In the Name of GOD

Management of Eye Infection condition

By: Dr. E.Vafadar Moradi
Assistant Professor of Emergency Medicine

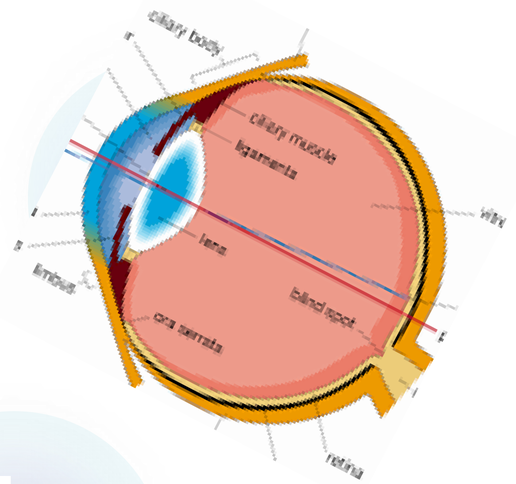
Infectioun Conditions

C

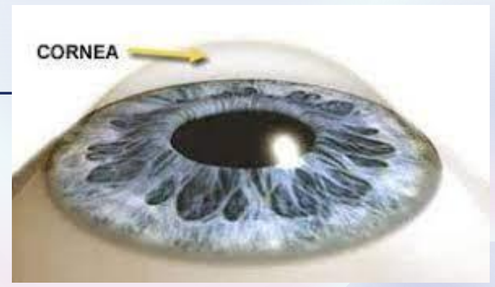
b

c

Conjunctiva

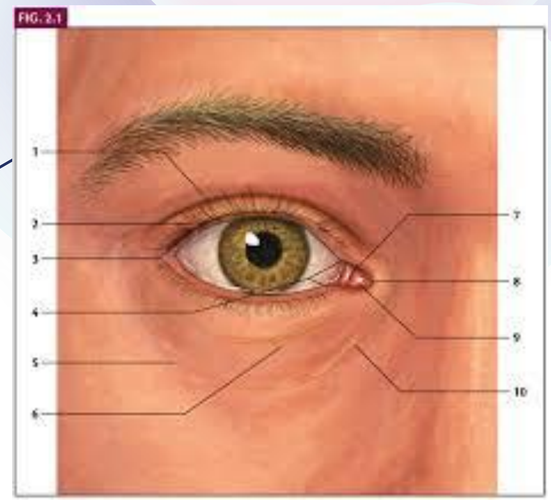


Cornea



The Globe

Eyelids and Periorbital area



Viral

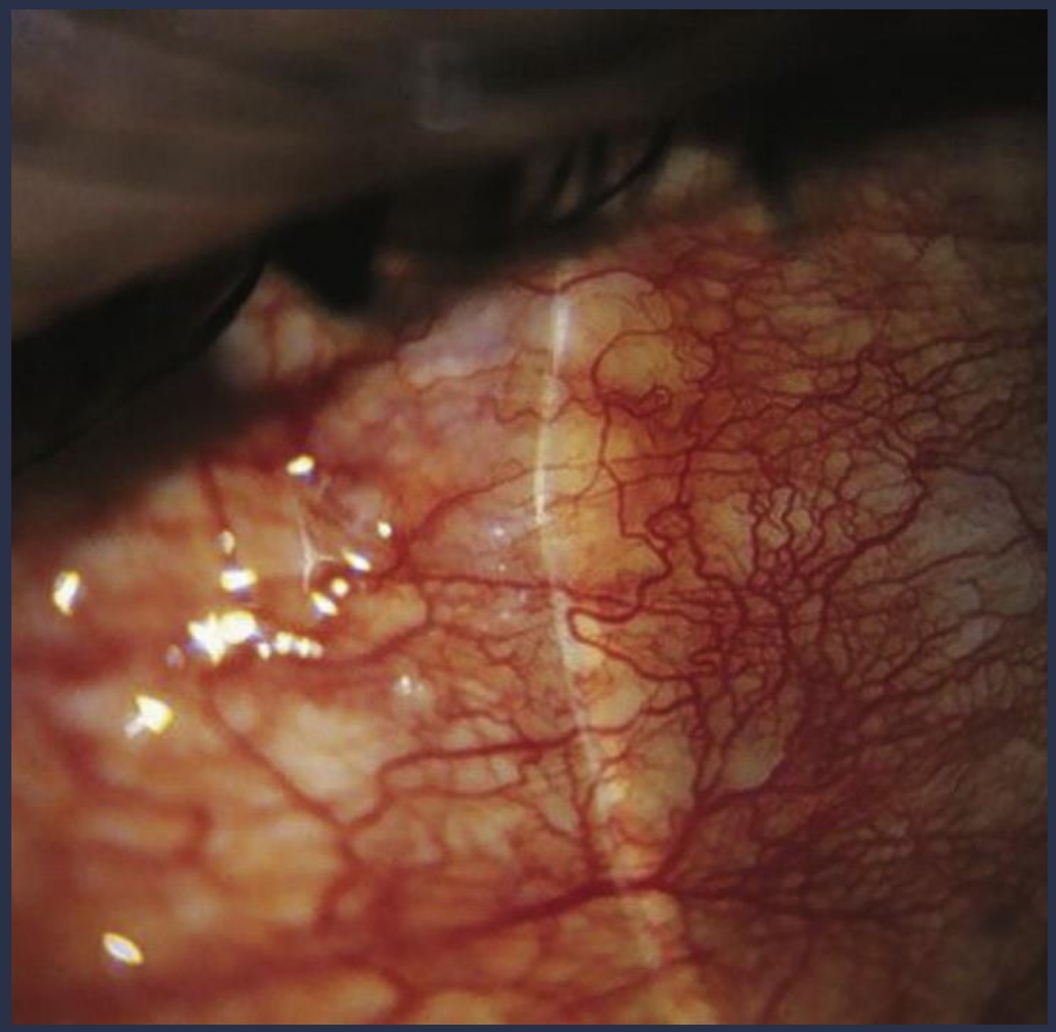
Allergic

The Conjunctive

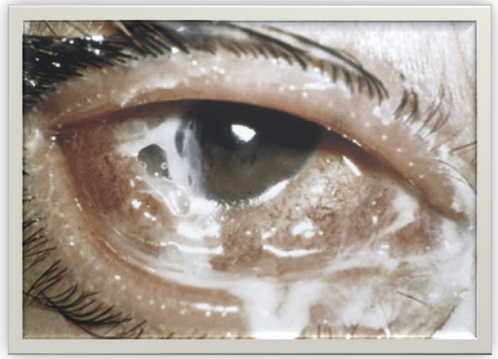
Bacterial

Ophthalmia Neonatorum

Clinical Features:



Causes:



Bacterial

Conjunctivitis from gonorrhea classically presents with copious purulent discharge and carries a high risk for corneal involvement and subsequent corneal perforation.

B

Allergic

This is not infectious per se, but it is considered in the differential diagnosis.

A

V

Viral

Classically preceded by a viral infection with upper respiratory symptoms, with sequential involvement of both eyes; however, many episodes of viral conjunctivitis have no preceding symptoms.

N

Ophthalmia Neonatrom

Develops during the first 30 days of life. While. *N. gonorrhoeae*, *Chlamydia,* and herpes simplex virus (HSV) Infection with *N. gonorrhoeae* manifests within 2 to 4 days after birth (but may take up to 20 days). **Examine the infant for evidence of systemic gonococcal infection.**

Diagnostic testing Management in ED

Most cases of conjunctivitis are **diagnosed clinically** and **do not require testing** from the ED. In cases where *Neisseria* is highly suspected, a gram stain and culture (or a polymerase chain reaction [PCR] test as done for genital samples) can aid in the diagnosis.

Allergic and Viral

Usually self limited.
Topical antibiotics should be avoided
Consider other etiologies if symptoms worsen after 2 to 3 days.
If inflammation is severe (with pseudomembranes or bleeding), then an ophthalmology evaluation in the ED for steroid treatment is recommended.

