17th Annual International Meeting of Research Institute of Ophthalmology (RIO)
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Course 2: Common corneal procedures and investigations in clinical practice

Suturing Corneal Lacerations

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Chair and Professor of Ophthalmology

RIO

The University of Nottingham

Corneal Lacerations

Sharp or blunt trauma (inorganic or organic material)

Non-penetrating or penetrating

Clean or contaminated (infectious material / foreign bodies, eye lashes)

With or without iris prolapse

Corneal Lacerations

History: What, When, How? Tetanus immunisation status

Instil topical anaesthetic for thorough examination. Avoid any pressure on globe

Examine extent of wound: Along its length and depth (involvement of sclera, iris, lens and beyond)

Instruments and Materials

Needle holder: Straight or curved

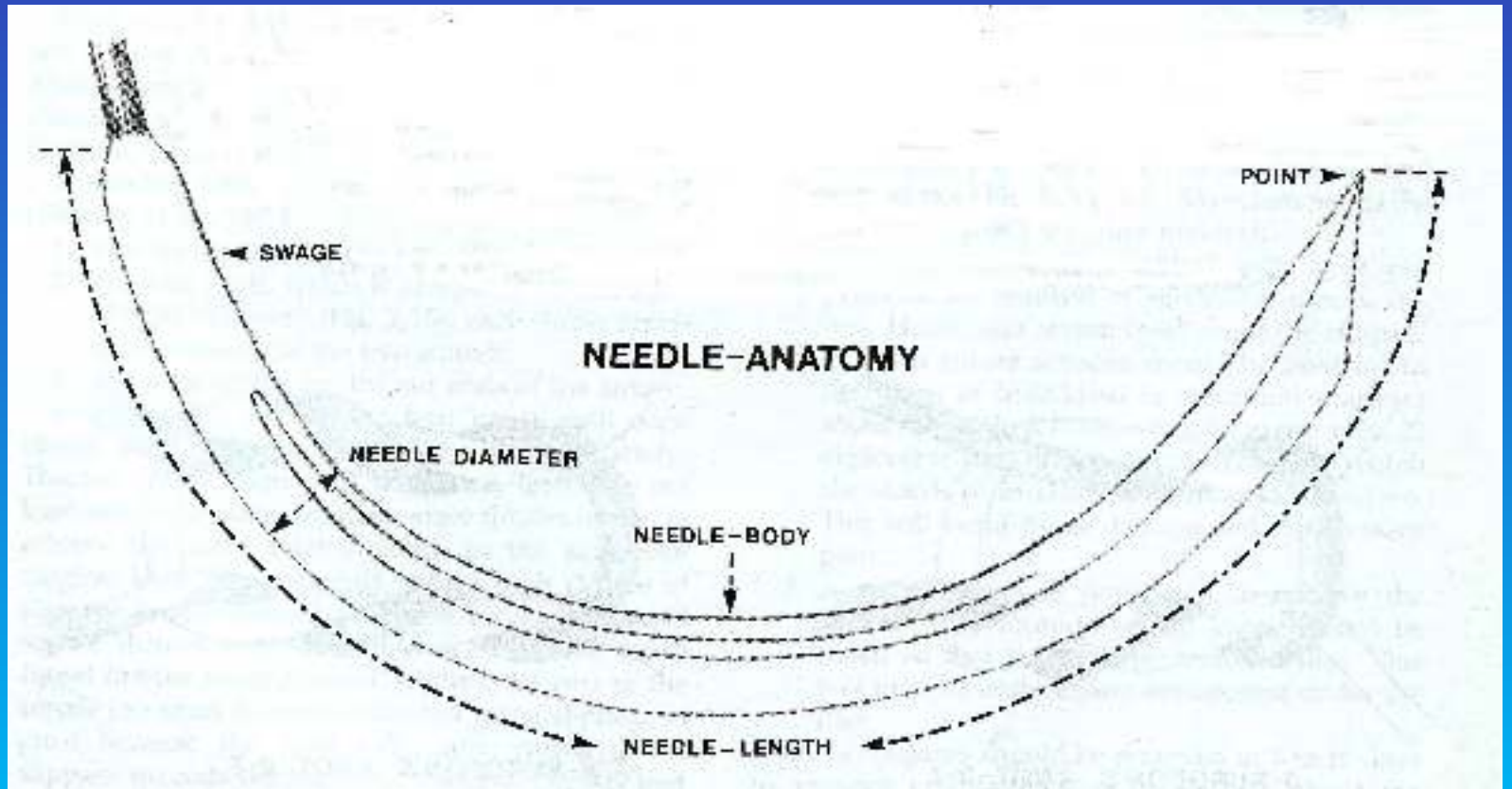
10 ‘0 monofilament nylon, double armed, side cutting needle

Fine toothed forceps, 1-in-2 or micronotched

Pair of fine Vannas scissors

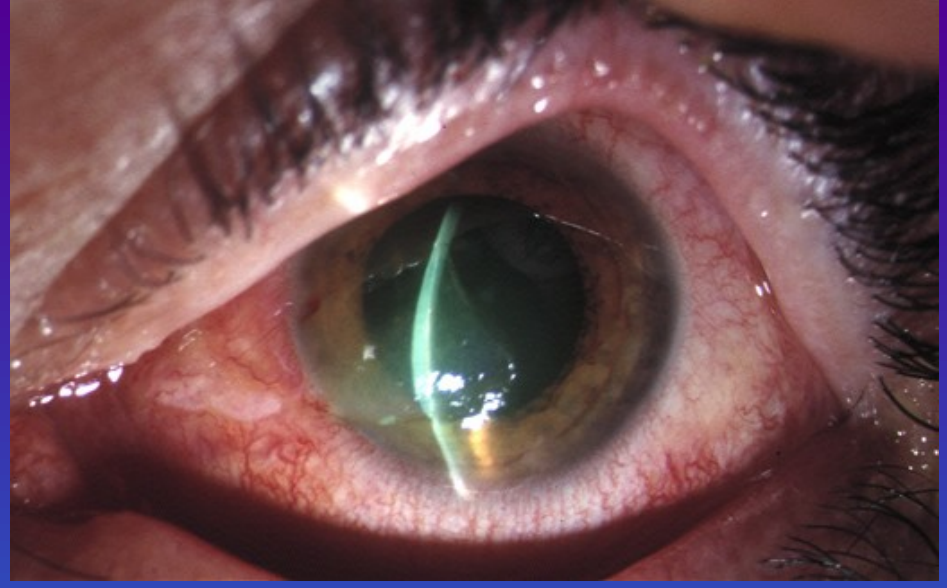
Corneal Needle

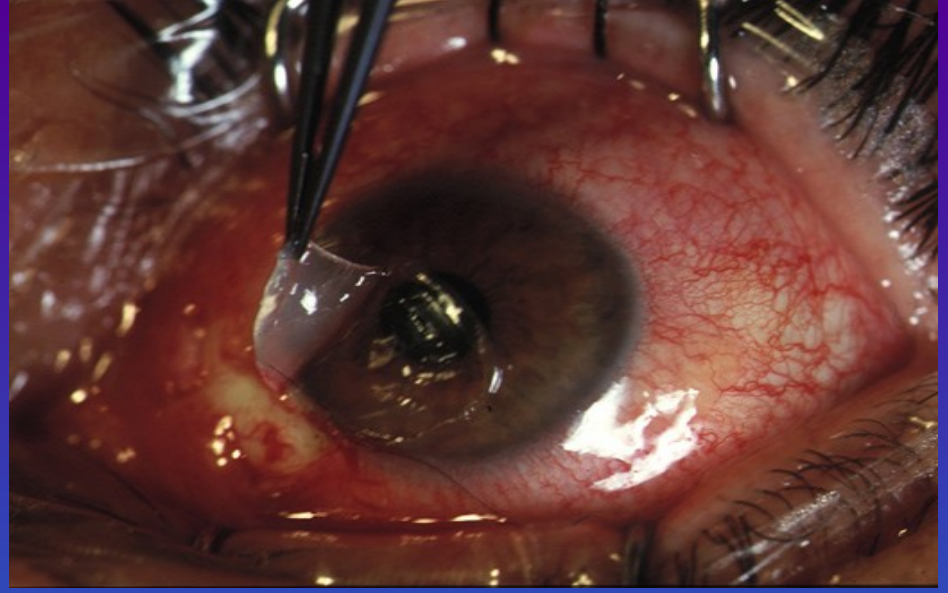
Side cutting, 10 ‘O monofilament nylon, double armed, cut in half.



