

IRISH ASSOCIATION FOR
EMERGENCY
MEDICINE



IAEM Clinical Guideline

Periorbital and Orbital Cellulitis (Adults and Paediatrics)

Version 2

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DISCLAIMER

IAEM recognises that patients, their situations, Emergency Departments and staff all vary. These guidelines cannot cover all clinical scenarios. The ultimate responsibility for the interpretation and application of these guidelines, the use of current information and a patient's overall care and wellbeing resides with the treating clinician.

GLOSSARY OF TERMS

CNS:	Central nervous system
ED:	Emergency Department
RAPD:	Relative Afferent Pupillary Defect
IV	Intravenous
FBC	Full Blood Count
CRP	C-reactive Protein
ENT	Ear, Nose and Throat
CT	Computed Tomography
PO	Per Os (by mouth)
Children:	Patients aged from birth – date of 16 th birthday
Adults:	Patients aged 16 years and older

Periorbital and Orbital Cellulitis

INTRODUCTION

Periorbital and orbital cellulitis describe infections of the soft tissues surrounding the globe of the eye. This term covers 2 distinct clinical entities, namely:

- a. **Periorbital (Pre-septal) cellulitis**, i.e. infection anterior to the orbital septum.
and
- b. **Orbital (Post-septal) cellulitis**, i.e. infection posterior to the orbital septum.

The orbital septum is a fibrous tissue layer that extends from the periosteum of the orbital rim into the eyelids and provides an effective physical barrier against the spread of infection.

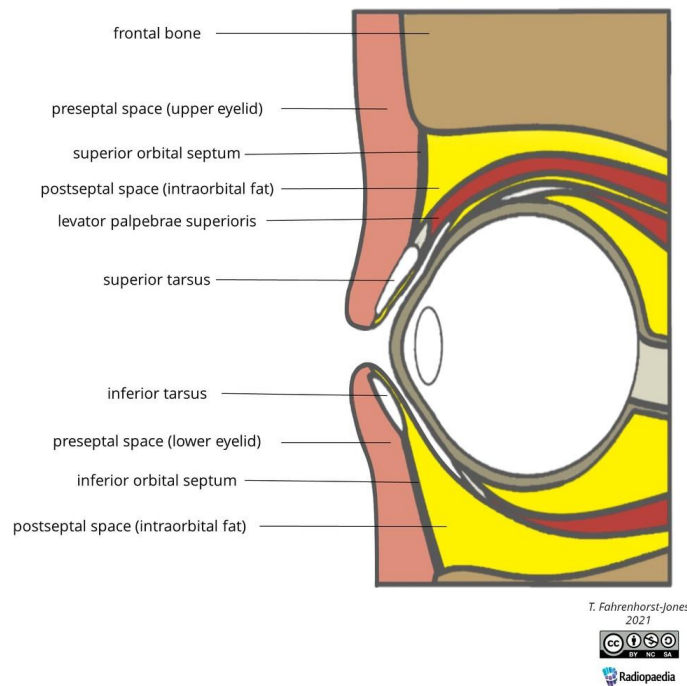


Image 1: Diagram illustrating the location of the orbital septum [1]. Image used under Creative Commons use policy.

Periorbital (Pre-septal) cellulitis is an infection confined to the anterior of the orbital septum. It can be caused by local spread from an existing eyelid or periocular infection eg. stye, chalazion, dacryocystitis etc., trauma or upper respiratory tract infection.

Orbital (Post-septal) cellulitis occurs when the infection breaches the orbital septum or occurs posterior to it. The majority of cases originate from local paranasal sinus infection, but can also rarely be caused by trauma, intra-orbital foreign body or haematogenous spread. This condition represents an emergency as it can lead to serious complications including loss of vision, cerebral sinus thrombosis and CNS infection.

PARAMETERS

Target audience: Clinical staff working in an ED /acute paediatric assessment facility involved in the assessment of children or adults presenting with suspected periorbital or orbital cellulitis

Patient population: Any patient presenting with features of suspected periorbital or orbital cellulitis. Infected eyelid lesions or dacryocystitis are amongst the most common causes of pre-septal cellulitis and may need to be treated in the same way as mild pre-septal cellulitis.

Exclusion criteria: Patients presenting with other localised eye infections e.g. blepharitis/conjunctivitis.

AIMS

The aim of this document is to provide guidance to clinical staff involved in the first line assessment and management of adults and children presenting with features suggestive of periorbital or orbital cellulitis.

