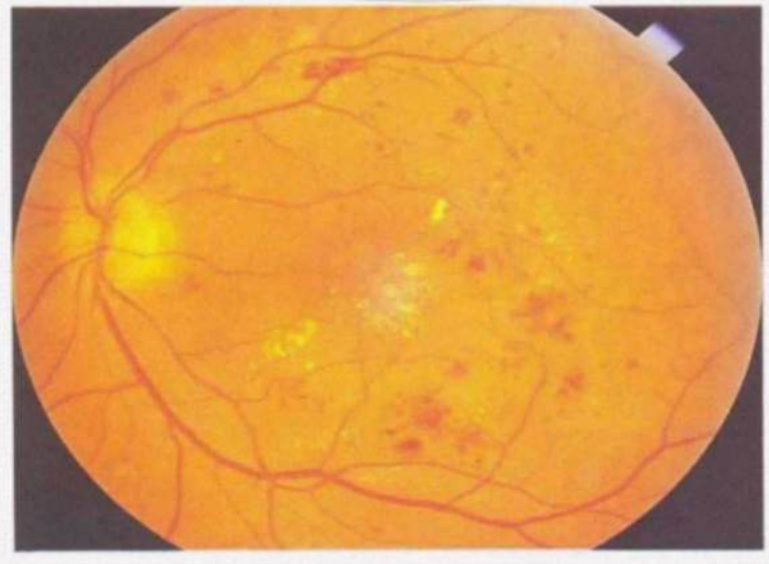
KGMC Ospes... Slides Eye

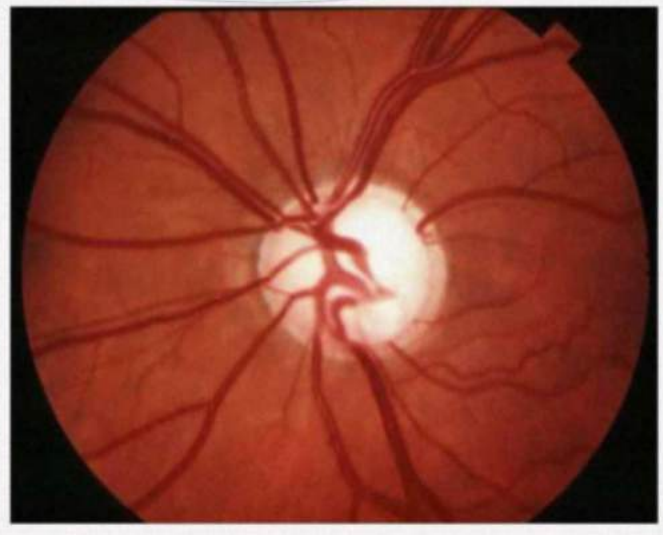


1. What findings are there in this fundus photograph?
2. What is your most probable diagnosis?
3. What is your differential diagnosis?
4. What options do we have to treat this patient?

STATION: DIABETIC RETINOPATHY

KEY:

1. Retinal hemorrhages, Retinal exudates (Hard exudates) involving macula---------- (1)
2. Diabetic Retinopathy(Non proliferative) with maculopathy-- (1)
3. Hypertensive retinopathy, CRVO, radiation retinopathy------(1.5)
4. ---------- --(1.5)
   a) Control diabetes and systemic risk factors
   b) Anti VEGF injections
   c) Focal macular laser



1. What findings do you see in this photograph?
2. What is your most probable diagnosis?
3. Name any three types of medications (topical) are used to treat this condition?
4. What surgical procedure is the gold standard for treating this condition?

STATION: OPTIC DISC CUPPING (OPEN ANGLE GLAUCOMA)

KEY:

1. Optic Disc cupping----------1
   (Increased cup-disc ratio)
2. Glaucoma (Open angle) ----------1.0
3.----------2 (Maximum)
   i. Prostaglandin analogues ----------0.5/each
   ii. Alpha-agonists (sympathetic) 0.5/each
   iii. B-Blockers
   iv. Para-sympathetic Pilocarpine)
   v. Carbonic anhydrase inhibitors
4. Trabeculectomy ----------1

1. What findings can be seen in this photograph?
2. What is your most probable diagnosis?
3. What is your differential diagnosis?
4. What are its possible complications?