Suturing Corneal Lacerations

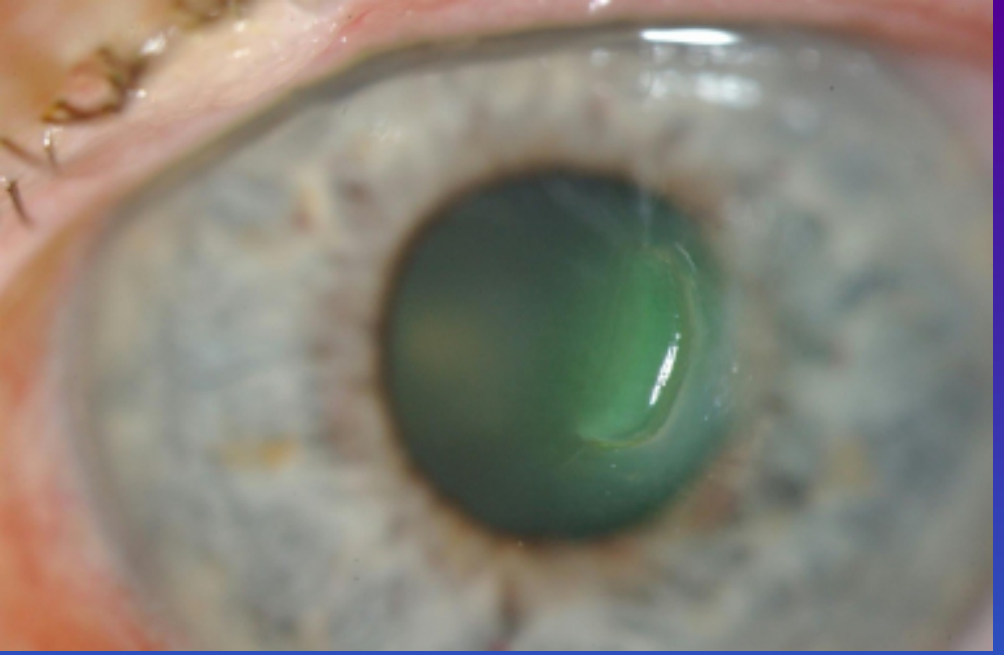
Non-penetrating lacerations

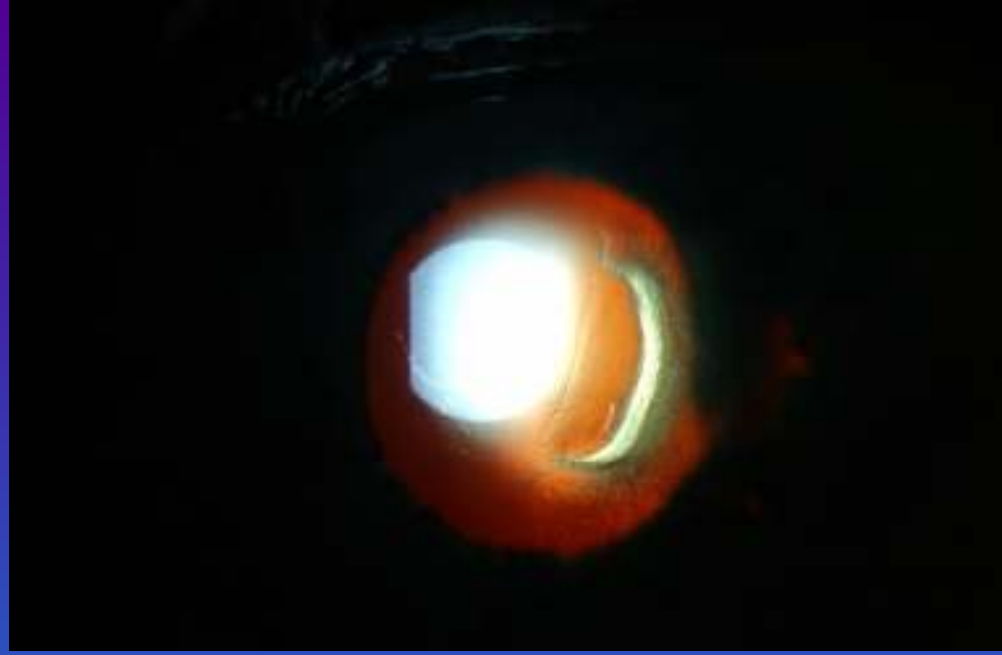


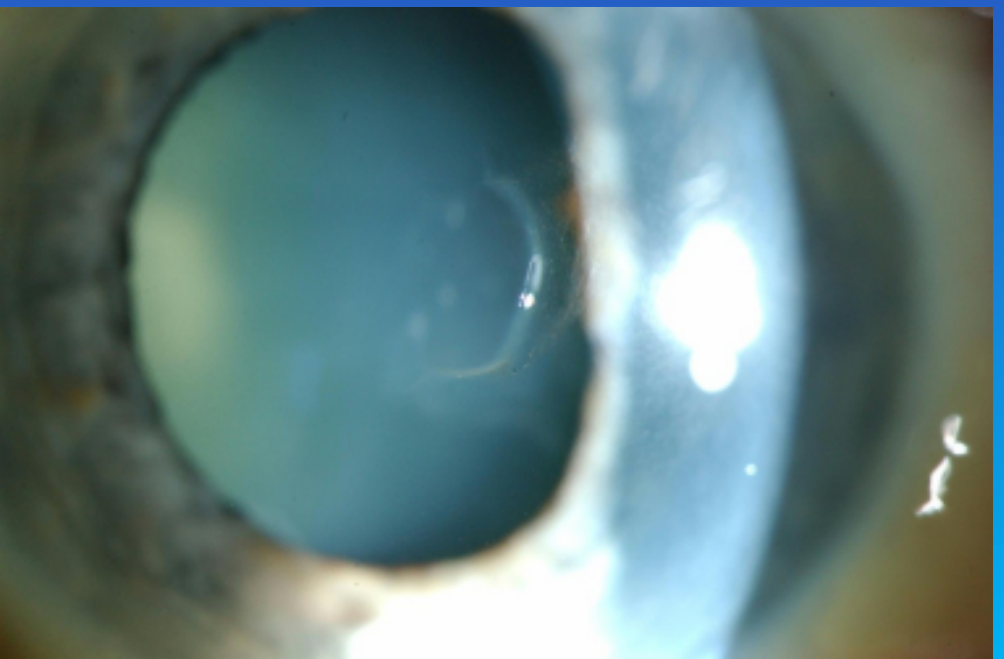


Clean, Close, Cover

Do not debride corneal stromal tissue





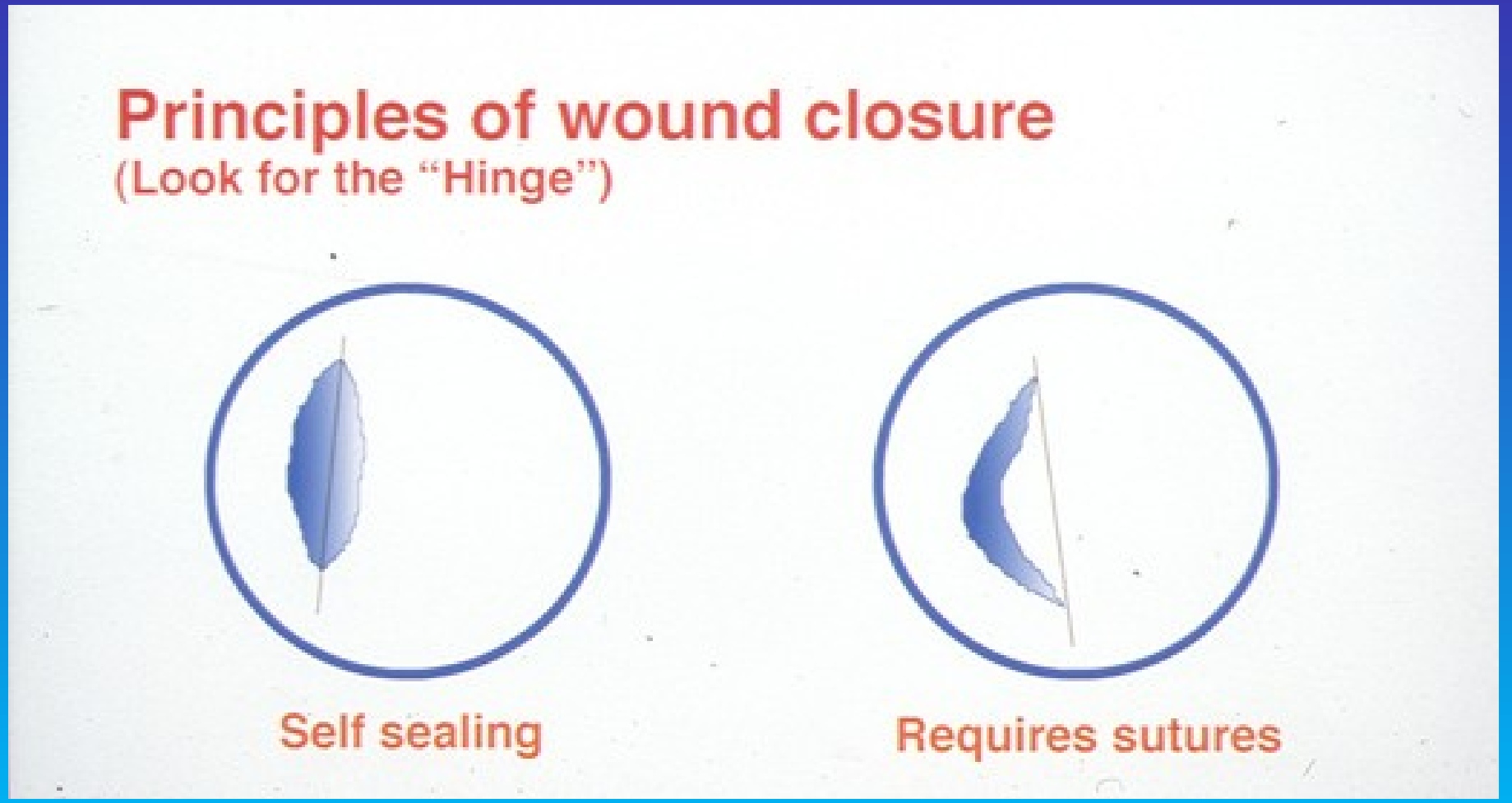


Suturing Corneal Lacerations

Penetrating lacerations

Suturing Corneal Lacerations

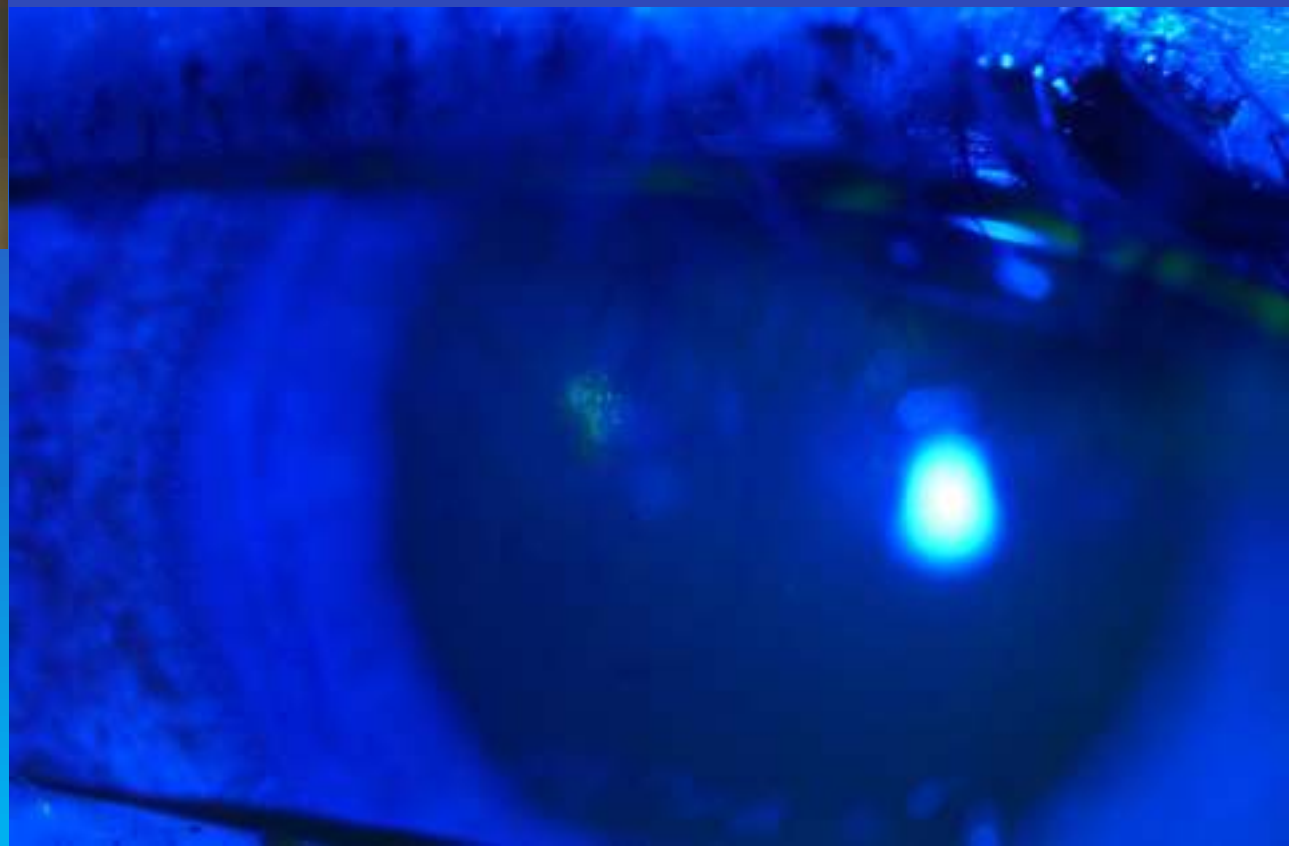
- Draw the profile of the wound and look for the ‘Hinge’



