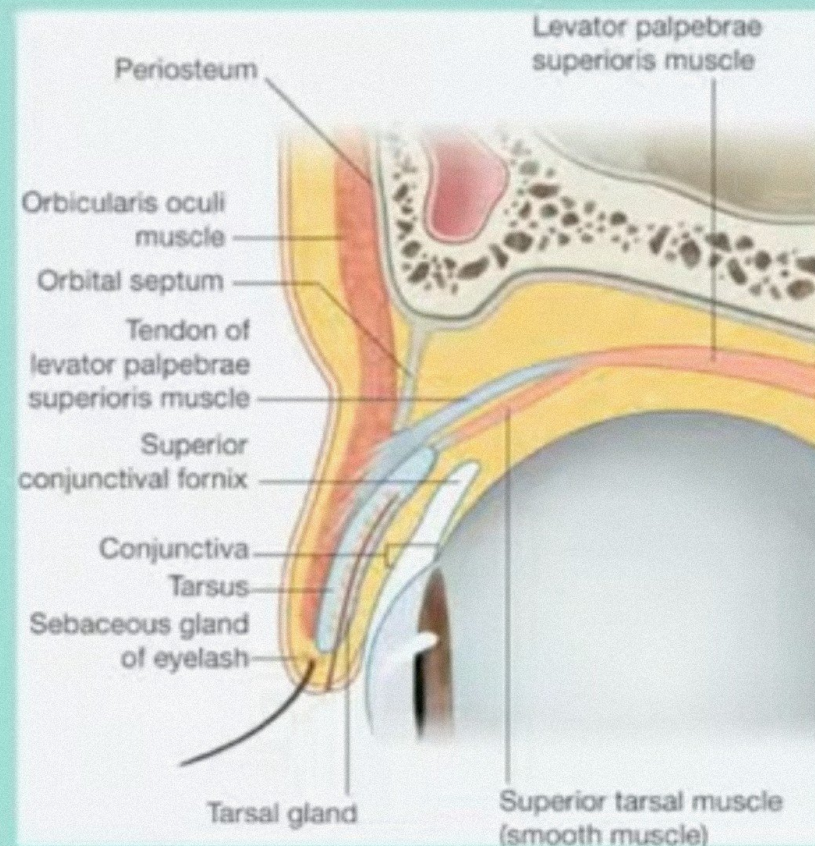


Ophthalmology: Preseptal and Orbital Cellulitis

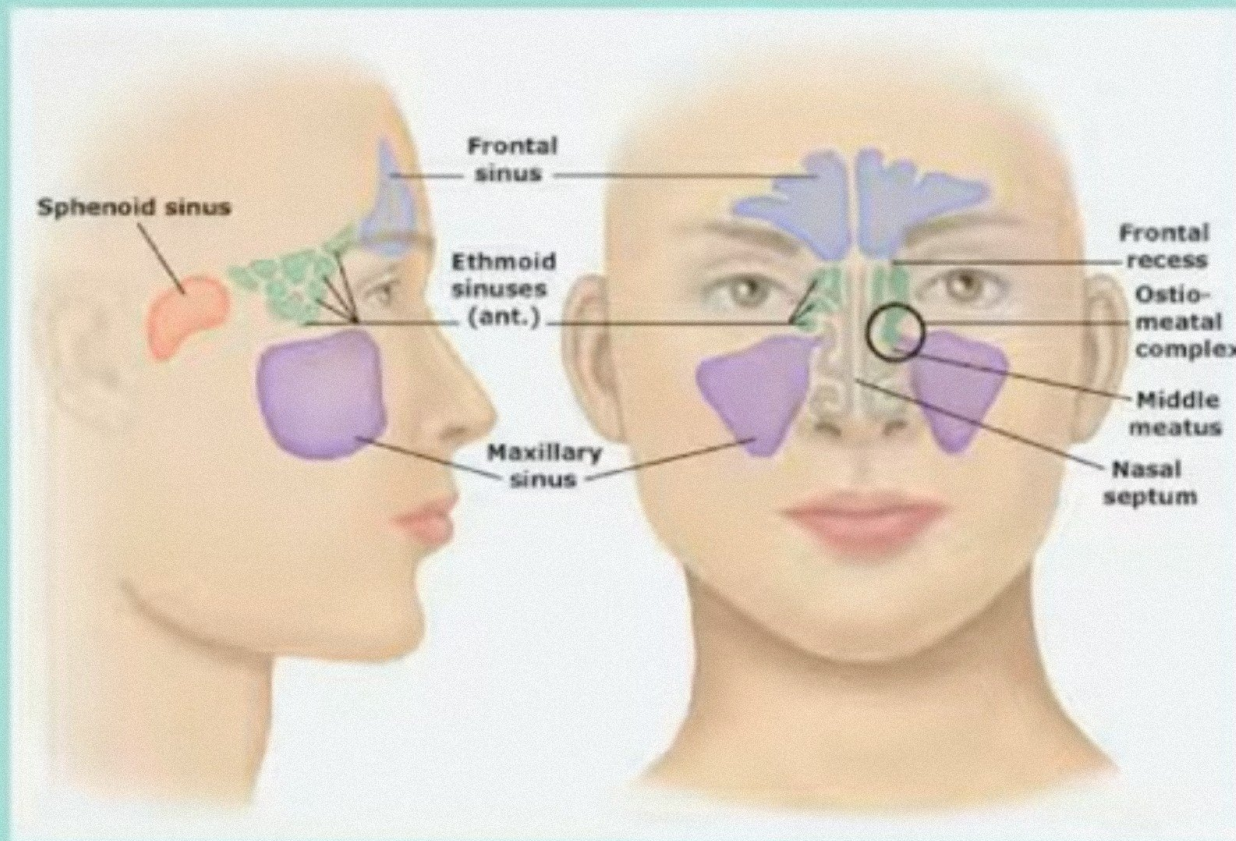
Surrounding tissue inflammation

- ◆ Preseptal cellulitis
- ◆ Orbital cellulitis

Orbital septum



Sinuses



Preseptal Cellulitis

- ◆ Common infection of the soft tissues anterior to the orbital septum, including the eye lids and surrounding tissue; marked by edema and erythema
 - ◆ Bacterial infection (esp. *Staph*, *Strep*, *H. influenzae* type B); usually antecedes an URTI, sinusitis, dacryocystitis, blepharitis
 - ◆ Primarily a disease of pediatrics
- ◆ RFs: URTI, sinusitis, concurrent varicella infection, asthma, nasal polyps, neutropenia, immunocompromised status, DM
- ◆ Sx: Pts typically present w/ eyelid edema and redness (which may prevent or hinder opening of the eye lids); conjunctival injection (or conjunctivitis), tearing. There may be mild blurring, but vision should not be significantly affected.

Preseptal Cellulitis



Preseptal Cellulitis



Preseptal Cellulitis



Preseptal Cellulitis

- ◆ *Px: A good ocular exam is of the utmost importance in order to differentiate preseptal cellulitis from orbital cellulitis.*
 - ◆ Inspect the outer eye, especially the lids and surrounding skin; percuss the sinuses for tenderness
 - ◆ Document the range of motion of the eyes, noting any pain
 - ◆ Document the pupillary response
 - ◆ Document any visual impairment
 - ◆ Perform a fundal examination
- ◆ *Dx: The diagnosis for preseptal cellulitis is clinical. However, an orbital CT should be obtained if there are any factors suggesting orbital cellulitis, such as limited ocular ROM, reduced pupillary response, severe visual impairment, or proptosis.*
 - ◆ Blood cultures are not needed unless the pt shows sign of sepsis
 - ◆ Samples of any purulent material should be sent for culture

Preseptal Cellulitis

- ◆ Management
 - ◆ **Broad-spectrum antibiotics** directed especially towards URTI organisms. An example may be amoxicillin-clavulanate or a 2^o or 3^o generation cephalosporin.
 - ◆ **Ophthalmology consult** for all pediatric pts (and for adult pts if orbital cellulitis cannot be ruled out)
