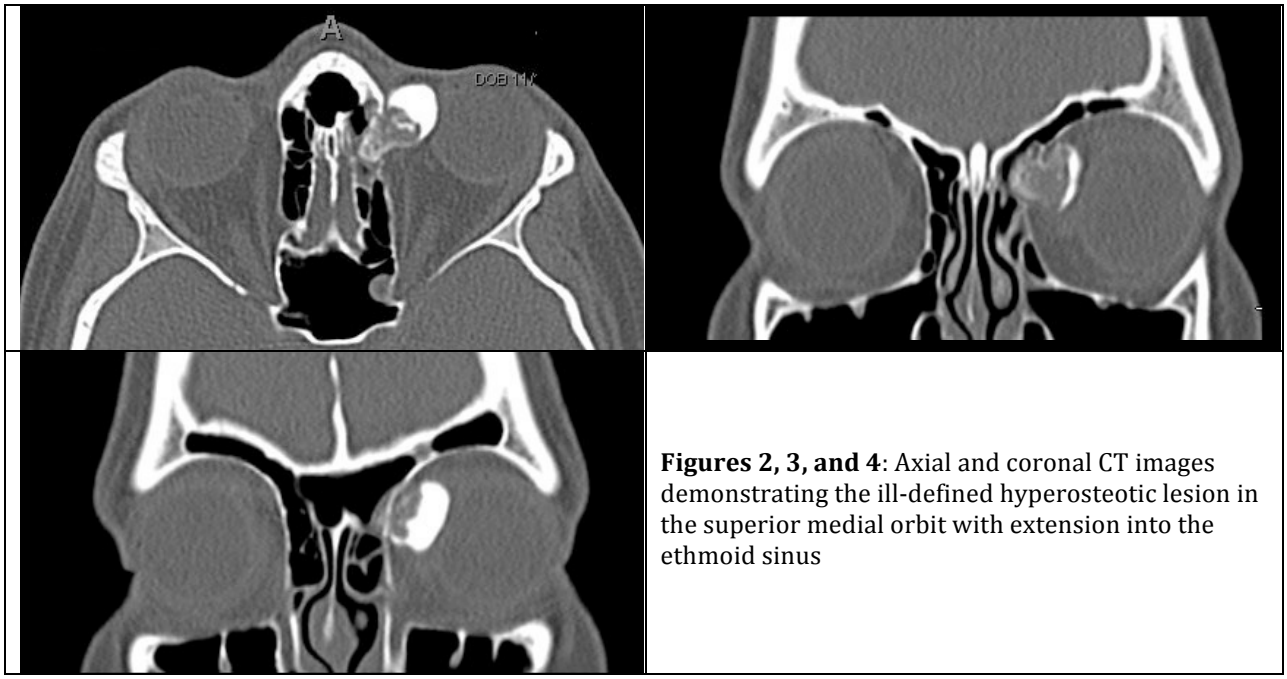
	Right	Left
External	Normal	Fullness of superonasal orbit
Exophthalmometry	17 mm	18 mm
Palpebral Fissure	10 mm	9 mm
Margin Reflex Distance 1	4 mm	4 mm with medial ptosis
Palpation	Within normal limits	Superonasal immobile, hard, smooth lesion

Slit lamp exam: Normal OU

Dilated fundus exam: Normal disc with 0.2 cup to disc ratio and normal macula, vessels and periphery OU

Figure 1: External Photograph demonstrating minimal medial ptosis of the left eyelid



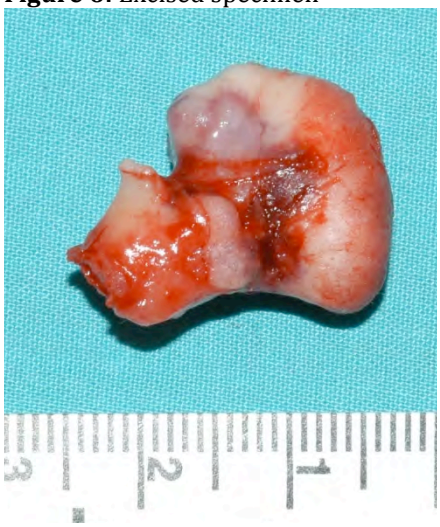


Figures 2, 3, and 4: Axial and coronal CT images demonstrating the ill-defined hyperosteotic lesion in the superior medial orbit with extension into the ethmoid sinus