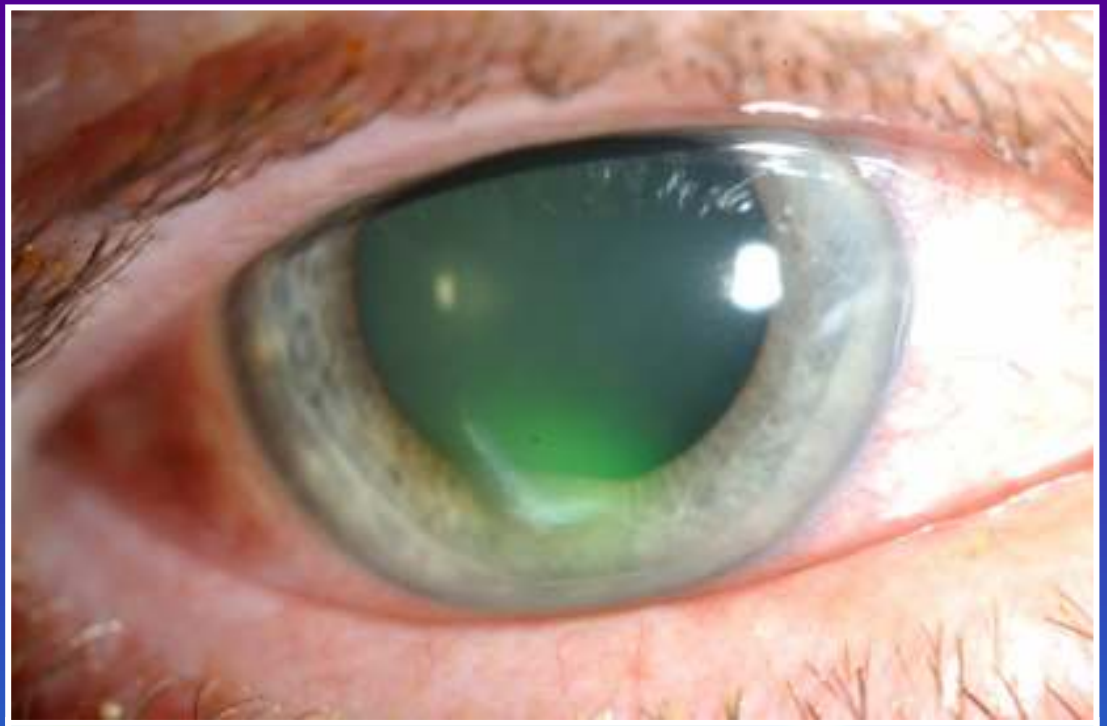
Thorn Injury

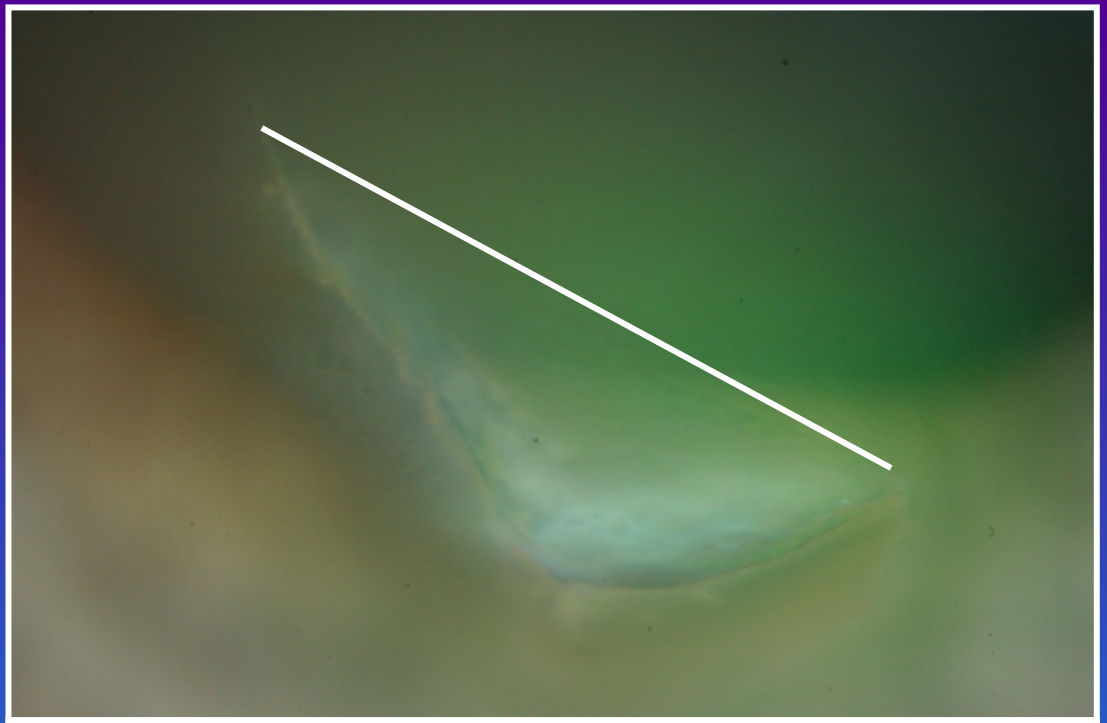
Self Sealing

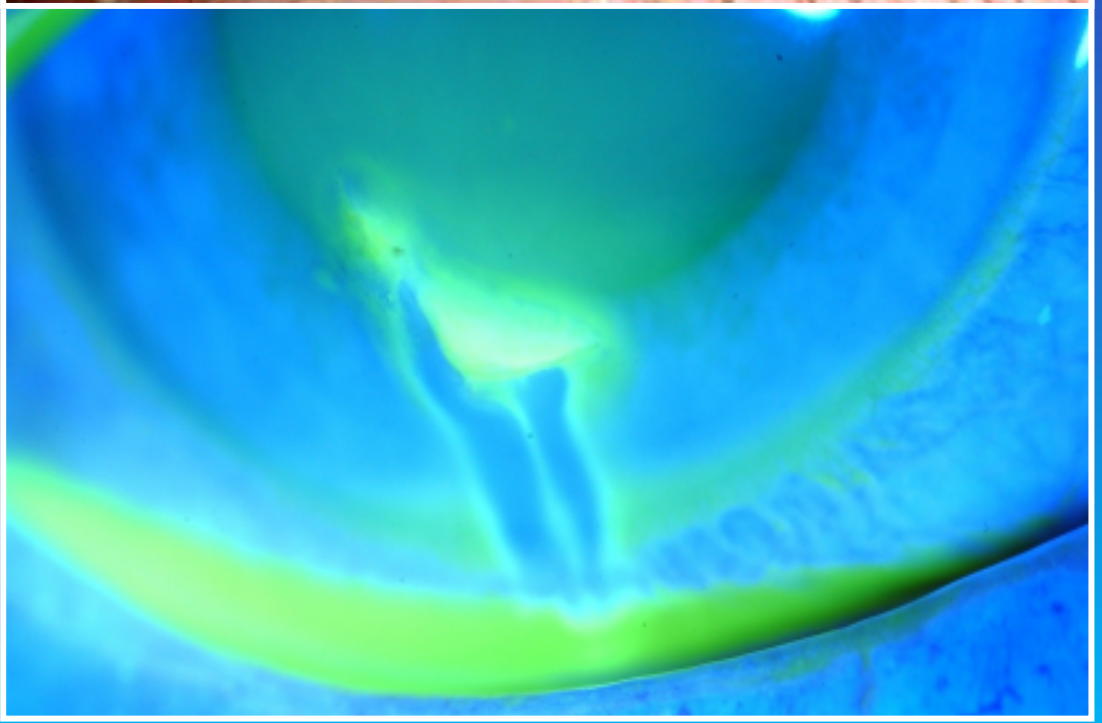
Thorn Injury

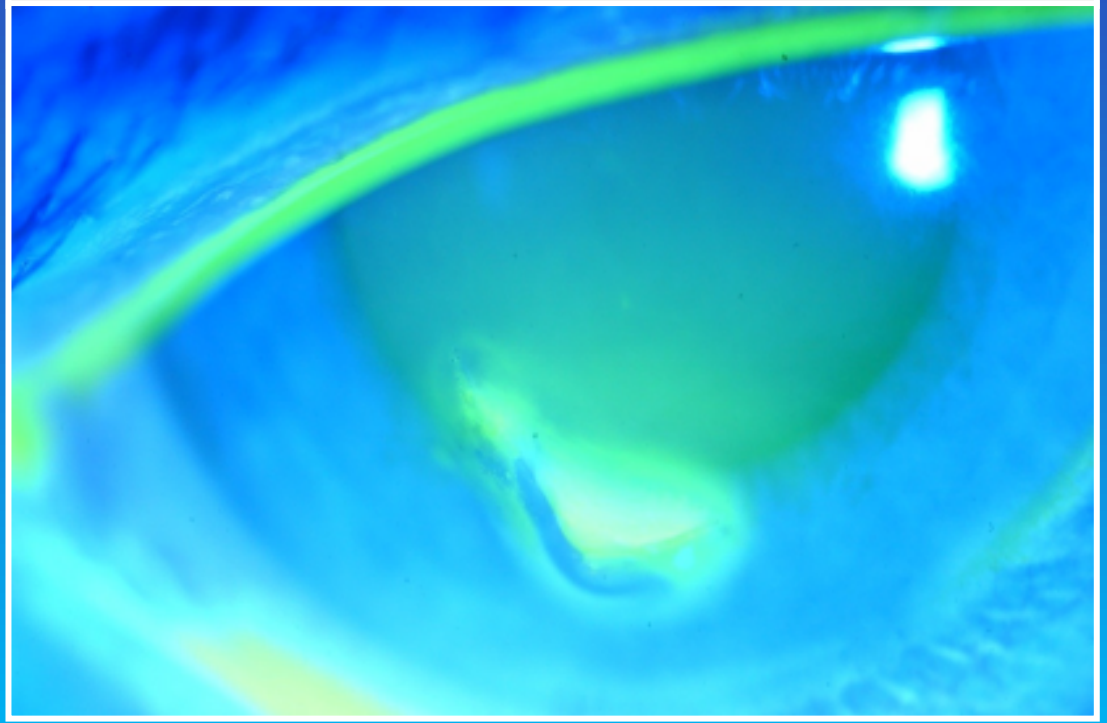


Self Sealing

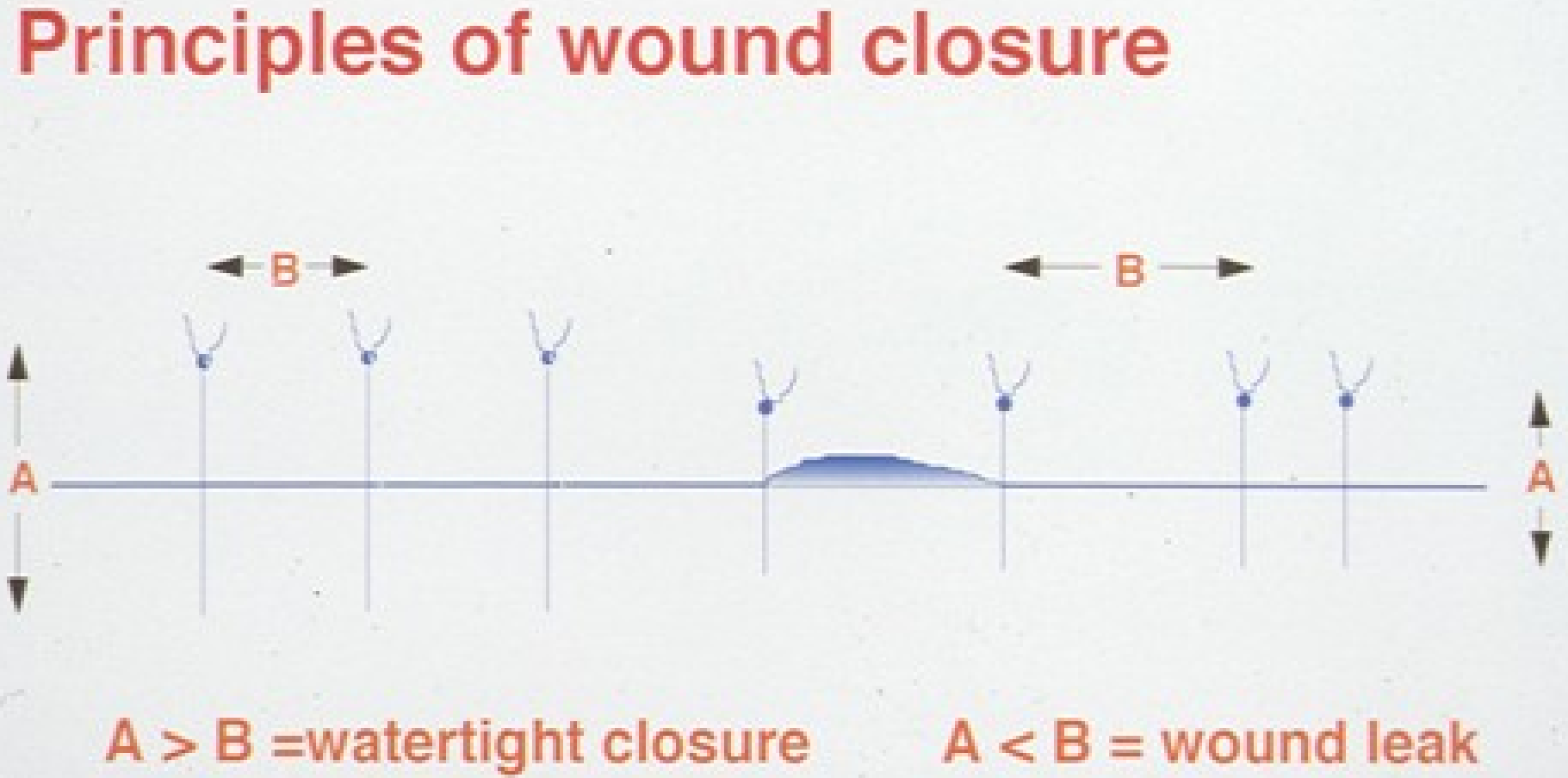








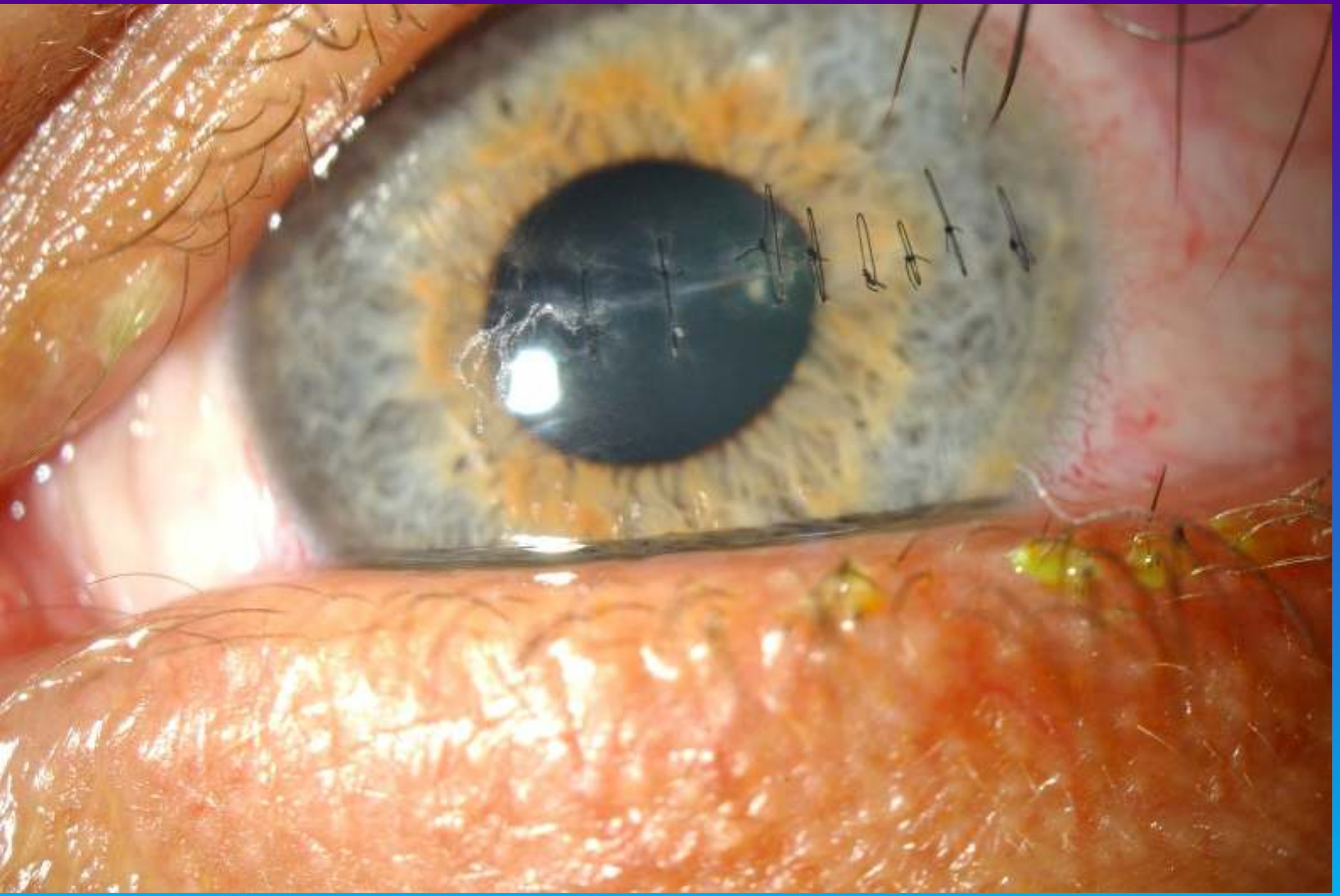
Suturing Corneal Lacerations



Suture:

Perpendicular to point of application

Length greater than space between adjacent sutures



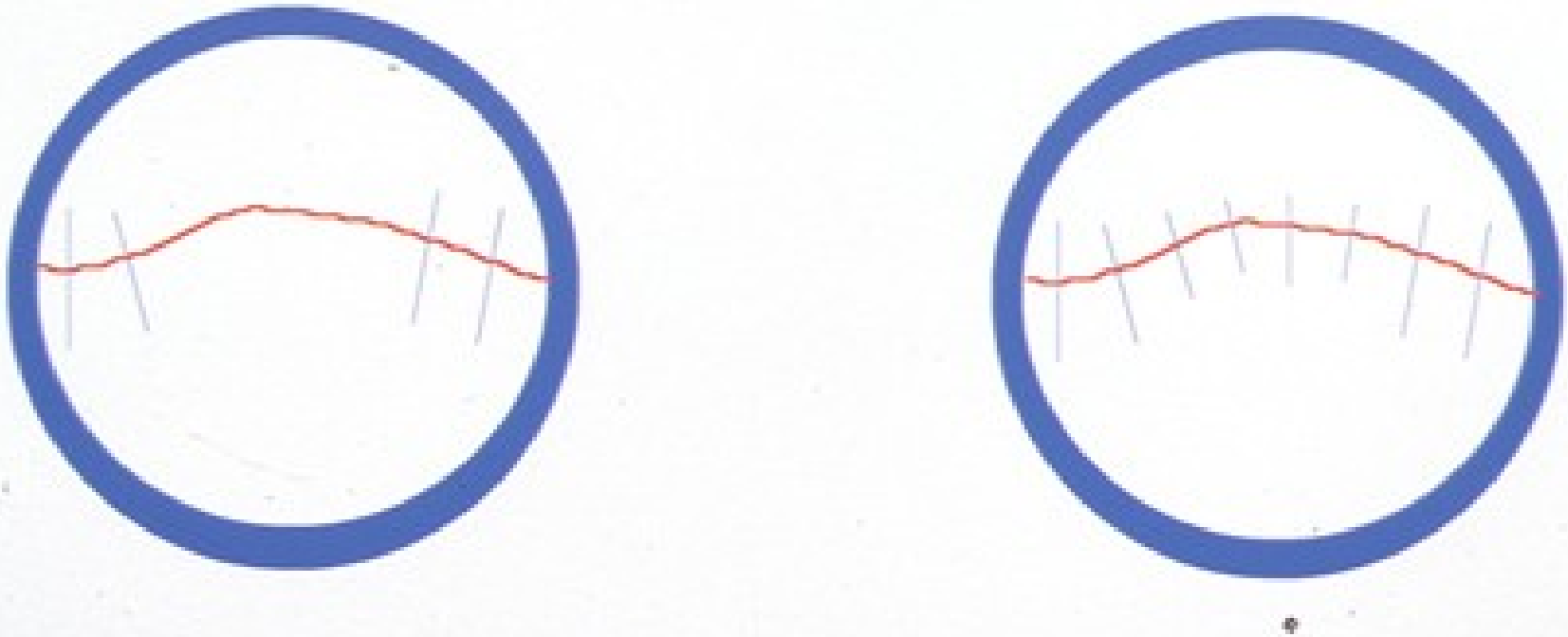