ASSESSMENT

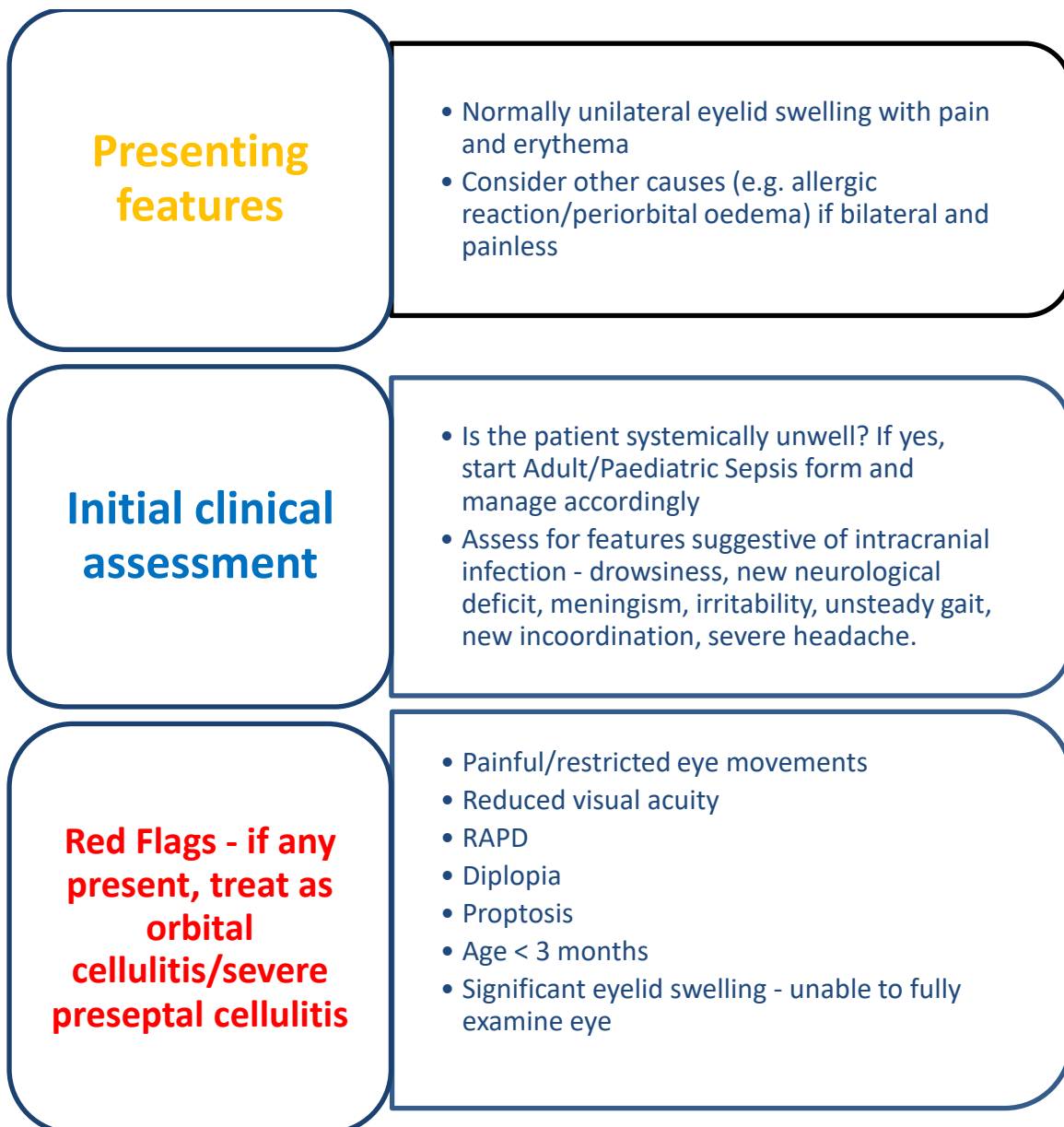


Figure 1: Suggested assessment flow for patients presenting with suspected periorbital cellulitis

If no evidence of sepsis/intracranial infection/red flags; assess for **features of mild peri-orbital (pre-septal) cellulitis**. **All criteria must be met.**

- Minimal swelling
- Able to fully examine eyes
- Sclera is white
- Normal eye movements
- Systemically well, afebrile

SAMPLE IMAGES OF PRESEPTAL AND ORBITAL CELLULITIS

Please note that the images below are a representation of the features of pre-septal and orbital cellulitis. They should not be relied upon solely to reach a diagnosis and each patient should be comprehensively evaluated clinically and with radiological studies as indicated.



*Image 2: Periorbital (Pre-septal) cellulitis [2].
Permission for use kindly granted by DFTB Skin
Deep.*



*Image 3: Orbital (post-septal) cellulitis [3]. Licence for
use granted by the BMJ Publishing Group.*

INVESTIGATIONS

Mild periorbital (pre-septal) cellulitis: None required

Patient with presence of 'red flags':

- IV access- Blood cultures, FBC, Renal profile, CRP
- Nasal swab for culture and sensitivity (or sinus swab if endoscopy planned by ENT team)
- Neuroimaging (contrast enhanced CT of Orbits, Sinuses +/- Brain)

MANAGEMENT

	Children (Per CHI guidelines): https://www.olchc.ie/healthcare-professionals/clinical-guidelines/antimicrobial-guidelines-2021.pdf	Adults
Mild periorbital (pre-septal) cellulitis	PO Co-amoxiclav or PO Cefalexin for 10-14 days	Refer to local antimicrobial guidelines
	Ensure adequate analgesia, safety netting (advise on features of Red Flags in Figure 1 above)	
Severe periorbital (pre-septal) cellulitis	IV Cefotaxime OR IV Ceftriaxone	Refer to local antimicrobial guidelines
Orbital cellulitis suspected or confirmed on imaging	IV Cefotaxime OR IV Ceftriaxone and IV Metronidazole	Refer to local antimicrobial guidelines

Table 1: Suggested antimicrobial management of periorbital infections

In patients requiring IV antibiotics, ensure:

- a. Urgent Ophthalmology and ENT consult.
- b. Children: Admission under General Paediatrics / ENT (depending on local resources and arrangements)
- c. Adults: Admission under Ophthalmology / ENT (depending on local resources and arrangements)
- d. Commencement of intranasal decongestant (Xylometazoline – dosing per BNF) if sinusitis is suspected as the source of infection
- e. 4 hourly eye (visual acuity, pupils and colour vision) and neuro-observation

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