Bacterial

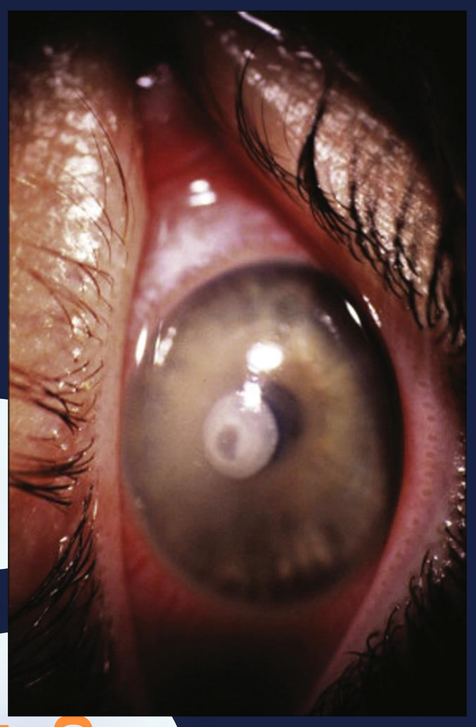
Tobramycin, ciprofloxacin, moxifloxacin, ofloxacin, azithromycin, and trimethoprim/polymixin B.

For suspected ***N. gonorrhoeae*** **conjunctivitis treatment involves ceftriaxone 1 g intramuscularly once or azithromycin 1 g orally if cephalosporin allergic.**

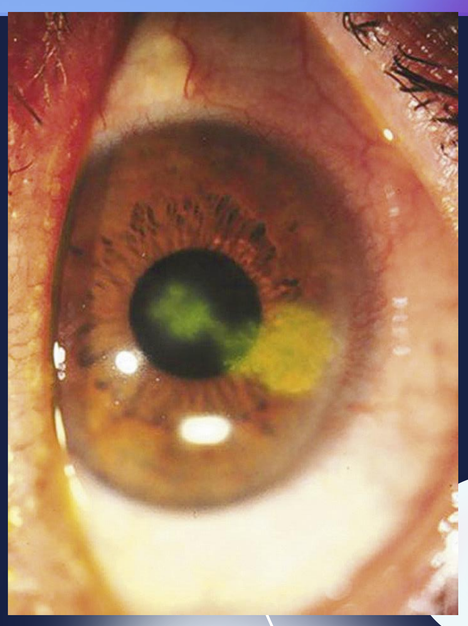
Ophthalmia Neonatorum

Hospitalization of neonates with blood and cerebrospinal fluid (CSF) examination may be indicated for ophthalmia neonatorum.
Evaluation for systemic involvement is indicated and ophthalmology consultation in the ED is warranted.