STATION: CRVO

KEY:

1. Retinal bleeds(diffusely scattered), vascular dilatation/ tortuosity, Hyperemic disc & blurred margins, retinal/macular edema----------0.5/each(Max 2)
2. CRVO----------1
3. Diabetic retinopathy, Hypertensive retinopathy, Radiation retinopathy----------0.5/each (Max 1)
4. Anterior segment neovascularization (NVG),----------0.5/each (Max 1)

   Retinal neovascularization with its sequelae (Vit bleed & TRD)

1. What findings do you see in this photograph?
2. What are your primary concerns in this eye?
3. Is there any risk to the fellow eye?
4. How are you going to treat this eye?

STATION: OGI WITH UVEAL PROLAPSE

Key

1.OGI (Scleral laceration with uveal tissue prolapse and distorted pupil)----------1.5

2.

a) Reduce pain----------0.5/each (Max 1.5)
b) Reduce inflammation
c) Prevent infection
d) Exclude IOFBs and so its related complications.
e) Restore anatomical integrity (globe repair)

3. Sympathetic ophthalmia---------- 1.0
4. Prepare for GA, Antibiotics, Anti inflammatory ----- drugs, Globe repair after excluding IOFBs -------- 1.0

1. What findings do you see in this photograph?
2. What clinical tests/procedure you would like to perform for this patient?
3. What is the most common underlying cause in children for this condition?

STATION: RIGHT ESOTROPIA (CHILD)

KEY:

1. Right convergent squint (Esotropia) ----------1

2. ----------1/each (Max 3.0)

   a. VA check including amblyopia
   b. Squint assessment tests (Hirshberg's, Krimsky etc)
   c. Cycloplegic refraction
   d. Fundoscopy

3. Hypermetropia----------1.0

CENTRAL RENTINAL VEIN OCCLUSION

Ischemic

- Less common
- Severe visual loss (usually < 6/60)
- Sudden – painless

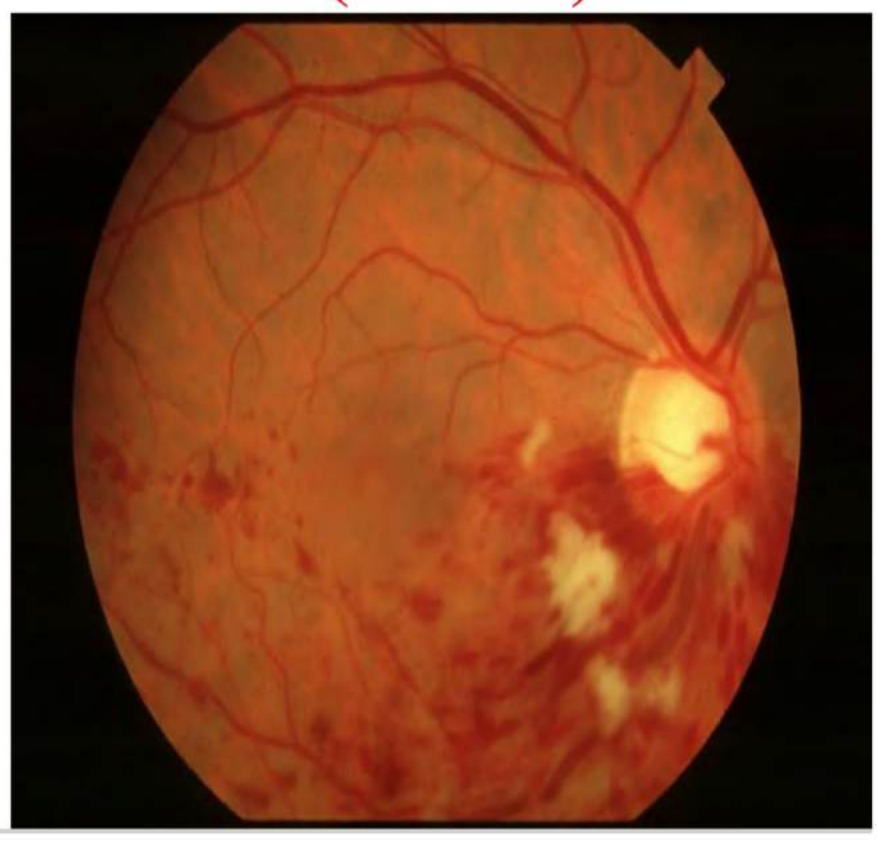
- **SIGNS:** All are Severe

Branch retinal vein occlusion (BRVO)

