

Cornea



The microvilli of the anterior surface of the squamous cell layer are wet by the mucin of tear film

These cells are joined by tight junctions that exclude water soluble substances

Transparency



Tight junctions of the epithelial cells ☞

Endothelial pump mechanism ☞

Absence of blood vessels ☞

Absence of pigments ☞

Scarcity of cell nuclei in stroma ☞

Regular structure of stroma ☞

Signs of Corneal Disease



Superficial

1.Punctate epithelial erosions

Tiny ,slightly depressed, epithelial defects which stain with flourescein but not with rose Bengal

PEE are non specific and may develop in a wide variety of keratopathies



Signs of Corneal Disease



Superficial

2.Punctate epithelial keratitis

It is the hallmark of viral infections.

Swollen epithelial cells ❧

Visible unstained ❧

Stains with rose bengal ❧

Signs of Corneal Disease



Superficial

3.Epithelial Oedema

Sign of

Endothelial decompensation ∞

Severe acute elevation of IOP ∞



Signs of Corneal Disease



Superficial

4.Filaments

Small coma shaped mucus strands lined with epithelium.

One end attached with epithelium

Signs of Corneal Disease



Superficial

5.Pannus

Inflammatory or degenerative ingrowth of fibrovascular tissue from limbus



Signs of Corneal Disease



Stromal Lesions

1. Infiltrates

Focal areas of active stromal inflammation

2. Edema

Increased corneal thickness

Decreased transparency

3. Vascularization

Signs of Corneal Disease



Lesions of Descemet Membrane

1. Breaks

Corneal enlargement
Keratoconus
Birth trauma

2. Folds (Striate Keratopathy)

Surgical trauma
Ocular hypotony
Stromal oedema



Important Facts

- ✓ A corneal ulcer is an  ocular emergency that raises high stakes of questions about diagnosis and management.
- ✓ When a large corneal ulcer is staring you in the face time isn't in your side.
- ✓ Despite varying etiologies and presentations, as well as different treatment approaches , corneal ulcers have one thing in common : the potential to cause devastating loss of vision.

PRINCIPLES OF MANAGEMENT OF CORNEAL DISEASE



- 1- Control of infection ❧
- 2- Control of inflammation ❧
- 3- Promotion of re-epithelialization
lubrication
closure
soft contact lens
– lid ❧
– bandage
- 4- Prevention of perforation ❧
 - tissue adhesive glue
 - conjunctival flap
 - systemic immunosuppressive agents
- Corneal grafting ❧

MICROBIAL KERATITIS (Bacterial)

Ocular surface disease: Trauma, post-herpetic 
corneal disease, bullous keratopathy, corneal
exposure, dry eye and diminished corneal sensation.
Contact lens wear 

MICROBIAL KERATITIS

(Bacterial)

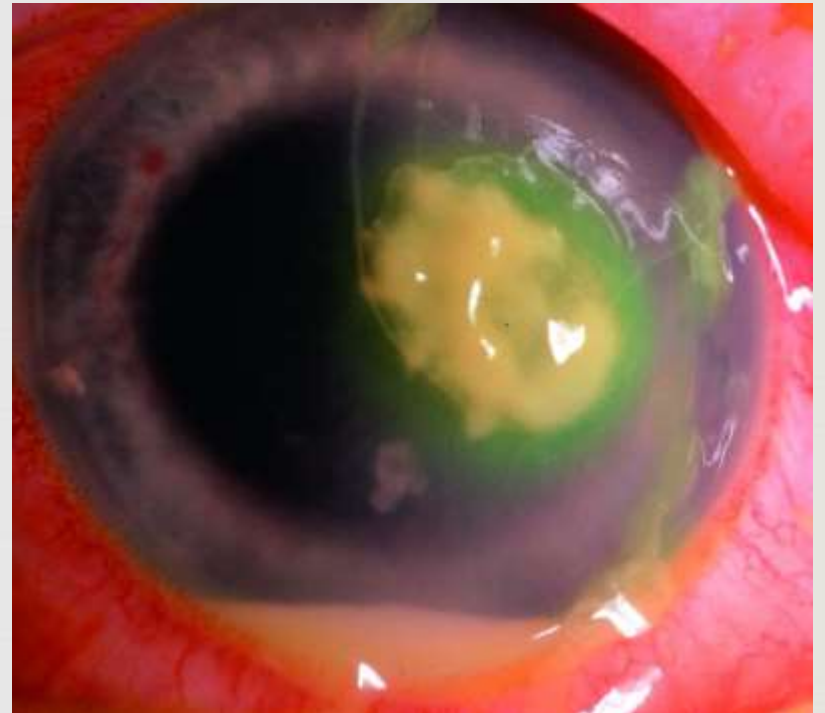
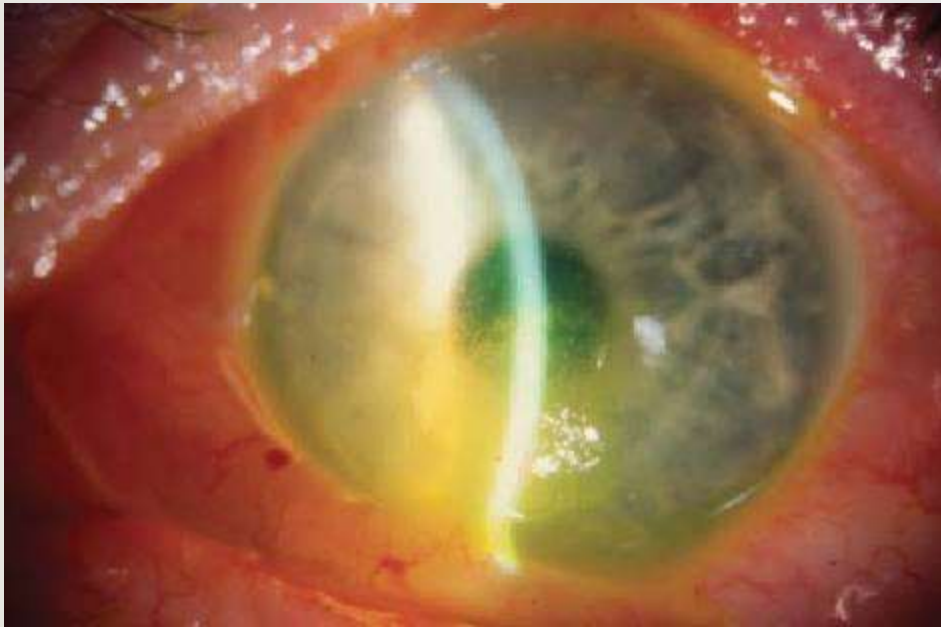
Pathogens which can produce corneal infection in intact epithelium.

1. *Neisseria gonorrhoeae* ❧
2. *Corynebacterium diphtheriae* ❧
3. *Listeria* ❧
4. *Haemophilus* ❧

Staph. aureus and strep. pneumoniae

Oval, yellow-white, densely opaque stromal 
suppuration surrounded by relatively clear cornea

Bacterial ulcer



MANAGEMENT



History ❧

Clinical examination (including staining and ❧ sensitivity)

Hospitalization ❧

Corneal scrapping ❧

Treatment ❧