Single suture black line vs double line

Never bury know in the wound !

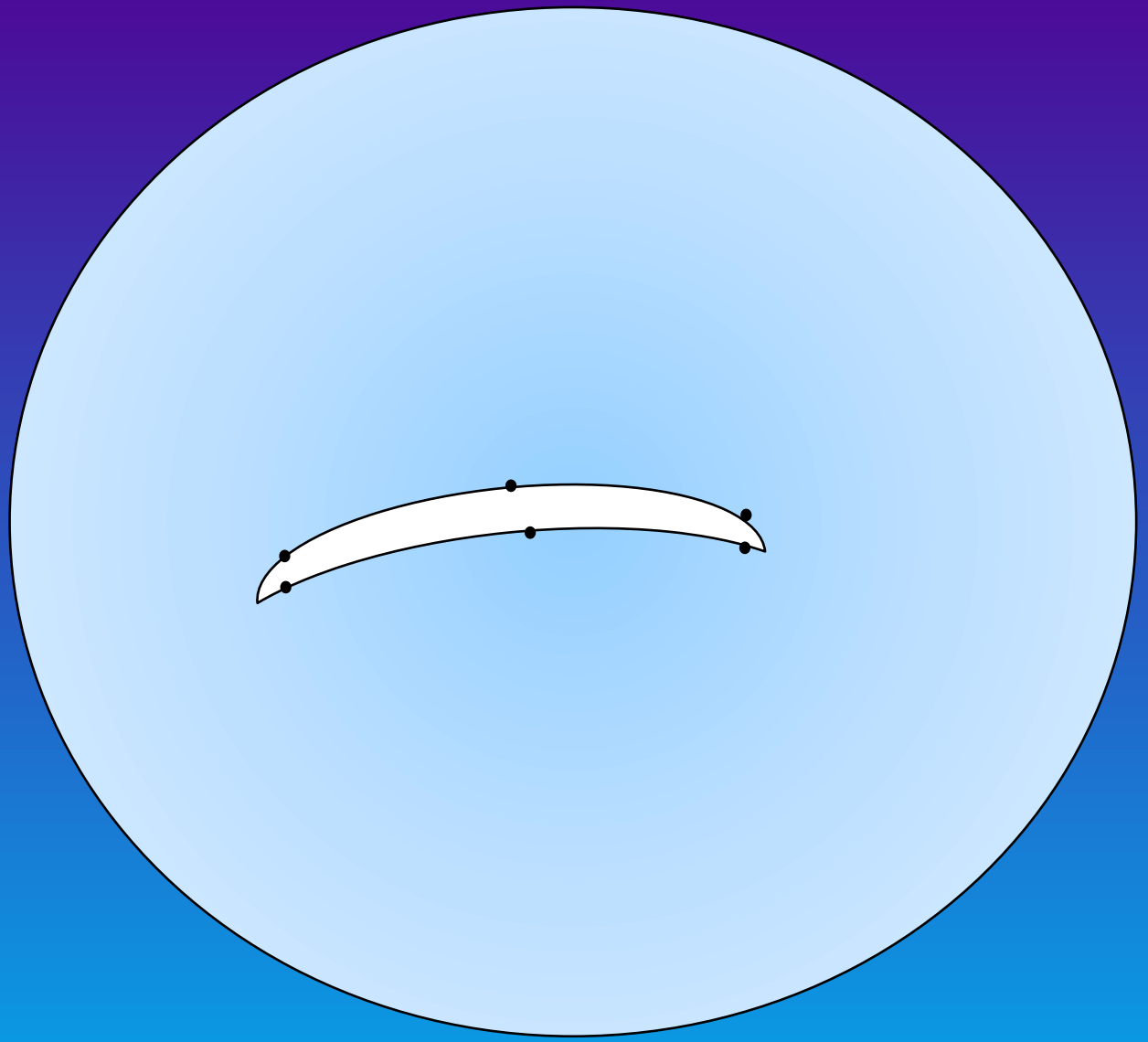
Never debride corneal tissue

Suturing Corneal Lacerations

Principles of wound closure



Suture from periphery to center. Perpendicular to wound.



Do not start suturing at the middle of laceration

Greater chance of mis-alignment and fish-mouthing

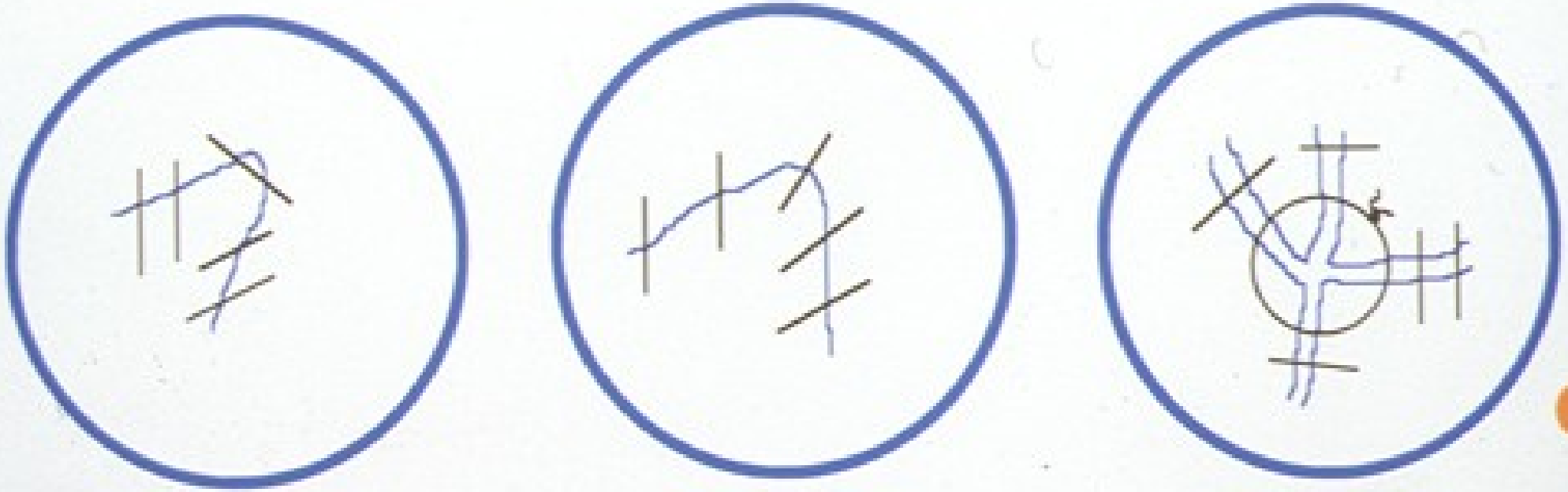
Start from extremities of laceration - fixed points – and work toward the middle.

