
بسم الله الرحمن الرحيم

Red eye 5

Non microbial keratitis

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Clinical scenario

- A female patient came to eye opd with pain redness & decreased vision in her Rt eye. On examination her vision is 6/36. There is a crescent shape peripheral corneal ulcer in nasal side with conjunctival congestion. Her left is blind because of the same problem. She has been treated in other hospital. What can b the cause.?
- A autoimmune keratitis
- B bacterial keratitis
- C fungal keratitis
- D viral keratitis


A

Mooren ulcer

- First described by Mooren in 1867. More in M as compared to F 1.6:1
- Is a chronic inflammation of the peripheral cornea
- Autoimmune in nature due to vasculitis of the limbal vessels which causes ischemia & necrosis leading to enzymatic release that play A role in ulceration
- Usually associated with Rheumatoid arthritis
- Two types; limited form which if often unilateral and mild . Occurs in old age
- Progressive form is usually bilateral & progressive . Occurs in young peoples

Speculation.?

- Gottsch and colleagues have suggested that this disorder can result from a host response to Calgranulin C, a normally hidden antigen expressed by keratinocytes in the corneal stroma. [6] This molecule has also been found in circulating polymorphonuclear leukocytes. [5] Receptors for this antigen have also been found on the surface of certain helminths, which has led to speculation regarding an association with helminthic infections. However, Mooren's ulcer has not been proven to be more prevalent in endemic areas of ascariasis. [4]

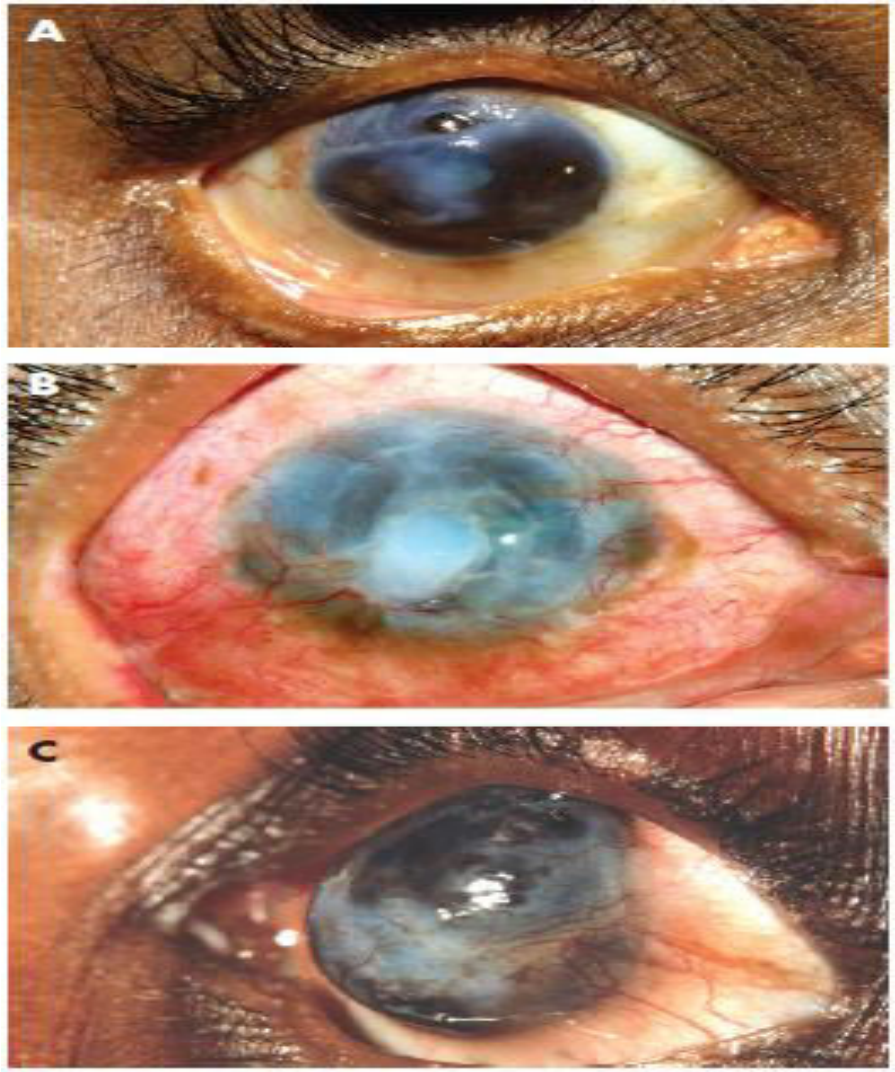
Clinical features

- Characterized by painful peripheral corneal ulceration of unknown etiology. The disease generally begins with intense limbal inflammation and swelling in the episclera and conjunctiva with Pain lacrimation redness & blurring of vision
- It starts spontaneously as an excavation in Corneal margin near the limbus. It progresses by undermining the corneal epith & superficial corneal lamella. It has raised margins with overhanging ridge at the advancing edge. It spreads circumferentially and centripetally & causes corneal thinning . The healed cornea is usually Descemet membrane covered with epith.
- The uninvolved cornea is clear