Signs of acute BRVO

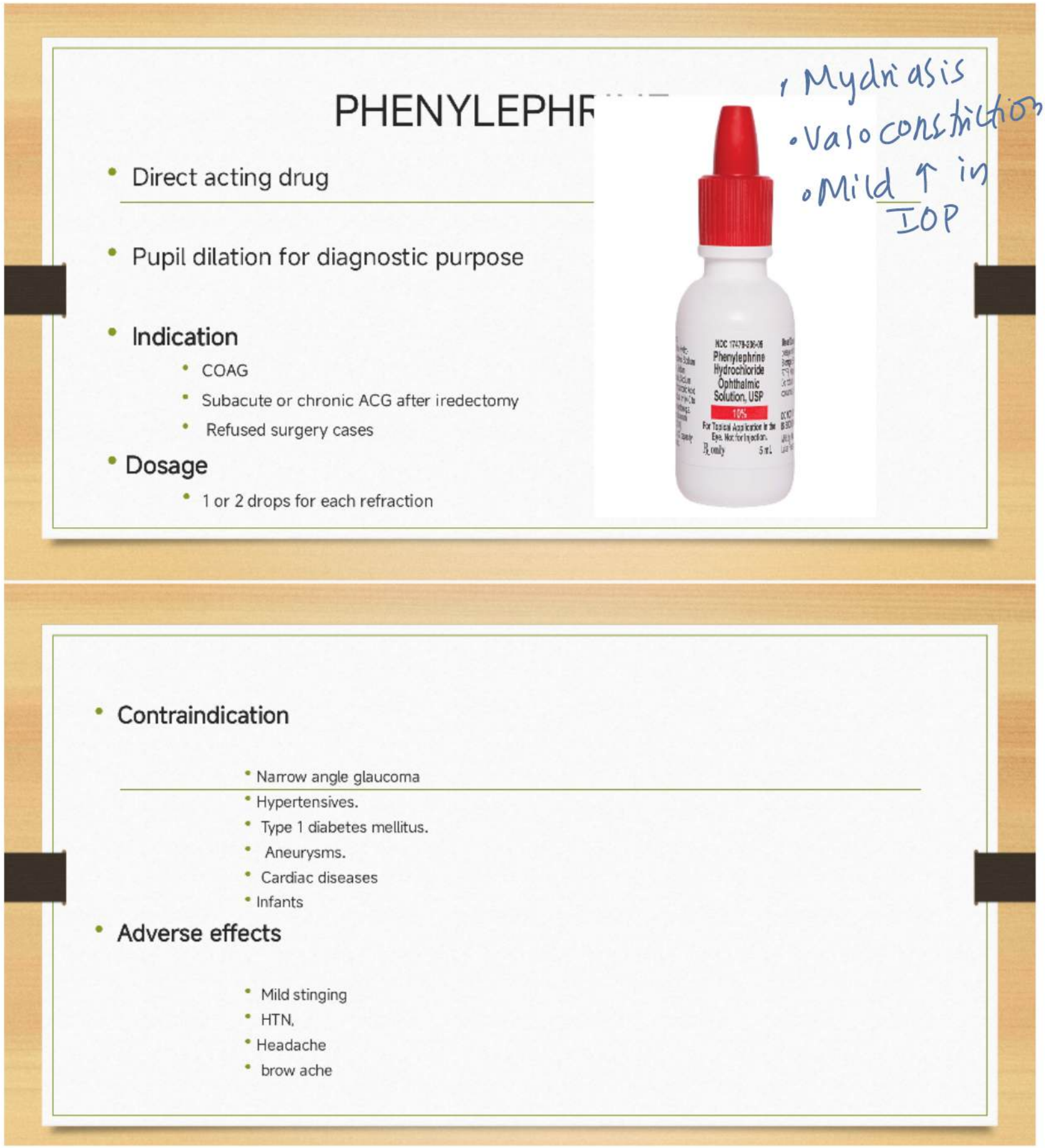
- **Most common Supero temporal**
- **Venous tortuosity and dilatation**
- **Retinal Edema**
- **Flame-shaped and 'dot-blot' haemorrhages**
- **Cotton-wool spots and retinal oedema**