The Cornea



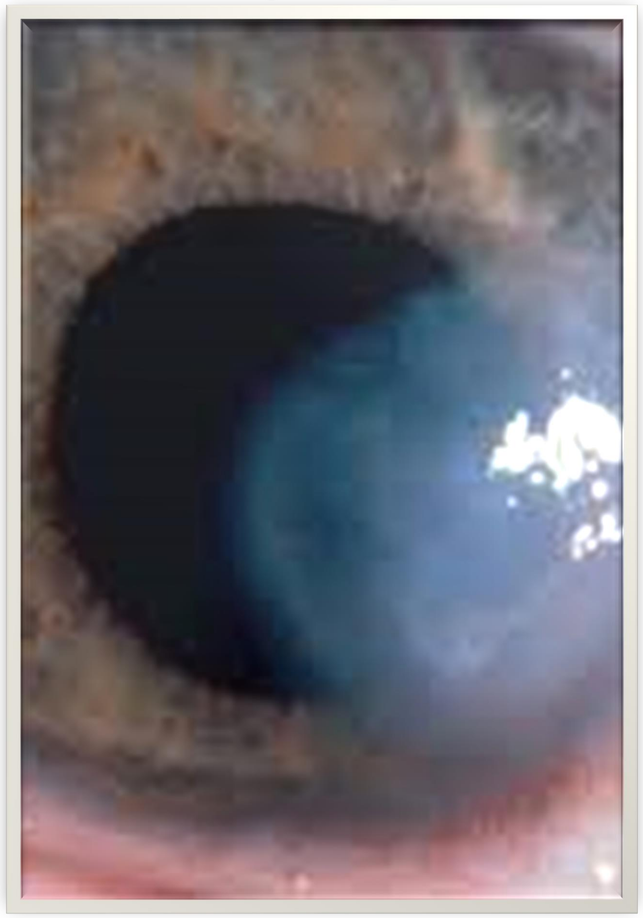
orneal Ulcer



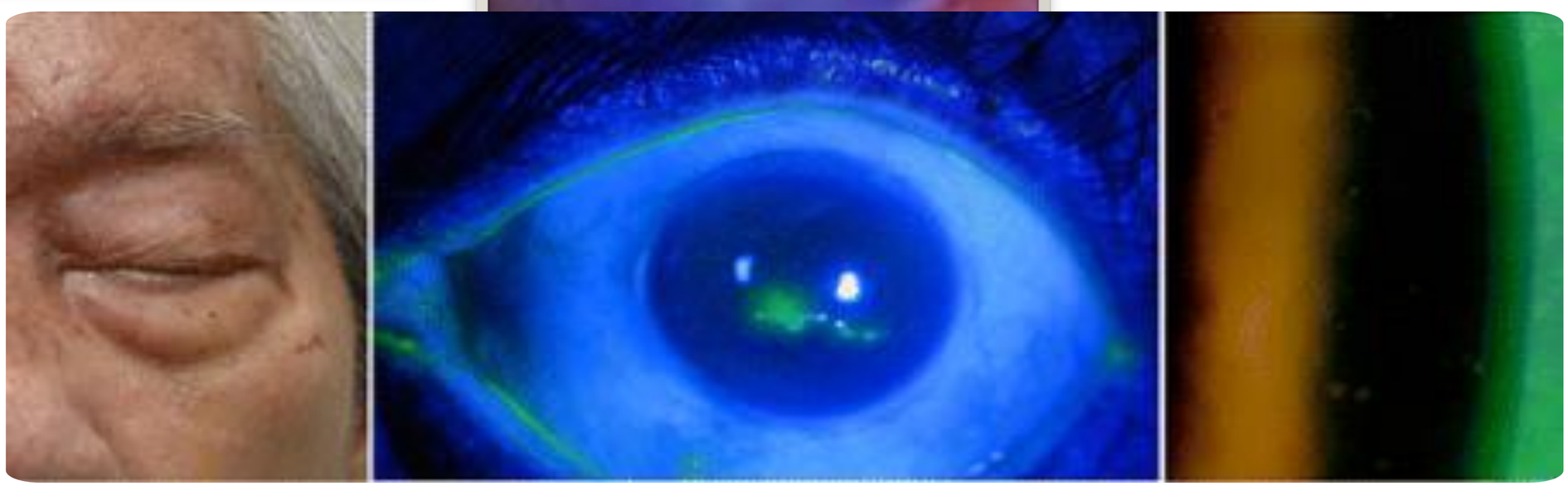
Herpes Simplex Keratitis

Herpes Zoster Keratitis

Head up edges



Dendritic lesion in Herpes Simplex



Herpes Zoster Keratitis

Massive X

Corneal ulcers and infiltrates.

Topical anti-microbial therapy for corneal ulcers and infiltrates is appropriate initial therapy, although systemic antibiotics are warranted for severe infections.

Steroids may be used to decrease inflammation but must be used with caution because they may exacerbate the clinical situation.

Herpes simplex keratitis.

Emergent ophthalmologic consultation is recommended, and the severity of the disease will dictate treatment. Herpes simplex keratitis is treated with topical antiviral agents.

Avoid topical steroids because they worsen infection.

Herpes zoster keratitis.

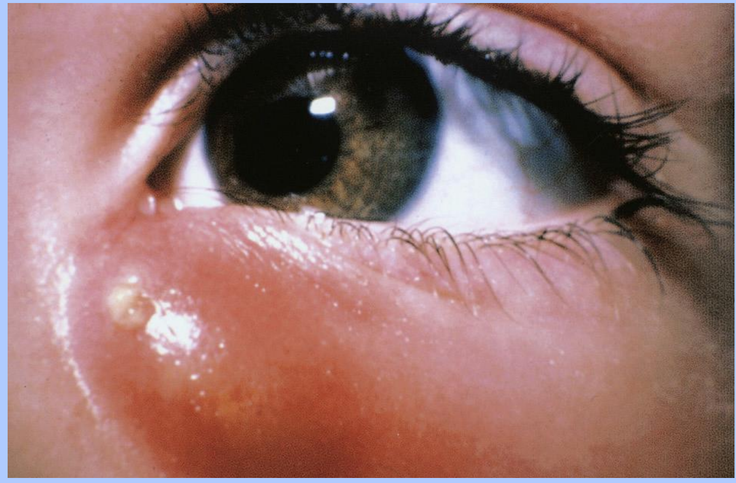
Necessitates ***emergent ophthalmologic consultation***.