Suturing Corneal Lacerations

Principles of wound closure

Suturing Corneal Lacerations

Principles of wound closure

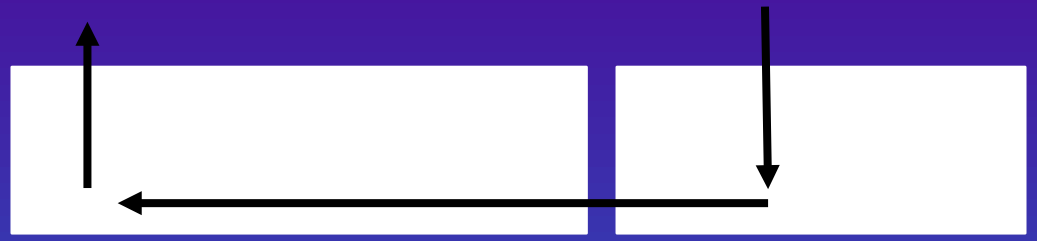


Hyperacute

Acute

Stellate

Suturing Corneal Lacerations: How deep? ≥ 80%

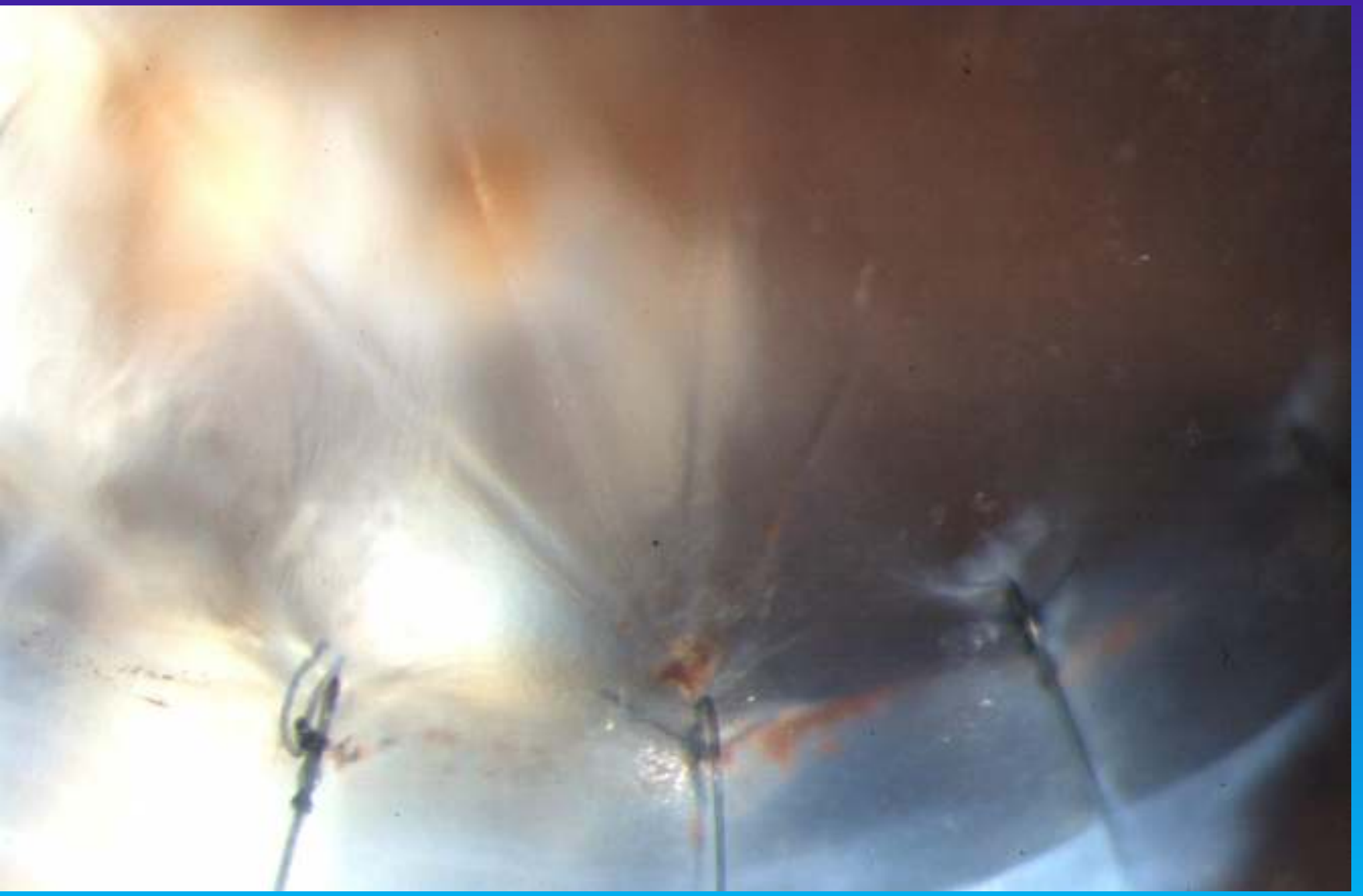


Aim for mattress suture

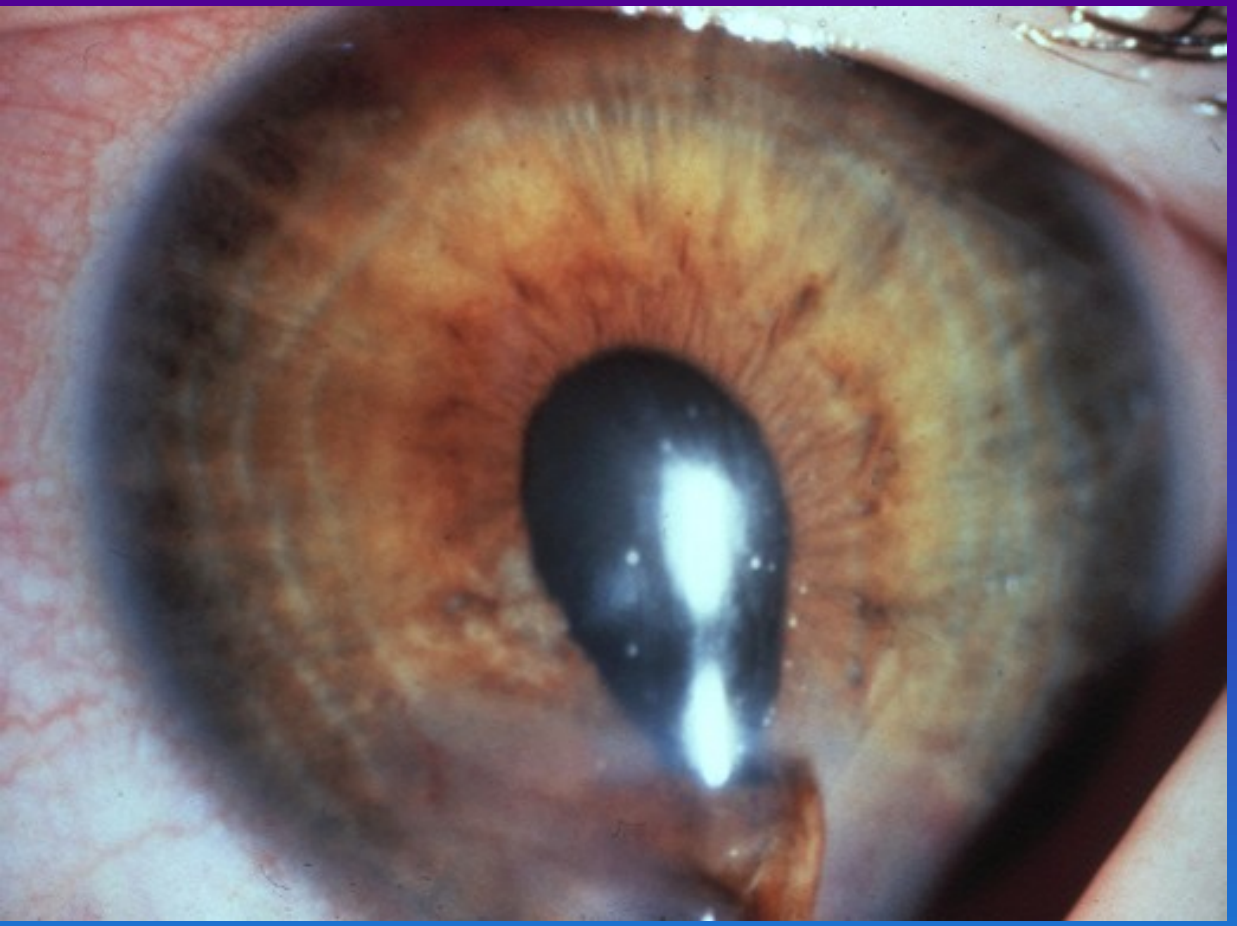
Thickness disparity: keep it flat on the surface