All in part of retina drained by affected vein



Mechanism of Action of Phenylephrine in Ophthalmology

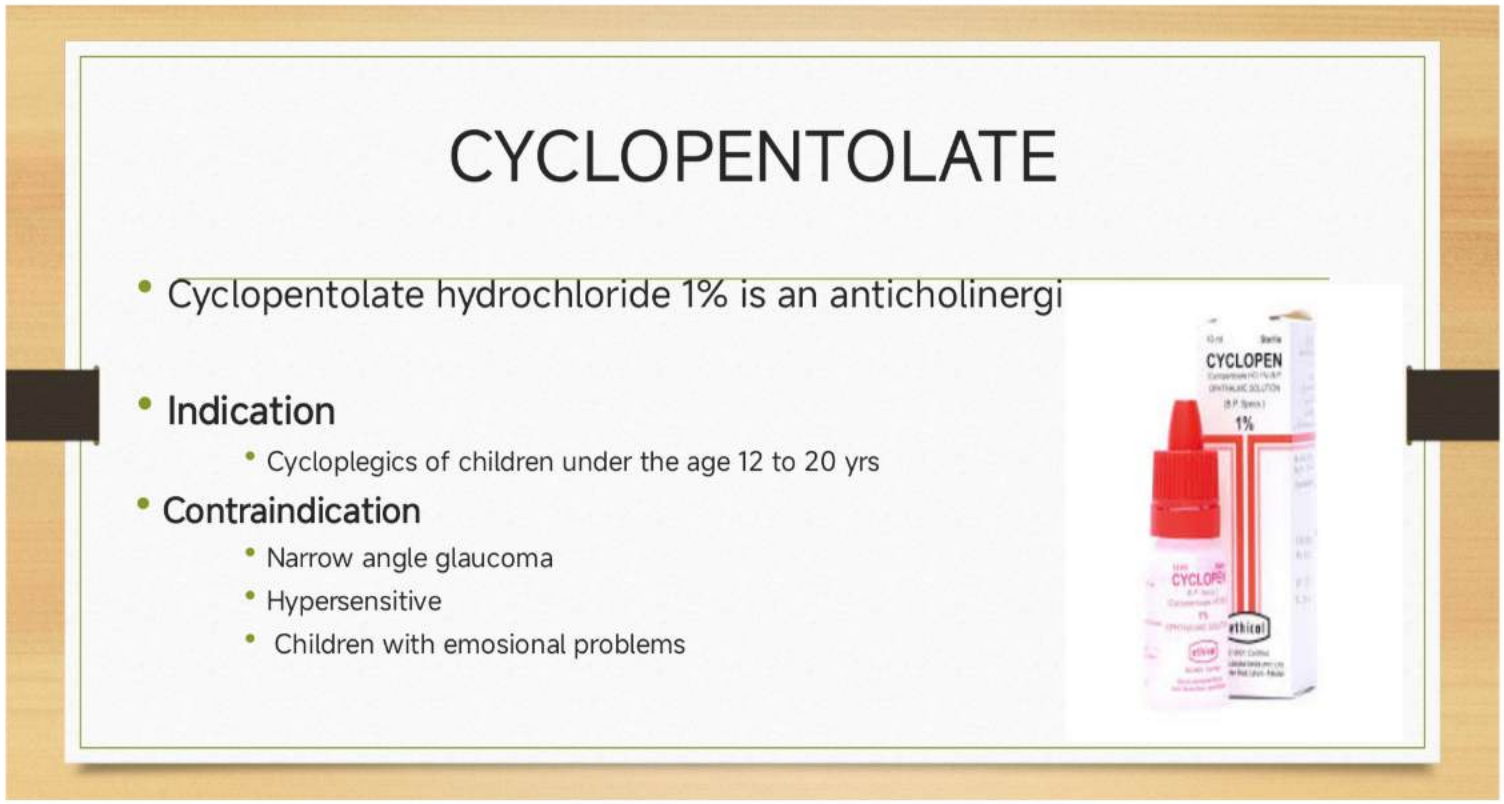
Phenylephrine is a **direct-acting α1-adrenergic agonist** that primarily affects the **sympathetic nervous system** in the eye.



ATROPINE

- Atropine sulfate is anticholinergic – 0.5%, 1%,3%
- Strongest drug in cycloplegics
- Inhibitor of muscarinic action of acetylcholine
-
- Indication
  - Mydriasis & cycloplegia
  - Pupil dilation in inflammatory condition of iris
  - Amblyopia therapy
-

- Contraindication
  - 1° glaucoma
  - Hypersensitive
- Adverse effects
  - Allergic responses
  - Blurred vision
  - Photophobia
  - Dryness of skin & mouth
  - Skin rash
- Dosage – 1 or 2 drops 0.5% to each eye, twice daily for 1 to 3 days prior to examination



Uses of Cyclopentolate in Ophthalmology

Cyclopentolate is a **topical anticholinergic (parasympatholytic) drug** used for:

1. **Cycloplegic Refraction** – Temporary paralysis of the ciliary muscle to determine refractive errors, especially in children.
2. **Mydriasis (Pupil Dilation)** – Used for **fundus examination** and retinal evaluation.
3. **Uveitis Treatment** – Helps **prevent posterior synechiae formation** and relieves ciliary spasm, reducing pain.