Systemic therapy is the standard of care (unlike HSV, topical antivirals have little effect).

If **retinal involvement** occurs or **the patient is immunocompromised**, inpatient treatment is recommended.

The Eyelids Periorbital Area

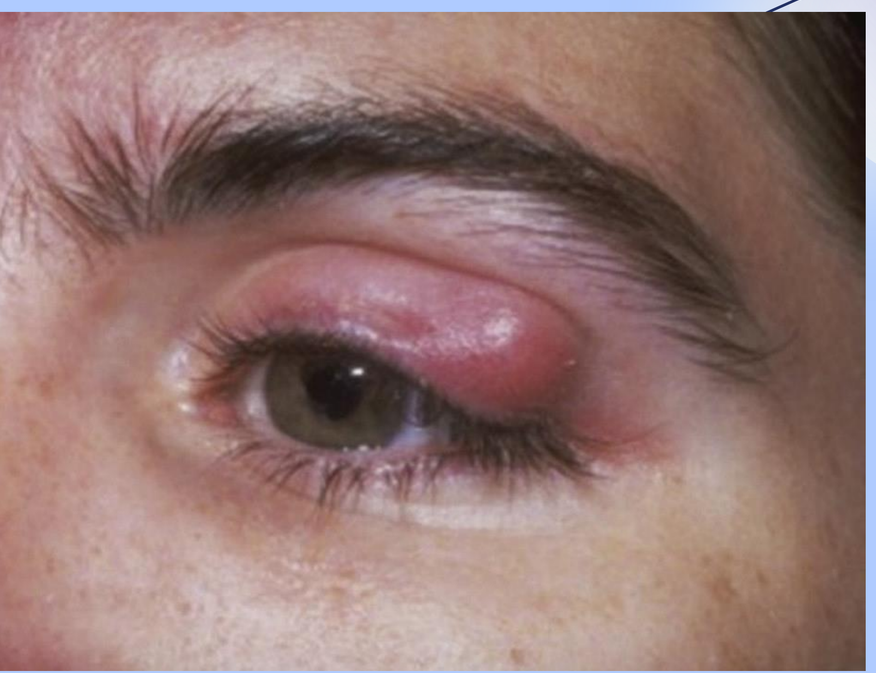
Hordeolum



Dacriocystitis

Massive X

Chalazion



Cellulitis

Clinical Feautures

Hrdeolum caused by ***acute inflammation*** of an oil (Zeiss or meibomian) gland or hair follicle. It is typically painfully tender, erythematous, associated with swelling,

chalazion is a ***chronic sterile, granulomatous inflammation*** of a meibomian gland (and may evolve from a hordeolum), which results in localized swelling that is usually not acutely painful

Dacryocystitis is an infection of the lacrimal sac, usually resulting from a nasolacrimal duct obstruction.
It is more common in females.

Blepharitis typically describe itching and burning of the eyelids with associated tearing and crusting. The eyelids become diffusely inflamed and thickened, with erythematous margins, and telangiectasias surrounding the eyelid margin.

