

Periorbital/Orbital Cellulitis

Clinical Practice Guideline

Exclusion Criteria:

- Less than 1 year old
- Traumatic eye injury
- Prior eye or sinus surgery
- Abnormal eye or maxillary-facial anatomy
- Known immunocompromise or malignancy
- Clinical signs of severe sepsis/shock

Patient presents with diffusely red, tender, swollen eyelid/periorbital area

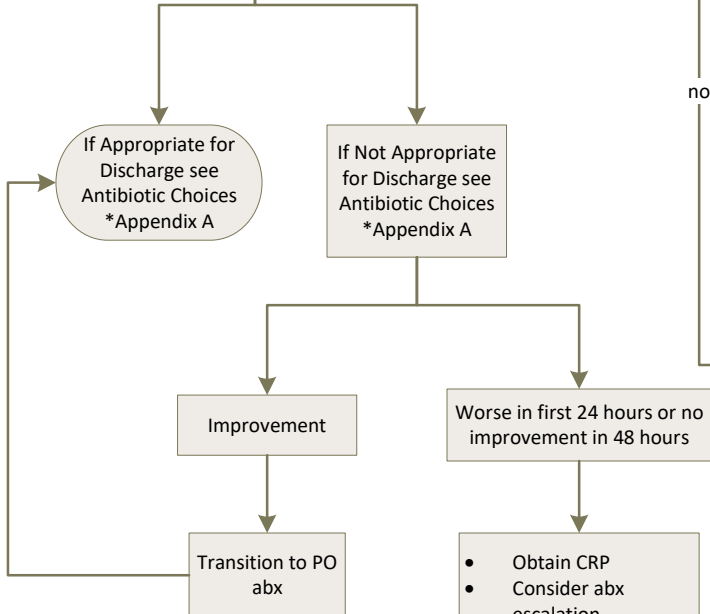
***High Risk Patients include any patients with following conditions/circumstances:**

- Failed course of appropriate outpatient antibiotics
- Use of any immune-modulating medications (ie. Chronic steroids, biologics, chemotherapeutics)
 - Concern for CNS infection
 - ANC <1000
- Poorly controlled diabetes mellitus (Hgb A1c >7.5)

Any proptosis, pain or restricted EOM, severe or persistent headache, vision changes
OR ill appearance +/- fever
OR age <3 yo/limited exam
OR meets *high risk criteria

Consider Periorbital Cellulitis

Consider Orbital Cellulitis



- Imaging**
- Urgent CT orbits with IV contrast using STEALTH protocol
 - Consider MRI if concern for intracranial involvement (discuss with Radiology)
- Labs**
- CBC with diff
 - BUN/Cr
 - CRP
 - BCX, if meeting *high risk criteria, ill appearing, or unimmunized

CT reveals orbital involvement

- Initial Management of Orbital Cellulitis**
- Admit to General Wards**
- Nutrition:**
- NPO
- Medical Management**
- Initiate IV antibiotics (first dose in Emergency Department) *Appendix A
 - Nasal therapies on floor if sinus involvement/no known entry site *Appendix B
- Consults**
- ENT
 - Ophthalmology
 - Neurosurgery if CNS extension
 - ID if *high risk criteria or antibiotics needed for >2 weeks
 - Endocrinology if poorly controlled DM

Worsening in the first 24 hours or NO improvement in the first 48 hours

- Repeat CRP
- Consider Repeat CT vs MRI/MRV

Imaging reveals improvement

- Consult ID
- Surgical Considerations

Transition to oral antibiotics when patient has improved edema, able to open eye, is afebrile for 24- 48 hrs and has full EOM