 - ◆ Consider LP for neonates as well as pts w/ signs of meningitis
 - ◆ Drainage for any eyelid abscesses or acute dacryocystitis
- ◆ Admission is based on the deferral of the primary provider and consulting ophthalmologist

Orbital Cellulitis

- ◆ Infection of the adnexa and soft tissues surrounding the orbit *posterior to the orbital septum*, surrounding the globe
- ◆ The most common cause is direct extension, especially from the ethmoid sinuses. It may also spread from dacryocystitis, dental infections, or phlebitis of surrounding veins.
 - ◆ Other causes include incidental or surgical trauma, and hematogenous spread
- ◆ Sx: Presents similarly to preseptal cellulitis: recent URTI is common, as well as fever and malaise. There is usually redness and edema of the lids.
 - ◆ Distinguishing factors include proptosis, ophthalmoplegia, and papilledema

Orbital Cellulitis



Orbital Cellulitis



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Orbital Cellulitis



Orbital Cellulitis



Orbital Cellulitis



Orbital Cellulitis

- ◆ Dx: If orbital cellulitis is suspected, the most important first step is an high-resolution orbital CT, which will confirm the diagnosis. Blood cultures and cultures of any purulent material should be obtained.

Orbital Cellulitis

- ◆ Management
 - ◆ Admission
 - ◆ Broad-spectrum IV antibiotics (after taking blood cx): i.e., piperacillin-tazobactam, cefuroxime
 - ◆ Consider adding vancomycin in endemic areas
 - ◆ In immunocompromised pts and in pts w/ concurrent DKA, consider the addition of amphotericin B
 - ◆ Lumbar puncture in neonates and pts w/ meningismus
 - ◆ Ophthalmology consult, infectious disease consult
 - ◆ Frequent vision checks; repeat CT if any clinical worsening
- ◆ Complications: Vision loss (up to 11%), meningitis, cavernous sinus thrombosis, brain abscess, subperiosteal abscess

In summary...

- ◆ Both preseptal and orbital cellulitis can have:
 - ◆ Fever
 - ◆ Eyelid erythema and edema
 - ◆ Pain
 - ◆ Red eye
 - ◆ Fever/malaise
- ◆ But, orbital cellulitis tends to also have:
 - ◆ Ophthalmoplegia
 - ◆ Proptosis
 - ◆ Decreased vision
 - ◆ Papilledema