Adverse Effects of Cyclopentolate

Ocular Side Effects:

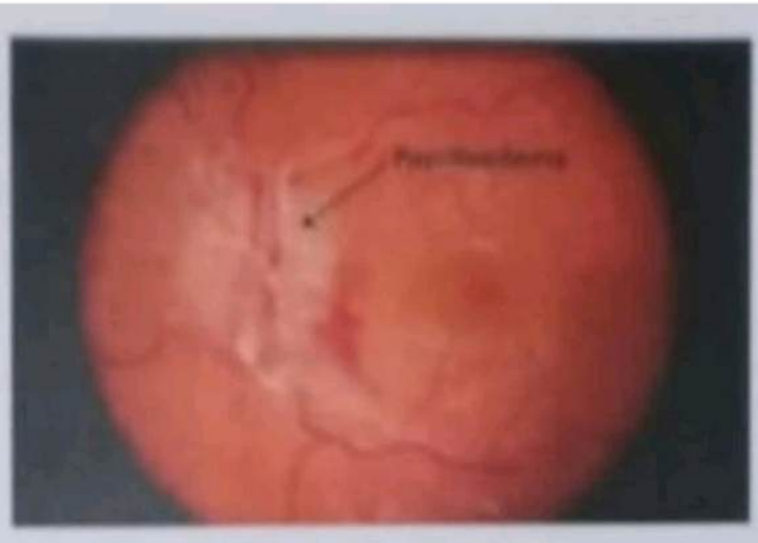
- **Transient Stinging & Irritation**
- **Blurred Vision** (due to cycloplegia)
- **Photophobia** (due to prolonged mydriasis)
- **Increased Intraocular Pressure (IOP)** – Can **precipitate acute angle-closure glaucoma** in susceptible individuals.