Avoid

Suturing Corneal Lacerations: How deep? ≥ 80%



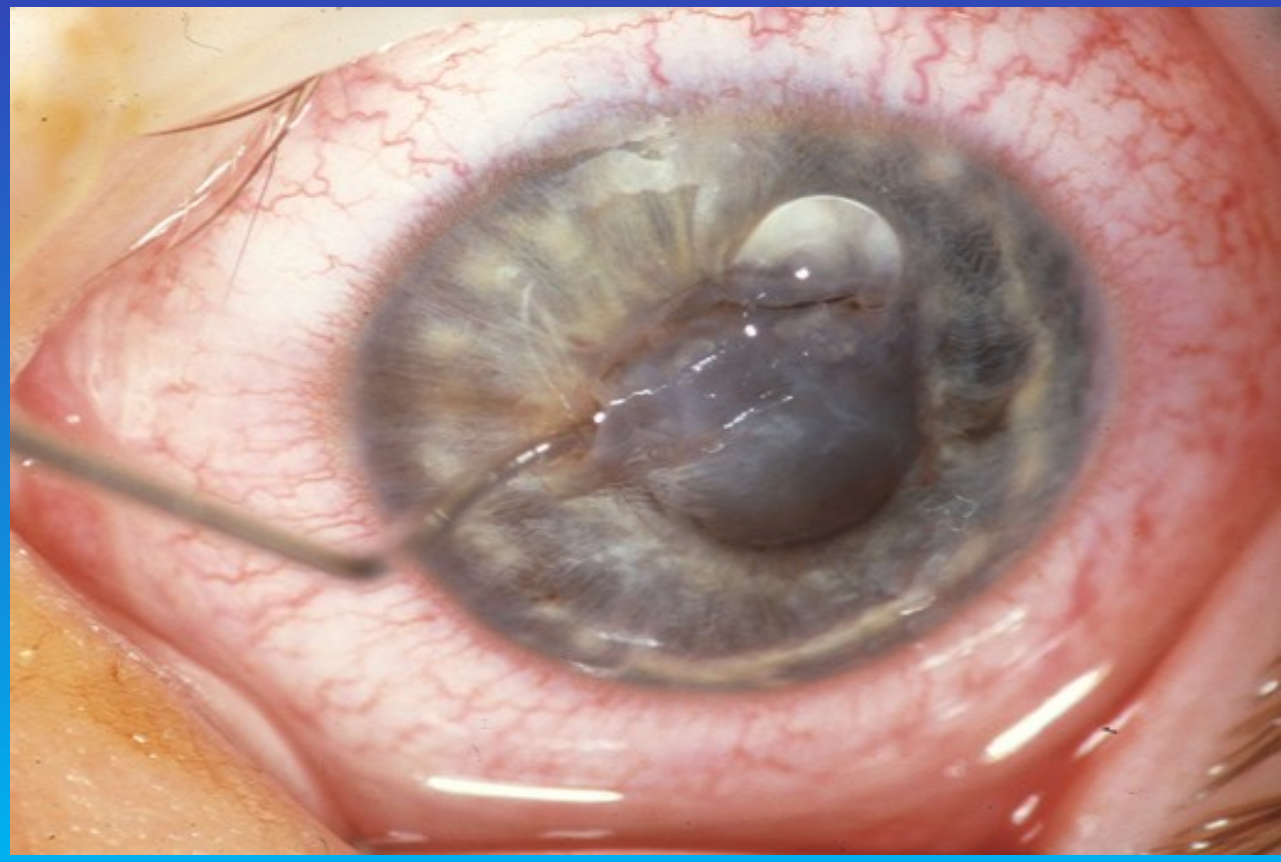
Not full thickness, except in infants

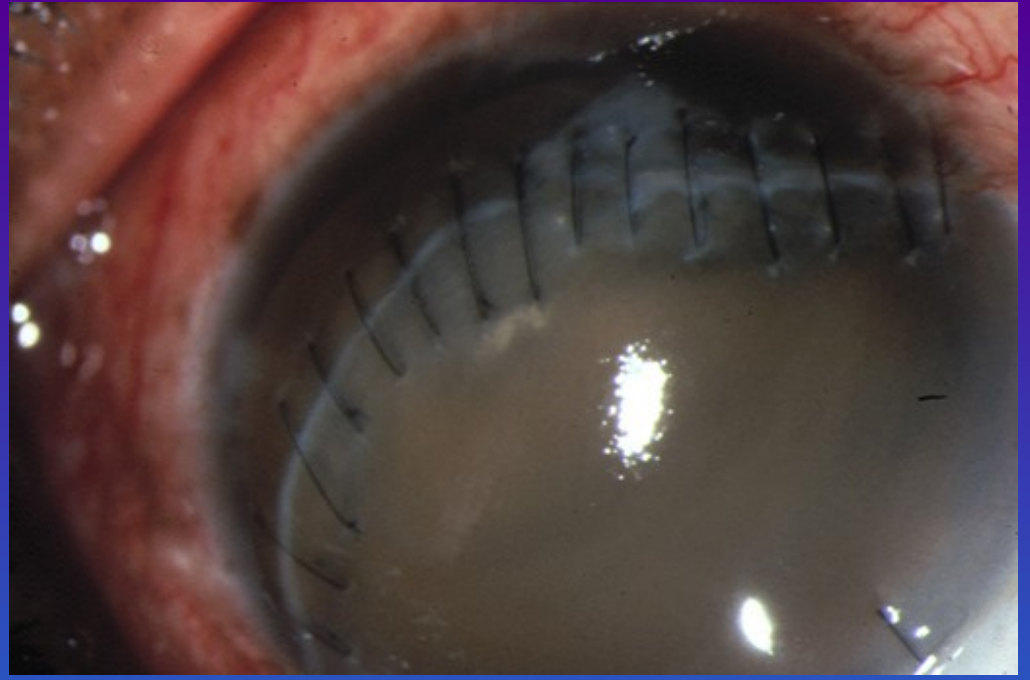


Necrotic or contaminated iris should be excised

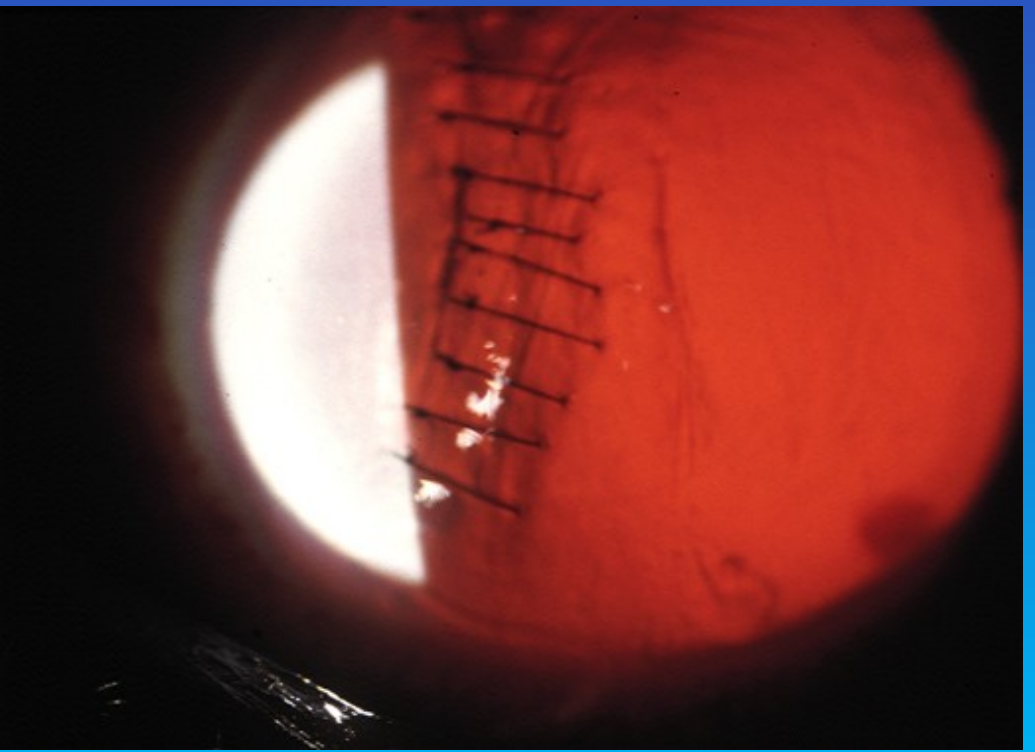
Iris prolapse

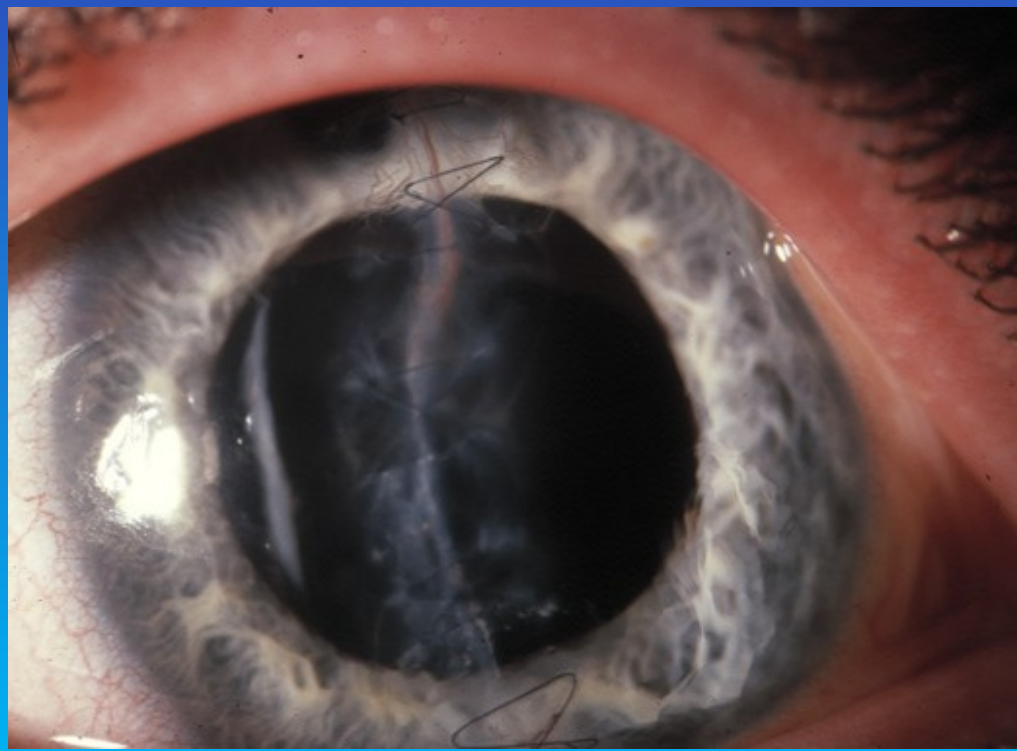
If it bleeds to touch it is viable – can reposit