Be aware

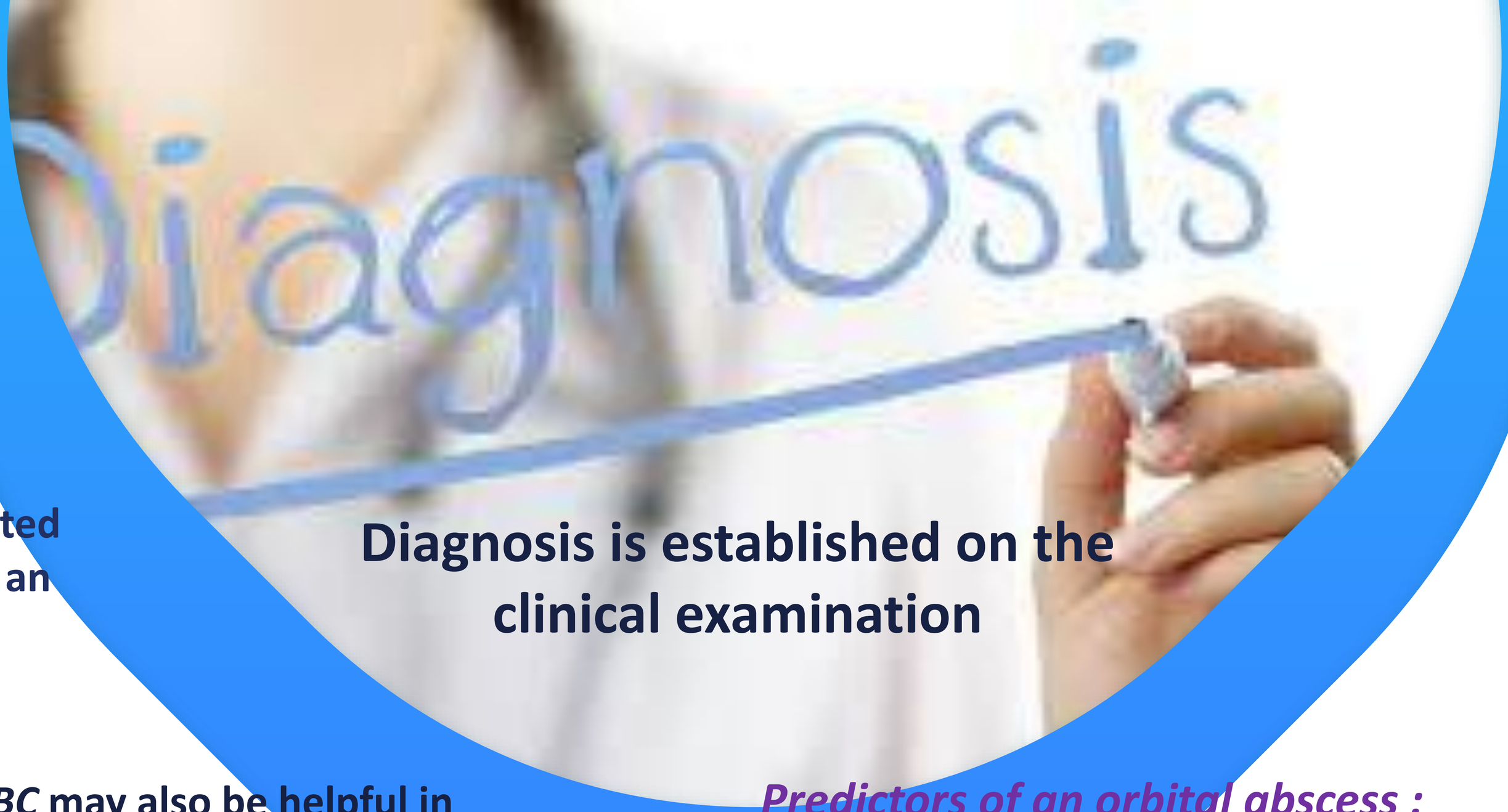
Any one of the aforementioned focal infections, but especially **dacryocystitis** and **blepharitis**, may be complicated.

Cellulitis must be carefully distinguished as either ***pre-septal*** (also called *periorbital*) or ***post-septal*** (also called *orbital*).

Pre-septal cellulitis is limited to the tissue anterior to the orbital septum, whereas ***post-septal cellulitis*** implies the spread of the infection beyond the septum.

Diagnostic Testing

cated
ng an



Diagnosis is established on the clinical examination

CBC **may also be helpful in** ***orbital abscess***

Predictors of an orbital abscess :

- **Absolute neutrophil count (ANC) of grea than 10 000 cells/µL**
- **Moderate-to-severe periorbital edema (extending beyond the eyelid margins)**
- **Absence of conjunctivitis as the present symptom**
- **Age greater than 3 years**

T

C

b

c

Hordeolum and chalazion.

Typically self-limited and can resolve on their own when the glands become unobstructed.
Conservative treatment to normalize the flow of the obstructed oil glands is the primary goal.

Dacryocystitis.

Treatment consists of massage, warm compresses, and systemic antibiotics selected so as to include coverage of MRSA.
In infants, acute dacryocystitis represents a *medical emergency* .
The optimal time for surgery is when the infection is controlled, so arrange for patients to follow-up with an ophthalmologist in 24 to 48 hours.

Blepharitis.

