**Left Frontoethmoidal Mass—a case for imaging a presumed preseptal cellulitis**

Abstract

This case of a frontoethmoidal mucocele will emphasize the importance of ocular imaging when dealing with a suspicious presumed preseptal cellulitis. It will go over clinical presentations of an orbital mass and urgency of referral.

I. Case History

**CC:** A 66 YOWF presents with a swollen left, painful eye for over 1 month. She had been seen in 4 different optometry clinics including the ER and was examined by six different doctors over the course of 3 months. Her ocular history included cataract surgery OU and treatment for a preseptal cellulitis OS, sinus infection and allergic conjunctivitis OS. She had reported diplopia on right gaze one week prior to this examination. She had been treated with Augmentin 5 weeks prior to this appointment for a presumed left preseptal cellulitis followed by Bactrim 2.5 weeks later. At the time of her presentation, she was no longer on any antibiotics. She reported feeling very ill.

**Ocular hx:** reading glasses, cataract surgery OU

**Medical hx:** HTN, spinal stenosis, IBS

**Family Hx:** Lung Cancer (Father), Ovarian Cancer (mother)

**Current Meds:** None

II. Initial Clinical Findings

**BCVA:** 20/20 OD, 20/25 OS

Pupils: PERLLA, (-) APD

**CVF:** Full OD/OS

EOM's diplopia reported on right gaze, otherwise FROM OU

Biomicroscopy OD unremarkable

Biomicroscopy OS:

Adnexa: Periorbital edema 360 degrees. Slight proptosis with facial asymmetry noted (OS sitting lower than OD)

Upper Lid: Tender bump nodule- superior nasal

Temperature: 98 Degrees Fahrenheit

**CT Scan**

Patient was sent for a CT scan and results were as follows: “soft tissue mass with local invasion identified in the left ethmoid air cells and left orbit. Invasion of the frontal sinuses, left nasolacrimal duct region and possibly the cribriform plate suspected. Appearance is concerning for a squamous cell carcinoma, inverted papilloma or other locally aggressive neoplastic process.”

Subsequent pathology revealed a frontoethmoidal mucocele

III. Differential diagnoses

Primary: Orbital Mass (due to proptosis)

Orbital Cellulitis

Presepetal Cellulitis

Orbital Apex syndrome

Sinusitis

IV. Diagnosis/Discussion

Importance of performing a cranial nerve workup exam including a DFE on a presumed preseptal cellulitis

Differentiating a preseptal cellulitis from an orbital cellulitis or orbital mass

Frontoethmoidal mucoceles and their ocular presentations

Importance of imaging any non-axial or axial unilateral orbital proptosis

Imaging a presumed preseptal cellulitis if there is no improvement with 24-48 hours or if there is re-occurrence

Where to refer and urgency of referral for a potential ethmoid/frontal sinus mass. (picture of the patient’s CT scan)
V. Management
Sent patient to the ER for a CT scan
After consultation with an ENT surgeon sent patient in an ambulance to a hospital with an on call ENT surgeon, and ophthalmic plastic and reconstructive surgeon.
Assessing the dangers of a mucocele
Surgery performed: left ethmoidectomy and frontal sinusotomy.
Mucocele re-occurrence rate and follow up intervals for optometry

VI. Conclusion

Clinical pearls when deciding whether to image a presumed pre-septal cellulitis

- Cranial nerve involvement (cranial nerve assessment of II, III,IV,V (facial sensation of first and second division), VI) including a DFE to assess if nerve is swollen or any optic neuropathy is present
- Diplopia
- Any re-occurring presumed pre-septal cellulitis or if a presumed pre-septal cellulitis does not significantly improve with oral antibiotics in 24-48 hours.
- Any non-axial displacement of the globe or axial exophthalmos
- Any orbital rim mass
- Any signs of an orbital cellulitis (red eye, headache/pressure/congestion, fever, pain on eye movement, decreased or blurred vision etc.)

Prognosis for an orbital sinus mass
Final diagnosis from surgery center: Frontoethmoidal mucocele on the left side causing significant effacement on the left orbit

Bibliography/Sources