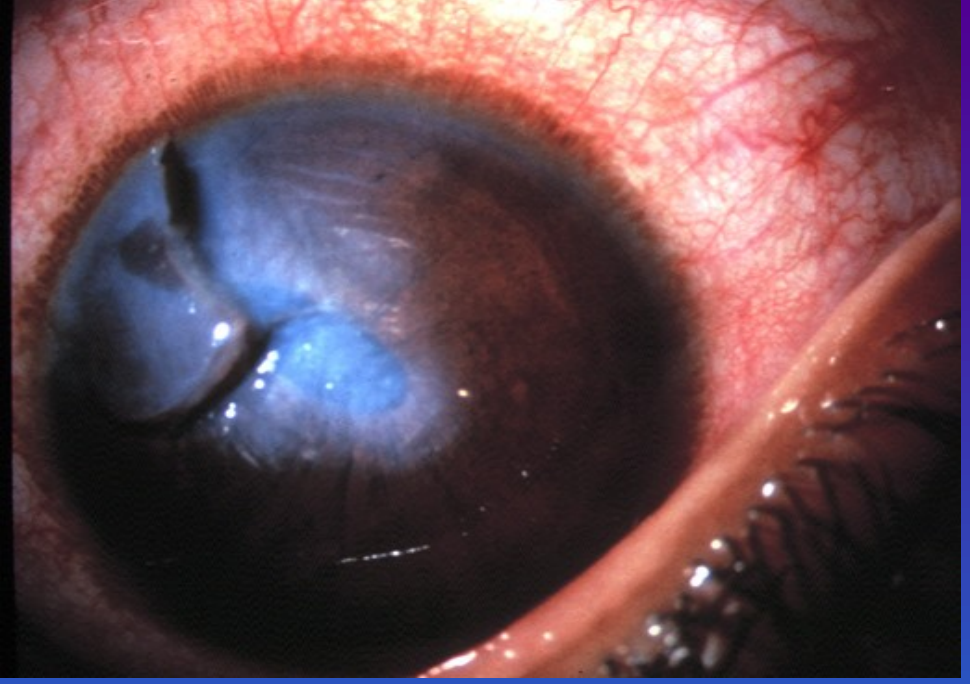


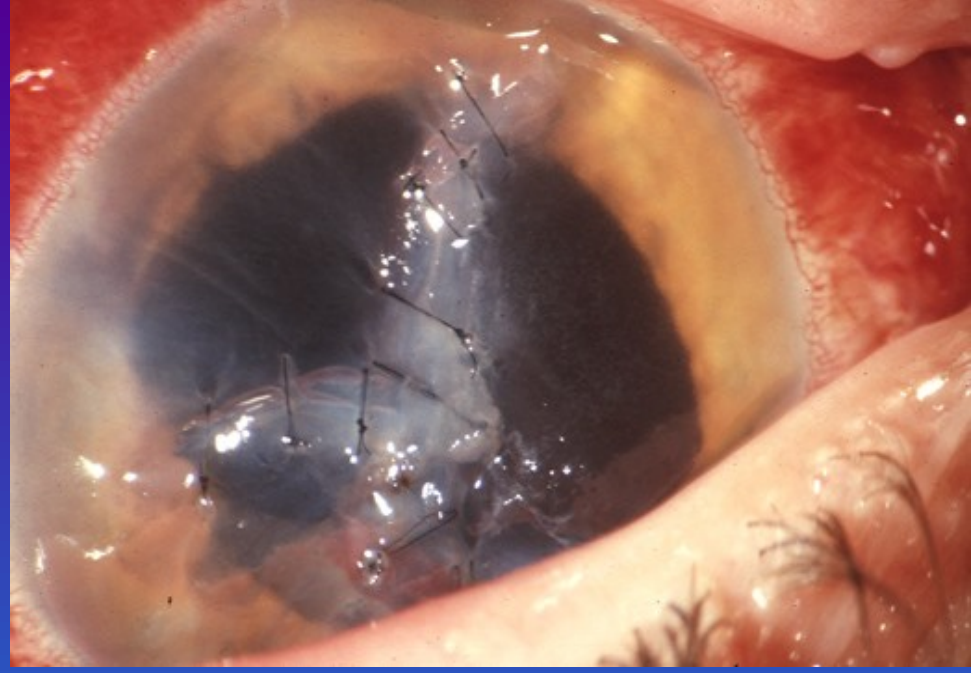


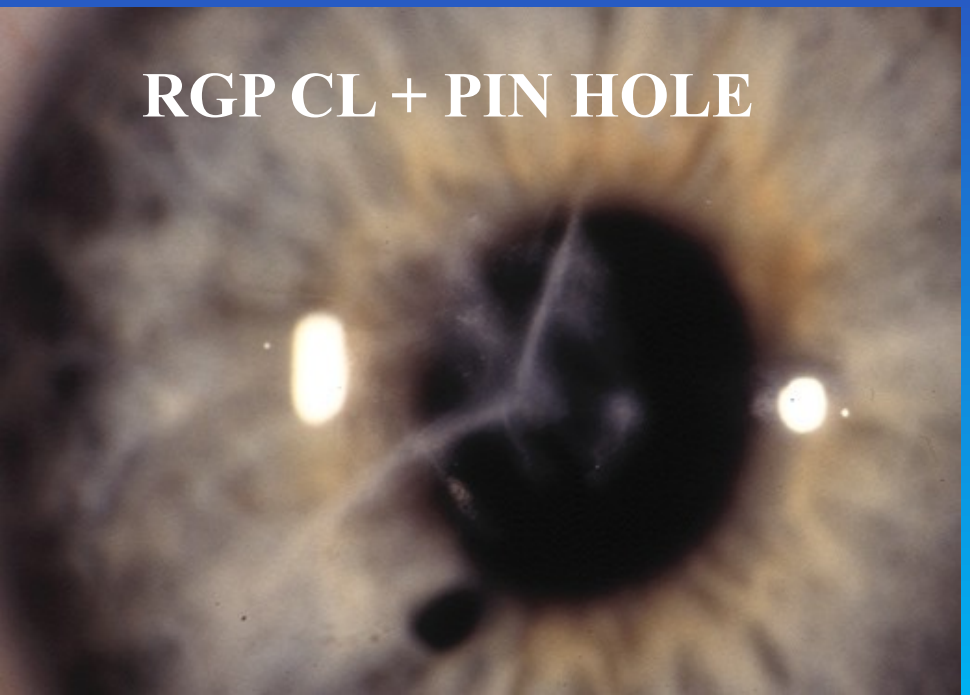
Always try RGP CL + Pin Hole vision



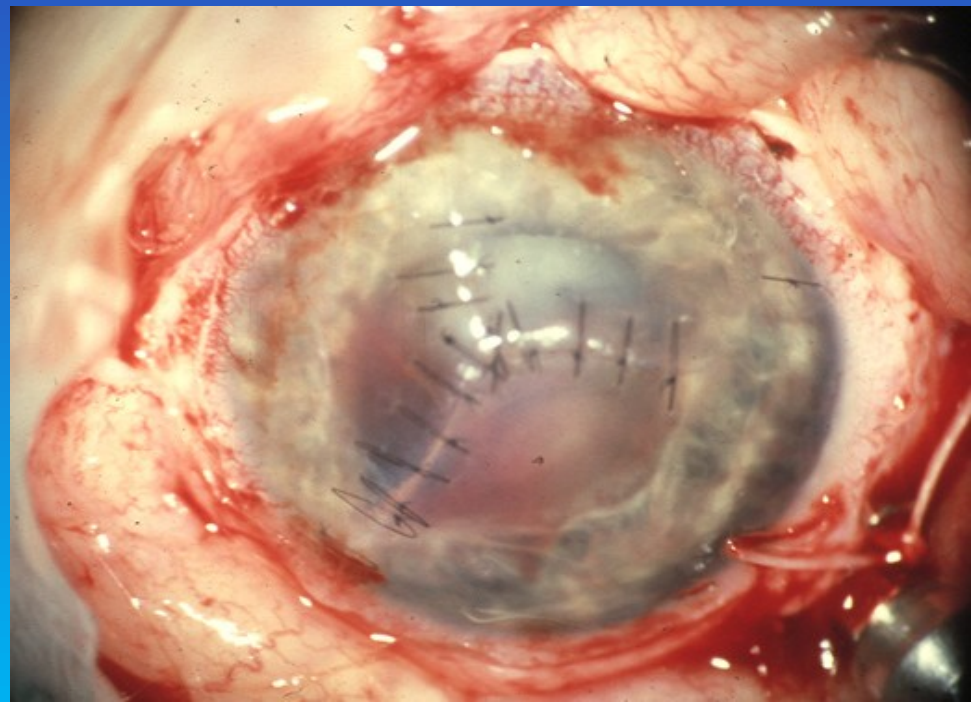








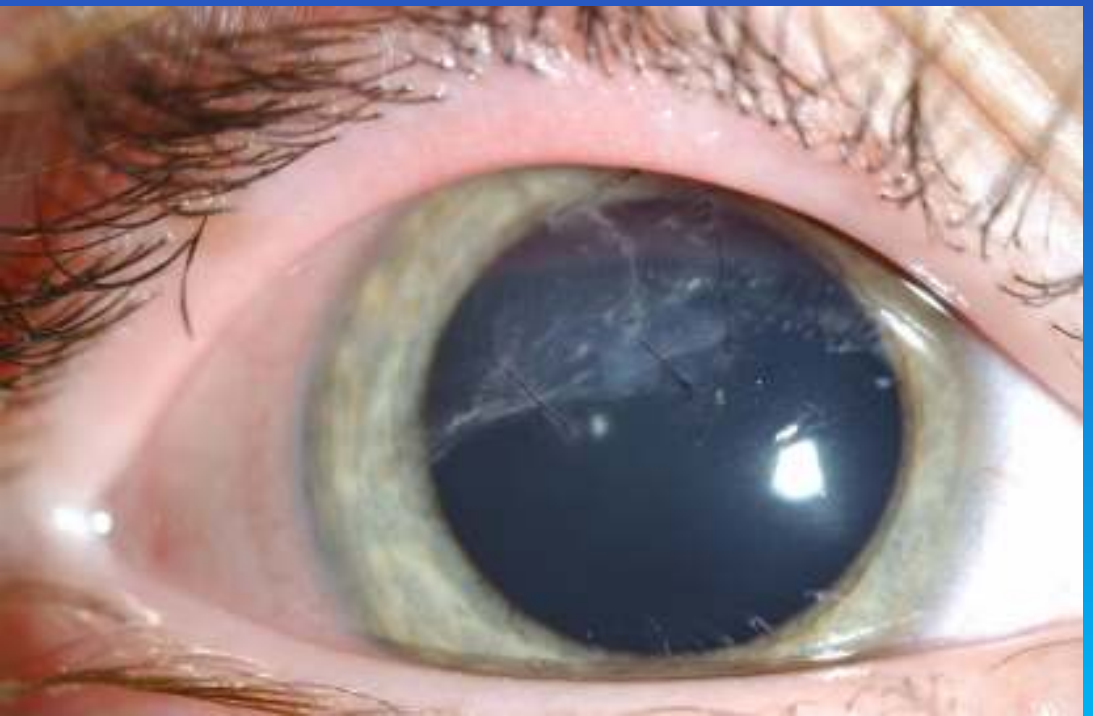
RGP CL + PIN HOLE

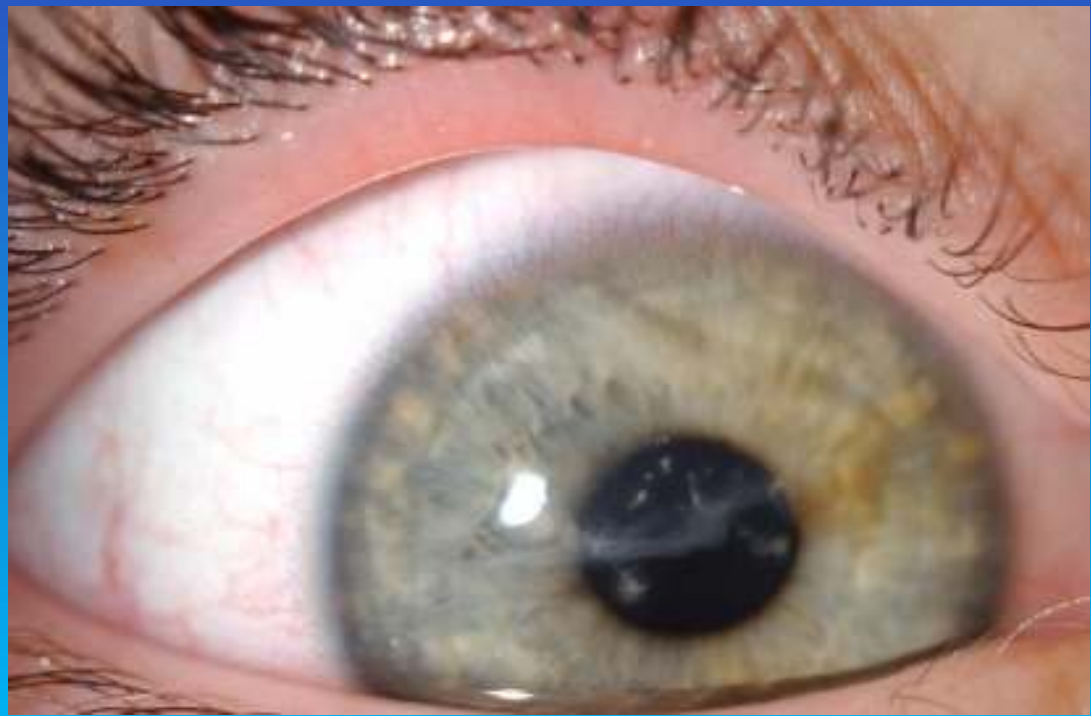


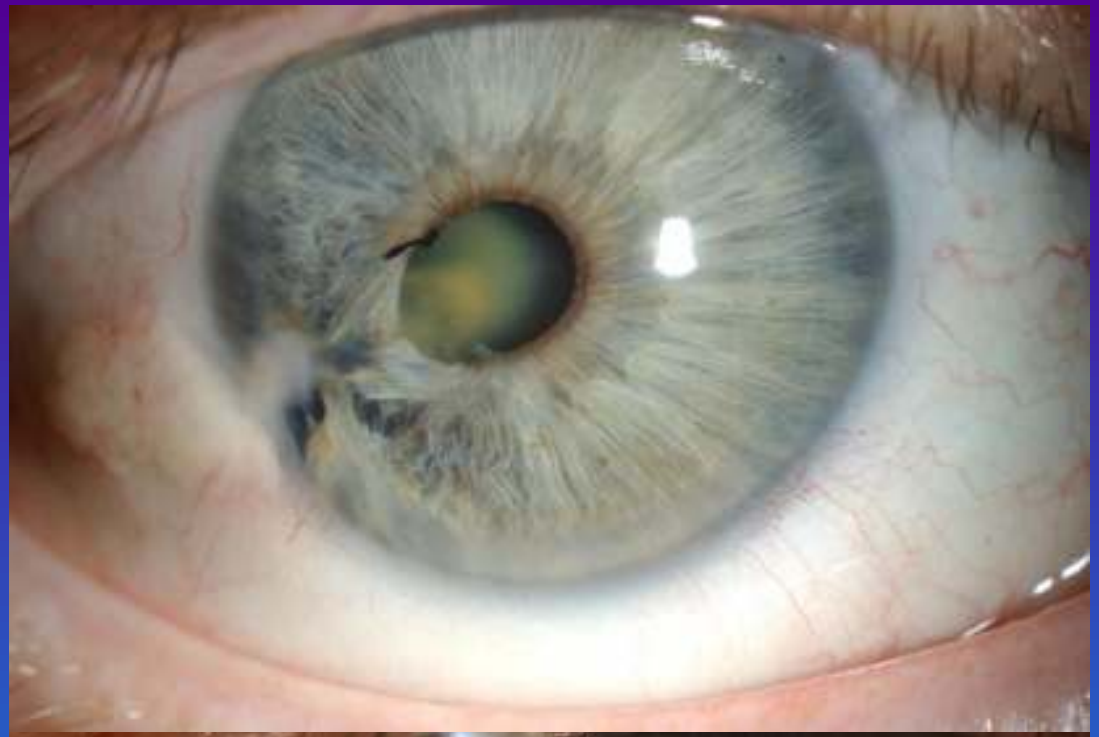
Arrow injury

[Brother to Sister]