The initial treatment of blepharitis is conservative, designed to remove residual oils and scurf, and entails warm massage with a moist washcloth about for 10 to 15 minutes three to five times a day and cleaning the lid margins twice a day with a cotton swab soaked in mild baby shampoo.

Periorbital cellulitis.

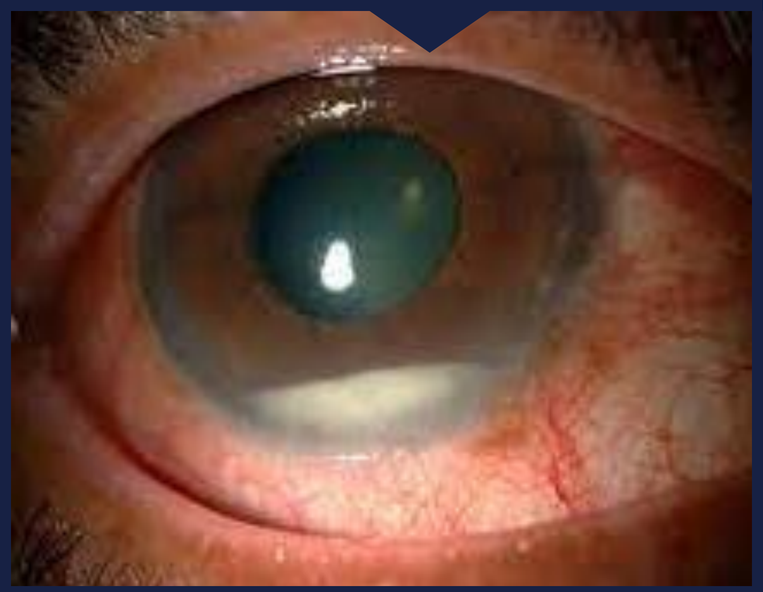
The patient can be discharged on oral antibiotics directed toward the most common organisms.
In children, the diagnostic uncertainty between pre-septal and orbital cellulitis dictates more aggressive management of any periorbital infection.45 An IV second- or third-generation cephalosporin, such as cefuroxime or ceftriaxone, is recommended.

Massive X

The Globe
Endophthalmitis

Pain and decreased vision are the primary symptoms.

The most common etiology of endophthalmitis is recent intraocular surgery.



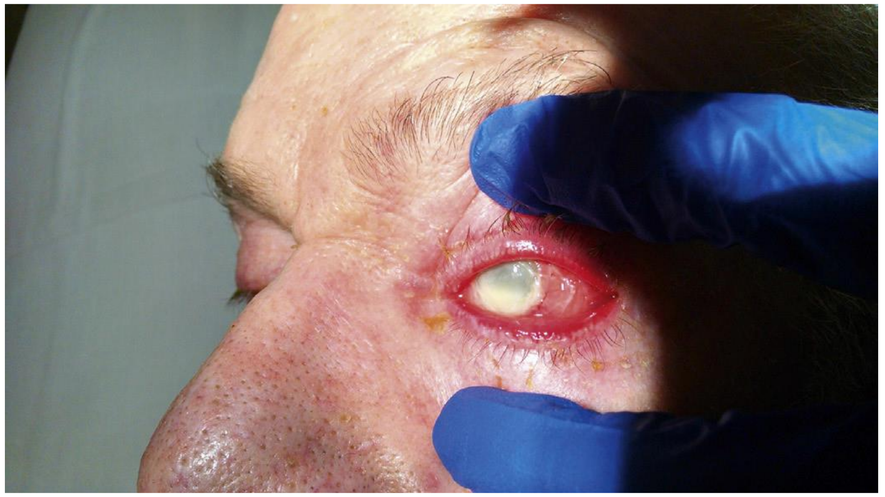
Examination findings include decreased visual acuity, chemosis, hyperemia of the conjunctiva, and intraocular inflammation (evidenced by hypopyon)

C

b

c

Diagnostic Testing



Endophthalmitis can be difficult to distinguish from uveitis, and the two have vastly different treatments and acuity.

Sono

Lab

- Numerous heterogeneous strands and membranes in a vitreous that would otherwise be uniformly hypoechoic.

- **Leukocytosis**

Tx

Endophthalmitis is a medical emergency that must be promptly treated. Systemic antibiotics are not effective (although commonly administered), and intravitreal antibiotics should be given.

-
-

C