ANTI – FUNGAL DRUGS

- Common drugs
  - Natamycin
  - Amphotericin B

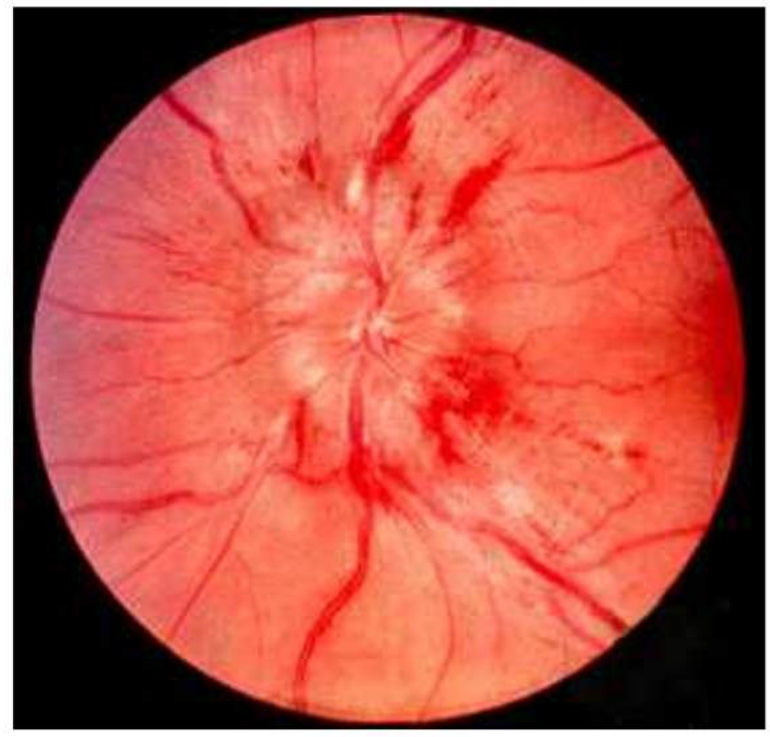
ANTI-INFLAMMATORY AGENTS

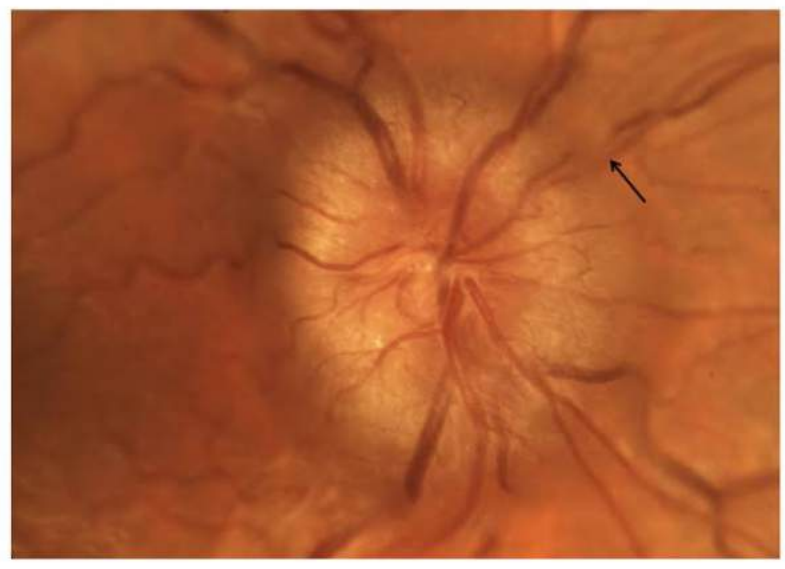
- Non – steroidal
  - Topical :- Flurbiprofen sodium
  - Systemic :- Keterolac tromethamine
- Steroidal
  - Topical :- Fluoromethelone
  - Systemic :- Prednisolone



A 25 year old patient is diagnosed with papilloedema

1. what is papilloedema? (1)
2. what are the symptoms of papilloedema, both systemic and occular? (2)
3. what investigations will you perform in papilloedema? (2)





X **papilloedema:-**

It is the passive edema of optic nerve head secondary to raised intracranial pressure.

Symptoms:-

Systemic → Headach
Neausea & vomiting.
Deterioration of consciousness.

Ocular →

- Recurrent attacks of transient blackening out of vision lasting for 10-15 seconds.
- Diplopia.

Investigations:-

Examination → • Blood pressure checkup.
• Full neurological examination
• Fundus examination.

Lab Investigation
- CBC & ESR.
- Blood Sugar
- Serology for Syphilis
- Lumber puncture for opening p

Imaging X-ray orbit
CT Scan
MRI
MRA

Chief Complaint and HPI

- One eye (which eye?) vs. both eyes
- Onset
- Severity
- Duration
- What makes it better/worse
- Treatments/interventions
- Ever occur before? When? What happened?

ROS – Changes in vision

- Flashes and floaters → retinal detachment
- Shade/curtain over vision → retinal detachment, amaurosis fugax
- Distortion/wavy lines → macular degeneration
- Glare → cataracts
- Blurry vision → corneal pathology, new glasses Rx
- Scotomas → central visual pathways
- Double vision → misalignment, palsies, motility
  - VERY important to ask if it happens when both eyes are open or when one eye is closed (ask: "does the double vision go away when you close one eye?")
- Sudden painless loss of vision → retinal artery occlusion

ROS - Pain

- Photophobia → uveitis, meningismus
- Pain with EOM or without EOM? → consider MS in young white female with vision changes and pain with EOM
- HA → loss of vision + HA in older person = consider temporal arteritis
- Any Foreign body Sensation

ROS - Other

- Eye discharge → conjunctivitis
- Eye redness → conjunctivitis, acute angle closure, scleritis, episcleritis
- Tearing and itchiness → often allergic

Ocular history

- Glasses?
  - For reading or for distance?
    - If for distance, what is Rx → Rx > -6.00 increased risk of retinal detachments
  - When was last Rx given?
- Contacts? Do you sleep in them?
- Personal history of:
  - Surgeries (LASIK, strabismus, cataract, etc.)
  - Traumas
  - Glaucoma ("high eye pressures"), macular degeneration, retinal detachments

Family ocular history

- Glaucoma
- Macular degeneration
- Early cataracts
- Sudden loss of vision

Prior medical history

- Diabetes
- HTN
- Rheumatic disease (ask about Plaquenil use)
- Sickle cell
- Chronic steroid use

Social history

- Smoking → use those smoking cessation skills!