A

Complication

- Progressive Astigmatism
- Anterior uveitis
- Complicated Cataract & secondary Glaucoma
- Corneal Thinning
- Descemetocele formation
- Perforation
- Blindness
-


A
B
C

Treatment

- Med ;
- Topical; Steroid, Cyclosporin 1% or 2%, interferon alfa 2 a
- Cyclopen,
- Antibiotics
- Systemic immunosuppressive such as cyclophosphamide, azathioprine, or
- methotrexate. In more aggressive cases, oral corticosteroids, cyclosporine A
- Rituximab have also been used with some success.
- Doxycyclin; collagenase inhibitors
- Surgical
- Conjunctival resection
- Pkp

- Excision of a 3-4 mm ring of limbal conjunctiva at least 2 clock hours adjacent to a Mooren's ulcer has been shown to be an effective treatment.
- Studies have shown that when less than half of the limbus is involved, the cure rate after conjunctival excision and corneal ulcer resection is performed is 51.3%. When more than half of the limbus is involved, the cure rate after the procedure decreases to 36.8%.
- In a 1975 study where limbal conjunctival excision was performed, 8 out of 10 eyes healed, and one developed recurring ulcers which then healed upon re-treatment. It was hypothesized that the limbal conjunctiva may contain antibodies that react with antigens in the corneal stroma in addition to enzymes that destroy the corneal stroma—therefore, excision may interrupt the disease process.

- Surgical interventions can also include lamellar keratoplasty, keratoepithelioplasty, delimiting keratotomy, and conjunctival flap and patch grafts using periosteum or fascia lata.
- Resection of the corneal lesion and adjacent conjunctiva combined with lamellar keratoplasty can achieve a final healing rate of 89.6%.
- If topical 1% cyclosporine A is added, a 95% final healing rate can be achieved.
- But usually fails

