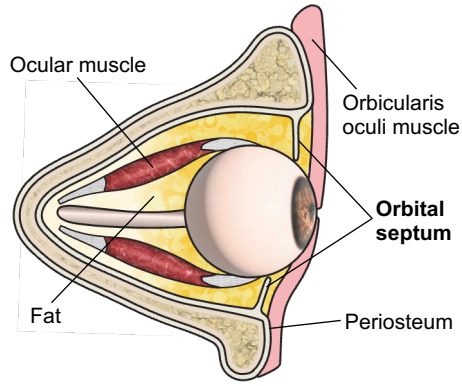
Periorbital Vs. Orbital Cellulitis

Periorbital (preseptal) cellulitis: infection of the soft tissues **anterior to the orbital septum**

Orbital cellulitis: infection involving the **contents of the orbit**, including fat and ocular muscles



PRESENTATION		
CLINICAL FEATURES	**PERIORBITAL**	**ORBITAL**
Eyelid swelling and erythema	Present	Present
Tenderness	Often present	Present
Extraocular movements	Normal	Impaired
Pain with EOM	Absent	Present
Vision impairment	Absent	May be present
Proptosis	Absent	Often present
Ophthalmoplegia	Absent	Present
Chemosis	Absent	May be present
Fever	May be present	Present
Patient age	Typically, toddlers or young children	Older children/ adolescents

DIAGNOSIS

INVESTIGATIONS

- For periorbital cellulitis, investigations are generally not necessary
- For suspected orbital cellulitis, obtain a **blood culture** prior to antibiotic initiation

- **Computed tomography (CT) of the orbits and sinuses** is used to distinguish periorbital from orbital cellulitis if it cannot be distinguished clinically
- **CT findings in orbital cellulitis:** inflammation of extraocular muscles, fat stranding, and displacement of the globe anteriorly

Periorbital cellulitis seldom leads to serious complications; however, **orbital cellulitis** has **serious complications including vision loss** and **death.**

PATHOPHYSIOLOGY

- **Periorbital cellulitis:** hematogenous spread, local trauma, insect or animal bites, foreign bodies
- **Orbital cellulitis:** bacterial rhinosinusitis (most common), trauma, ophthalmic surgery, foreign body, dental infections, middle ear infections
- **Common microbes:** *Staphylococcus aureus*, *Streptococcus pneumoniae*, other streptococci, and anaerobes
- Orbital cellulitis can be polymicrobial

COMPLICATIONS

- Orbital abscess
- Subperiosteal abscess
- Extraorbital extension
- Vision loss
- Intracranial extension (empyema, brain abscess, meningitis, cavernous sinus thrombosis, or dural sinus thrombosis)

MANAGEMENT

Periorbital cellulitis	Orbital cellulitis
▪ Antibiotic monotherapy with amoxicillin-clavulanic acid PO if afebrile and mild infection ▪ If moderate/severe infection, cefuroxime or ceftriaxone IV ▪ Consider adding coverage against MRSA (TMP-SMX or clindamycin) if skin trauma present, MRSA risk factors, or if minimal clinical improvement within 24-48 hours	▪ Antibiotic triple therapy with vancomycin + ceftriaxone + metronidazole ▪ Consultation with otolaryngology and/or ophthalmology ▪ May require surgery for source control (abscess drainage) or to relieve pressure

If the distinction is unclear, treat as an orbital cellulitis as the complications can be life threatening.

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