RGP contact lens

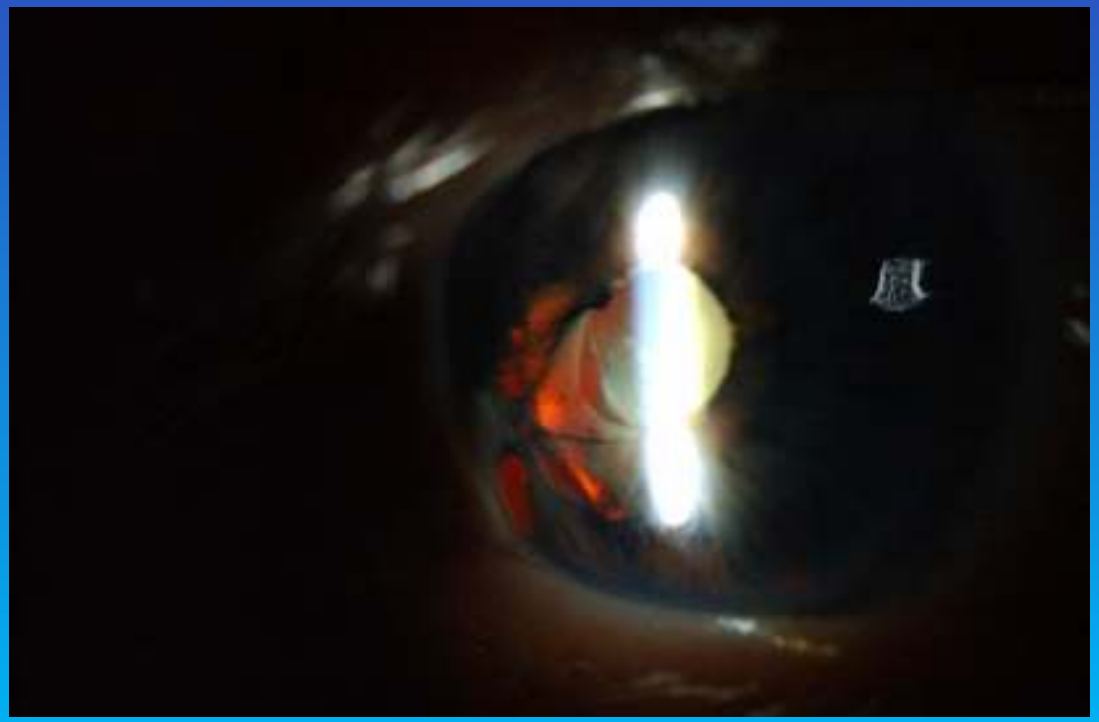






Penetrating injury can have a significant ‘Blunt’ component

Long term risk of cataract and glaucoma. Medicolegal significance



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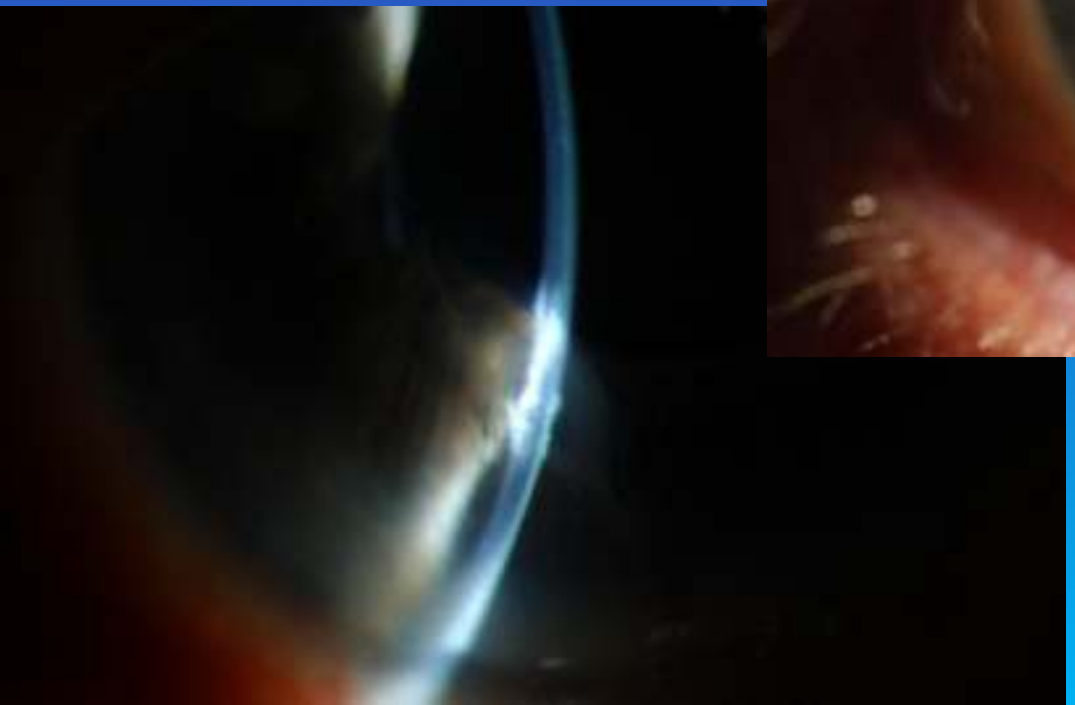
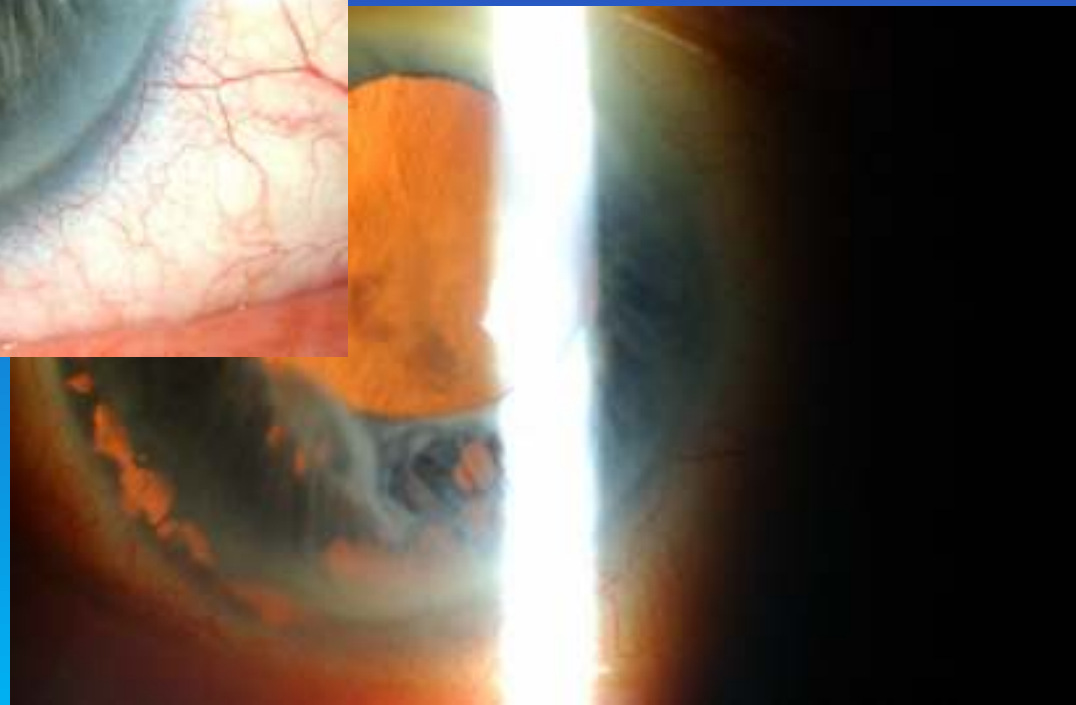
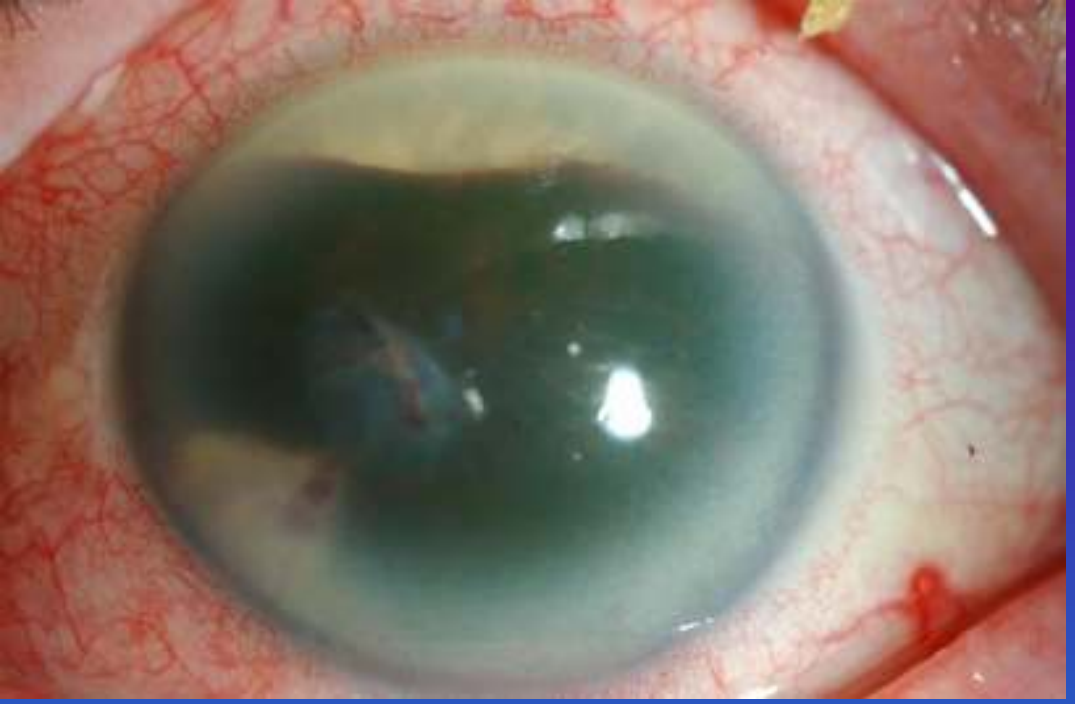
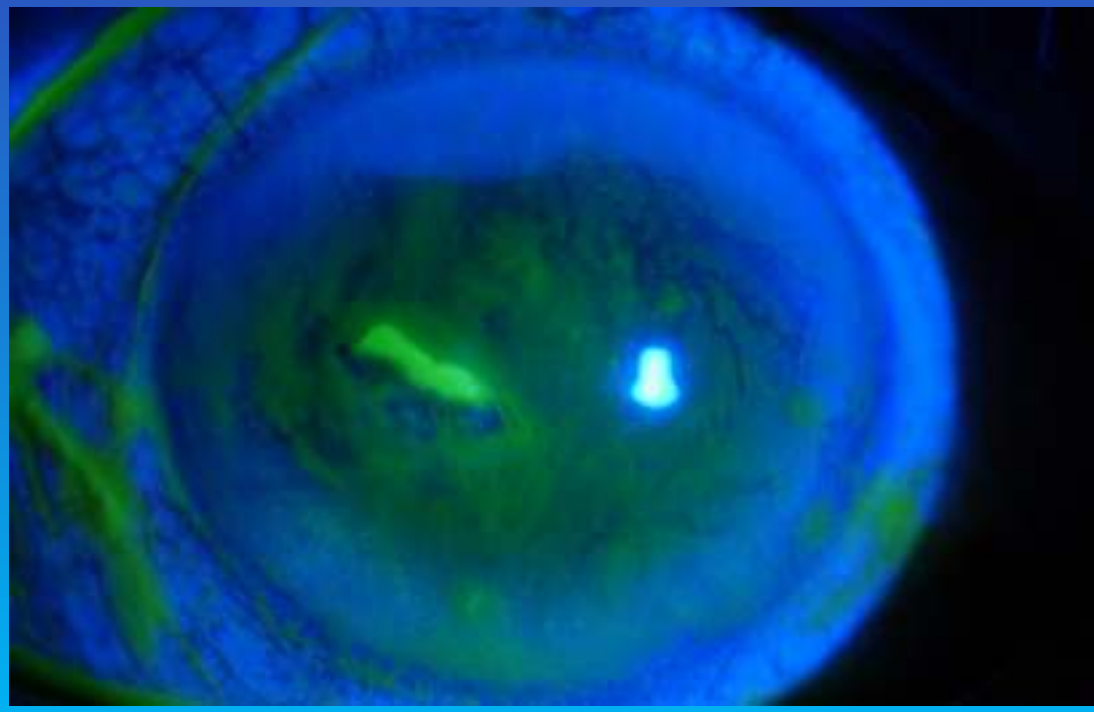






Blood in wound can mask a leak

High pressure can cause blood staining



Medications

Antibiotic drops – topical and systemic

Mydriatics

Steroids

Acetazolamide

Take Home Messages

Follow the principles of suturing –they make a difference. Do not debride stromal tissue

Explore extremities of laceration (in sclera)

Start suturing at the extremities of the wound

Do not bury the knot in the wound

Remember fibrin glue when you come ‘unstuck’

Queens Medical Centre, Nottingham

THANK YOU