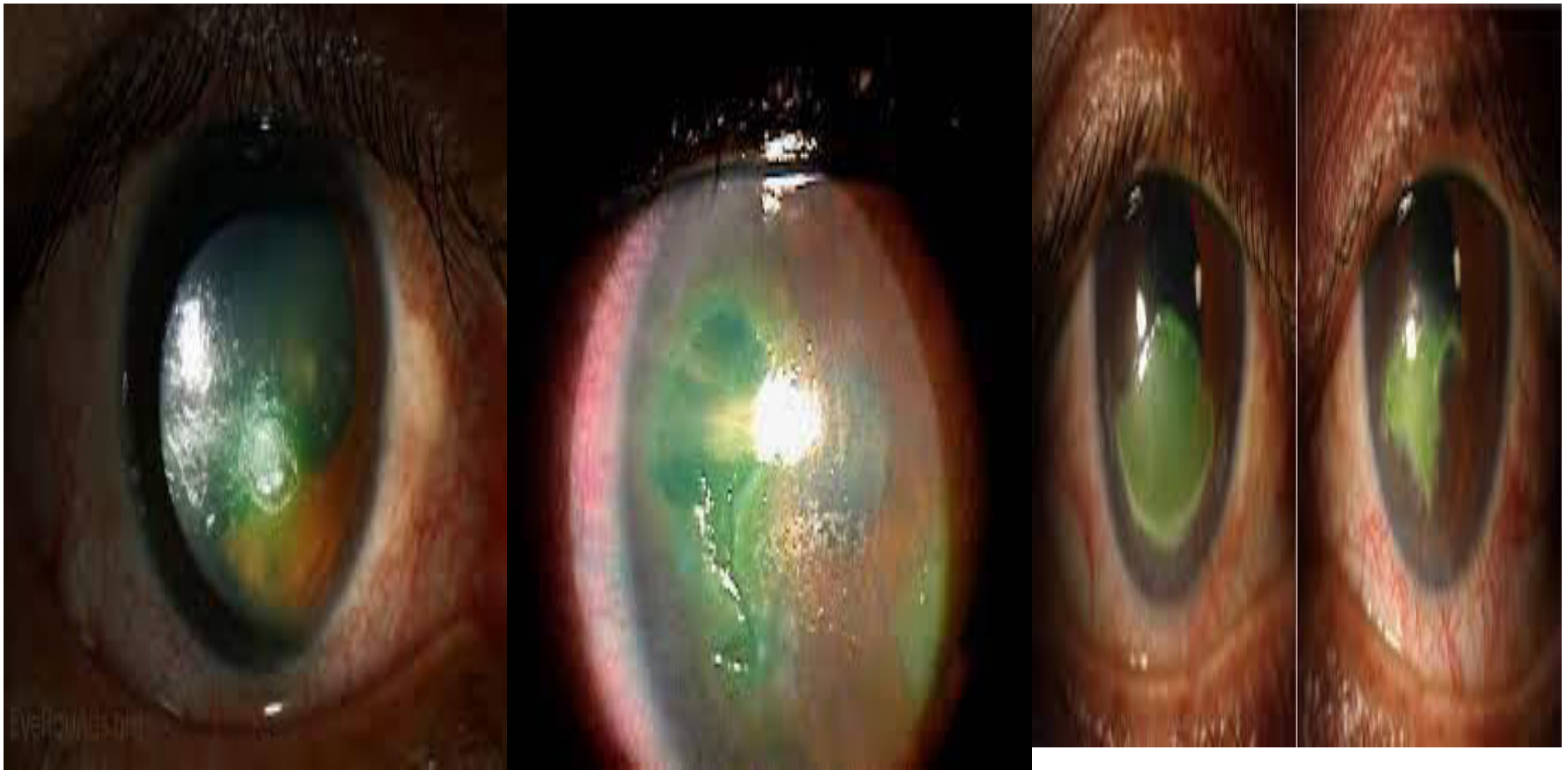
Neurotropic keratitis

- It is keratitis due to impaired Corneal innervation & sensation by ophthalmic
- division of 5th nerve → hypoesthesia → disturbed epithelial metabolism →
- accumulation of metabolites in cells → epithelial edema, exfoliation & ulceration
- Causes may be
- Surgical trauma; of trigeminal ganglion surgery or alcoholic block
- Systemic disease; such as DM is vey common, may be syphilis, leprosy etc etc
- Tumors; such as cerebellopontine tumour such as aquastic Neuroma
- Ocular problem; such as HZO
- Ocular surgery; PKP
- Refractive surgery ; LASIK etc

Clinical features

- Painless redness is the characteristic
- Va is decreased
- Decreased lacrimation & dry eyes
- Conjunctival congestion
- Corneal sensation are decreased
- Corneal dullness due edema
- Progressive sterile ulceration & melting
- Secondary infection ulceration & perforation

Neurotropic corneal ulcer



NK Is a Degenerative Disease[1]

The Mackie Classification Represents One Way to Assess NK Progression[2,3]

STAGE 1 (Mild)
Punctate keratitis

STAGE 2 (Moderate)
Persistent epithelial defect (PED)

STAGE 3 (Severe)
Corneal ulcer

- Some vision loss can potentially be seen **in all stages of NK**[3]
- If untreated, **moderate NK progresses to severe disease** with associated risks of **profound vision loss** resulting from scarring and corneal perforation[3]

1. Dua HS, Said DG, Messmer EM, et al. Neurotrophic keratopathy. *Prog Retin Eye Res*. 2018 Sep;66:107-131.
2. Semeraro F, et al. Neurotrophic Keratitis. *Ophthalmologica*. 2014;231:191-197.
3. Bonini S, Lambiase A, Rama P, et al. Phase II randomized, double-masked, vehicle-controlled trial of recombinant human nerve growth factor for neurotrophic keratitis. *Ophthalmology*. 2018;125:1332-1343.

Treatment

- Topical lubricant such as tears plus drops frequently
- Topical neurotonic/ nerve growth factors drops
- Avoid drops containing toxic preservative such as benzalkonium
- Autologus serum may be helpful
- Anticollegenase such as tetracyclin doxycycline
- Taping of the eyelids
- Botox injection to induce ptosis
- Silicon contact lenses
- AMT, Conj-flap, Tarsorrhaphy if no healing

Exposure keratitis

- Normally the lid constantly moistens the cornea by frequent blinking and covered the eye during sleep
- Is due to incomplete closure of the lid which results into dryness of the eye leading to damage of the corneal epithelium and ulceration
- Causes Due to
- Neurogenic; 7^{th} n paralysis
- Proptosis; due to thyroid eye disease, orbital tumours
- Eyelid abnormalities; such as entropian, coloboma
- Blepharoplasty

7th n palsy

thyroid eye disease (TED)

Unilateral proptosis

Clinical feature

- Foreign body sensation, lacrimation, redness
- Vision is decreased
- Marked conjunctival congestion
- Epithelial erosions inferior 1/3 of the cornea
- Large defect corneal ulceration
- Secondary infection

Treatment

- Med; Topical lubricants
- Antibiotic
- Treat the cause TED etc
- Surgical; tarsorrhaphy
- Entropion surgery
- Orbital tumour surgery
- Thyroid orbital decompression