COURSE:
Given the history of recent growth, the decision was made to perform an excisional biopsy of the lesion. The patient was taken to the operating room, where an anterior orbitotomy via an upper lid crease incision was performed. The dissection was continued superiorly in the preseptal plane to the level of the orbital rim superonasally and continued further through the orbital septum. The tumor and its extent was identified (Figure 5). The lesion became freely mobile once the ethmoid sinus was entered. Dissection continued until the mass was free of its attachments and removed (Figure 6). Anatomic pathology demonstrated histopathologic findings consistent with an osteoid osteoma and no evidence of atypia. The patient had no post-operative complications and is doing well.

Figure 5: Intra-operative photograph

Figure 6: Excised specimen



DISCUSSION:

Primary orbital bone tumors constitute a very small percentage of all orbital tumors. More often, osteomas originate from the paranasal sinuses. Among the bony orbital tumors, fibrous dysplasias and osteomas are the most commonly encountered entities (Selva et al 2004).

An osteoid osteoma is a benign skeletal neoplasm of unknown etiology that is composed of osteoid and woven bones. Osteoid osteomas can occur in any bone, but in approximately two thirds of patients, the appendicular skeleton is involved. These lesions are encountered infrequently in the skull and facial bones, and they are usually smaller than 1.5 cm in diameter when they occur in these locations (Greenspan 1993). Osteomas are slow growing lesions that do not metastasize.

A review of systems is important to perform because if joints are involved, pain and swelling may be among the presenting symptoms. Skull-based osteomas are often completely asymptomatic, unless they arise in an area that compromises their vision or hearing. Often, these lesions are detected on imaging inadvertently during a workup for another reason (Benatiya Andaloussi et al 2006).

Osteoid osteomas generally occur in the frontal and ethmoid bones (Sires et al 1999). Radiographically, these tumors are well-circumscribed with dense cortical sclerosis surrounding a radiolucent nidus. Grossly, the lesion has a glistening, white to pink color and is either smooth or with rounded protuberances often described as being "knob-like." The interface between the osteoma and surrounding bone is usually abrupt.

Histopathologically, these lesions have a central nidus of loose fibrovascular tissue surrounded by irregular trabeculae of bone and osteoid (unmineralized, organic bone matrix prior to bone maturation). The amount of osseous (mineralized, mature bone) and osteoid tissue varies within the nidus and is reflected in its radiologic opacity.

Primary Orbital Bony Tumors

Benign	Malignant
Osteoid osteoma	Osteosarcoma
Fibrous dysplasia	Chondrosarcoma
Ossifying fibroma	Mesenchymal chondrosarcoma
Osteoblastoma	Ewing sarcoma
Chondroma	
Giant cell tumor	

DIAGNOSIS: Orbital osteoid osteoma

Epidemiology: ▪ Typically occur in a younger population (Greenspan 1993) ▪ Majority of cases involve appendicular skeleton, rare bony tumor of the orbit	**Signs:** ▪ If in the orbit, the lesion can displace structures leading to proptosis, ptosis, motility deficit, optic compression, or decreased visual acuity ▪ Typically, well-circumscribed lesions with radio-lucent centers surrounded by radio-opaque rim
Symptoms: ▪ Skull based lesions are usually asymptomatic ▪ Orbital lesions can lead to pain, visible deformity from the tumor, decreased extraocular motility, or loss of vision	**Treatment:** ▪ Excision and histopathologic examination to exclude a malignancy

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Suggested Citation Format: Rogers GM, Carter KD. Orbital Osteoma. EyeRounds.org. June 3, 2011; Available from: http://EyeRounds.org/cases/133-orbital-osteoma.htm