Appendix A

Diagnosis	Microbes to Consider	First Line Treatment	Treatment Alternative (Allergy to first line therapy)	Duration	Special Considerations
Orbital Cellulitis	S. pneumo, S pyogenes, anginosus group Streptococci (S. anginosus, constellatus, & intermedius)H. flu, M. catarrhalis, S. aureus, oral anaerobes. +Consider Gram negative rods s/p trauma	Ampicillin/sulbactam 75 mg/kg/dose (max 2g ampicillin/dose) q6h Indication: Head/Ear/Eye/Neck/Throat Infection	Clindamycin 13 mg/kg/dose (max 600 mg/dose) q8h Indication: Head/Ear/Eye/Neck/Throat Infection	14-21 days (Consider >14 days if presence of abscess, complicated course or slow to improve)	If there is concern for CNS extension on exam¹ or imaging:
		MRSA suspected²: Clindamycin 13 mg/kg/dose (max 600 mg/dose) q8h Indication: Head/Ear/Eye/Neck/Throat Infection	*If unimmunized for age add Ceftriaxone 50 mg/kg/dose (max 2g/dose) q24h		Vancomycin panel Indication: Head/Ear/Eye/Neck/Throat Infection
		History of Clindamycin-resistant MRSA³:	Concern for imminent sight threatening infection based upon exam by Ophthalmology:		Ceftriaxone 50 mg/kg/dose (max 2g/dose) q12h Indication: Head/Ear/Eye/Neck/Throat Infection
		Vancomycin panel Indication: Head/Ear/Eye/Neck/Throat Infection	Ampicillin/sulbactam 75 mg/kg/dose (max 2g ampicillin/dose) q6h Indication: Head/Ear/Eye/Neck/Throat Infection		Metronidazole 10 mg/kg/dose (max 500 mg/dose) q8h Indication: Head/Ear/Eye/Neck/Throat Infection
		AND	PLUS		
Add Ceftriaxone if unimmunized for age 50 mg/kg/dose (max 2g/dose) q24h Indication: Head/Ear/Eye/Neck/Throat Infection	Vancomycin panel – Indication: Head/Ear/Eye/Neck/Throat Infection		If surgery performed, tailor therapy based on operative culture results		
			If Penicillin Allergy (select all antimicrobials): Vancomycin panel – indication: Head/Ear/Eye/Neck/Throat Infection Ceftriaxone 50 mg/kg/dose (max 2g/dose) q12h Indication: Head/Ear/Eye/Neck/Throat Infection Metronidazole 10 mg/kg/dose (max 500 mg/dose) q8h Indication: Head/Ear/Eye/Neck/Throat Infection		
Periorbital Cellulitis	S. aureus, S. pyogenes, Coagulase-negative staph, oral anaerobes, Strep pneumo. H. flu now uncommon in immunized children.	Known Entry Site⁴		7 days	
		Oral Therapy:	Cephalosporin allergy or MRSA suspected:		
		Cephalexin 20 mg/kg/dose (max 1g/dose) q8h Indication: Head/Ear/Eye/Neck/Throat Infection Duration: 7 days	Clindamycin 13 mg/kg/dose (max 600) q8h Indication: Head/Ear/Eye/Neck/Throat Infection Duration: 7 days		
		IV Therapy:	Clindamycin Allergy:		
		Clindamycin 13 mg/kg/dose (max 600) q8h Indication: Head/Ear/Eye/Neck/Throat Infection Duration: 7 days	Vancomycin panel Indication: Head/Ear/Eye/Neck/Throat Infection Duration: 7 days		
		No known entry (often associated with sinusitis) or unimmunized			
		Oral Therapy:	IV Therapy:		
		Amoxicillin/clavulante 90 mg/kg/day (max 2g/dose) divided q12h Indication: Head/Ear/Eye/Neck/Throat Infection Duration: 7 days	Ampicillin/sulbactam 75 mg/kg/dose (max 2g ampicillin/dose) q6h Indication: Head/Ear/Eye/Neck/Throat Infection Duration: 7 days		
Penicillin Allergy: Clindamycin 13 mg/kg/dose (max 600 mg/dose) q8h Indication: Head/Ear/Eye/Neck/Throat Infection Duration: 7 days	Penicillin Allergy: Clindamycin 13 mg/kg/dose (max 600 mg/dose) q8h Indication: Head/Ear/Eye/Neck/Throat Infection Duration: 7 days				
¹ Signs of optic nerve or CNS involvement? · Change in visual acuity · Severe headache · Pupillary defect · Altered Mental Status · Bilateral symptoms · Seizure					
² MRSA suspected: history of MRSA infection or frequent SSTI in patient or immediate family members					
³ Approximately 80% of MRSA locally are susceptible to clindamycin. If patient has a history of clindamycin-resistant MRSA, add vancomycin to ampicillin-sulbactam					
⁴ Known entry site: Evidence of scratch or trauma on history or physical exam					

Appendix B

Systemic Steroids	
Systemic steroids are generally not recommended as there is no evidence that they improve recovery in orbital cellulitis. May consider on a case by case basis as per consultants	
Nasal Therapies in Orbital Cellulitis	
Age	Treatment
1-4 years old	Nasal Saline spray (Ocean Spray) TID
	*Oxymetazoline nasal spray: 1 spray in each nare twice daily; Maximum duration of therapy: 3 days
4 years or older	Nasal Saline spray (ie. Ocean Spray) TID
	(Could consider saline irrigation in child with more severe sinus disease after discussion with ENT)
	*Oxymetazoline nasal spray: 2 sprays in each nostril twice daily; Maximum duration of therapy: 3 days
	Upon completion of oxymetazoline start Fluticasone propionate: 1 spray (50 mcg/spray) in each nostril once a day
*Oxymetazoline FDA approved for children >6 years old and should only be used for pediatric inpatients under supervision	
Fluticasone approved for children aged 4yrs and older (once daily until 12yo; 1-2 sprays BID for children. >12yo and adults)	