Gradual Visual Loss

- Refractive errors
- Cataract
- Primary Open Angle Glaucoma
- Age Related Macular Degeneration
- Diabetic Retinopathy
- Papilledema

Sudden Visual Loss

- CRVO, BRVO
- CRAO, BRAO
- Retinal Detachment
- Vitreous hemorrhage
- Acute Angle Closure Glaucoma
- Optic Neuritis
- Endophthalmitis
- Trauma

Painful Visual Loss

- Acute Angle Closure Glaucoma
- Neovascular Glaucoma
- Lens induced Glaucoma
- Endophthalmiti's / Panophthalmitis
- Optic Neuritis
- Anterior uveitis
- Trauma

Painless Visual Loss

- Cataract
- Primary Open Angle Glaucoma
- CRVO
- CRAO
- Retinal Detachment
- Vitreous hemorrhage
- Macular Degeneration

Red eye

Painful

Presence of photophobia or blurred vision

Keratitis, Acute Angle Closure Glaucoma

for glaucoma, consider halos

Painless

Significant blurring of vision

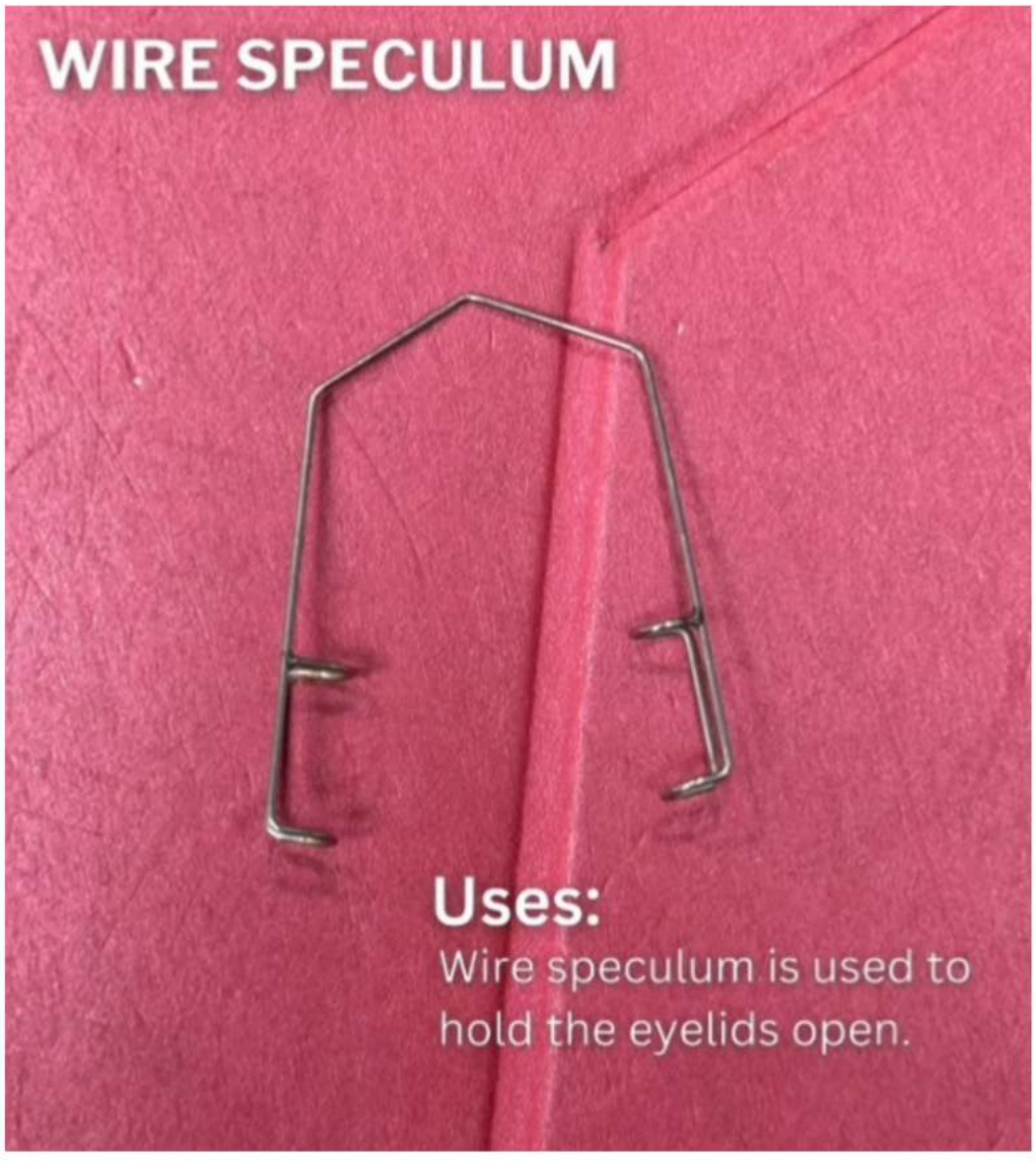
Anterior uveitis

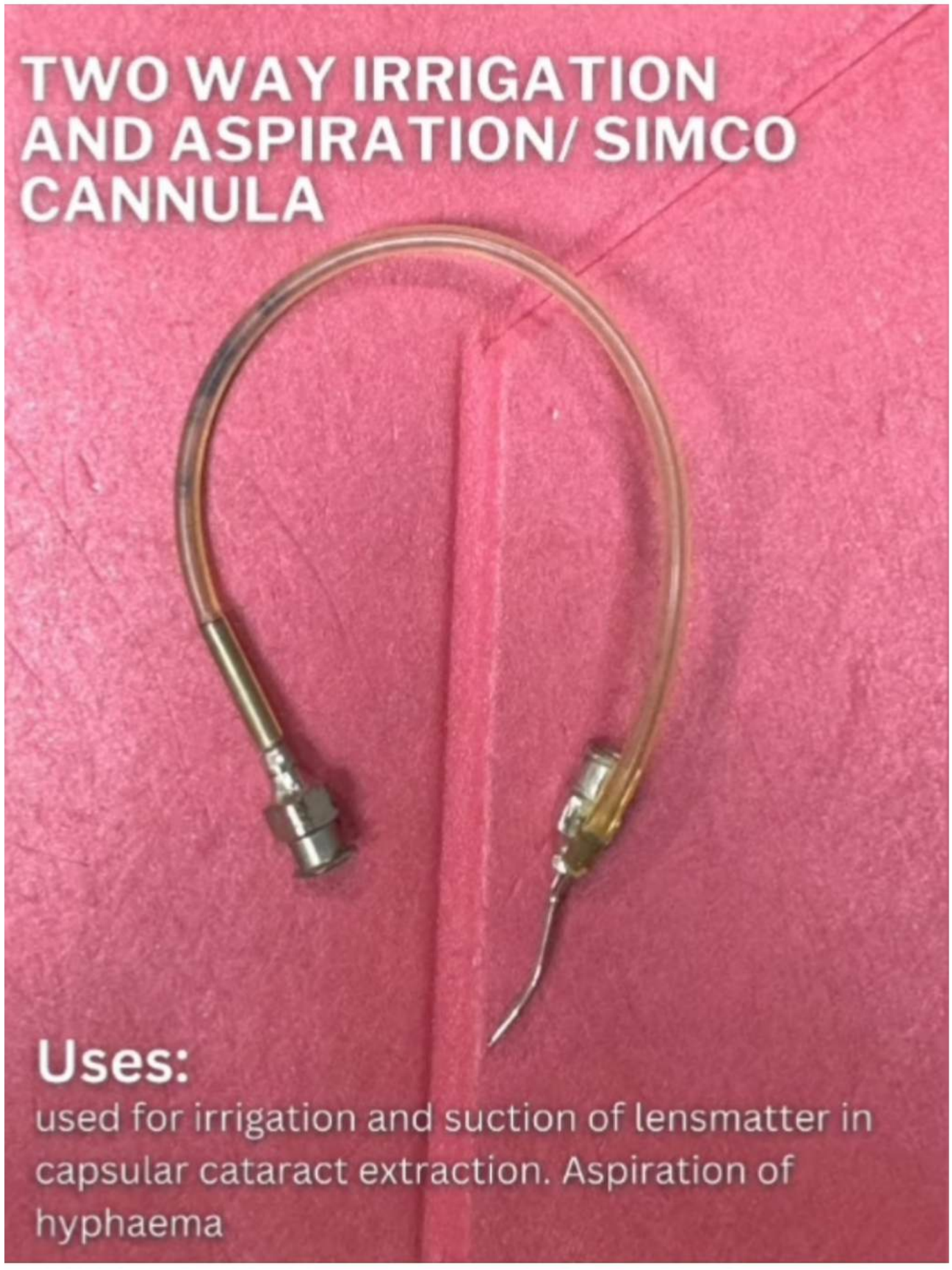
Relatively normal vision

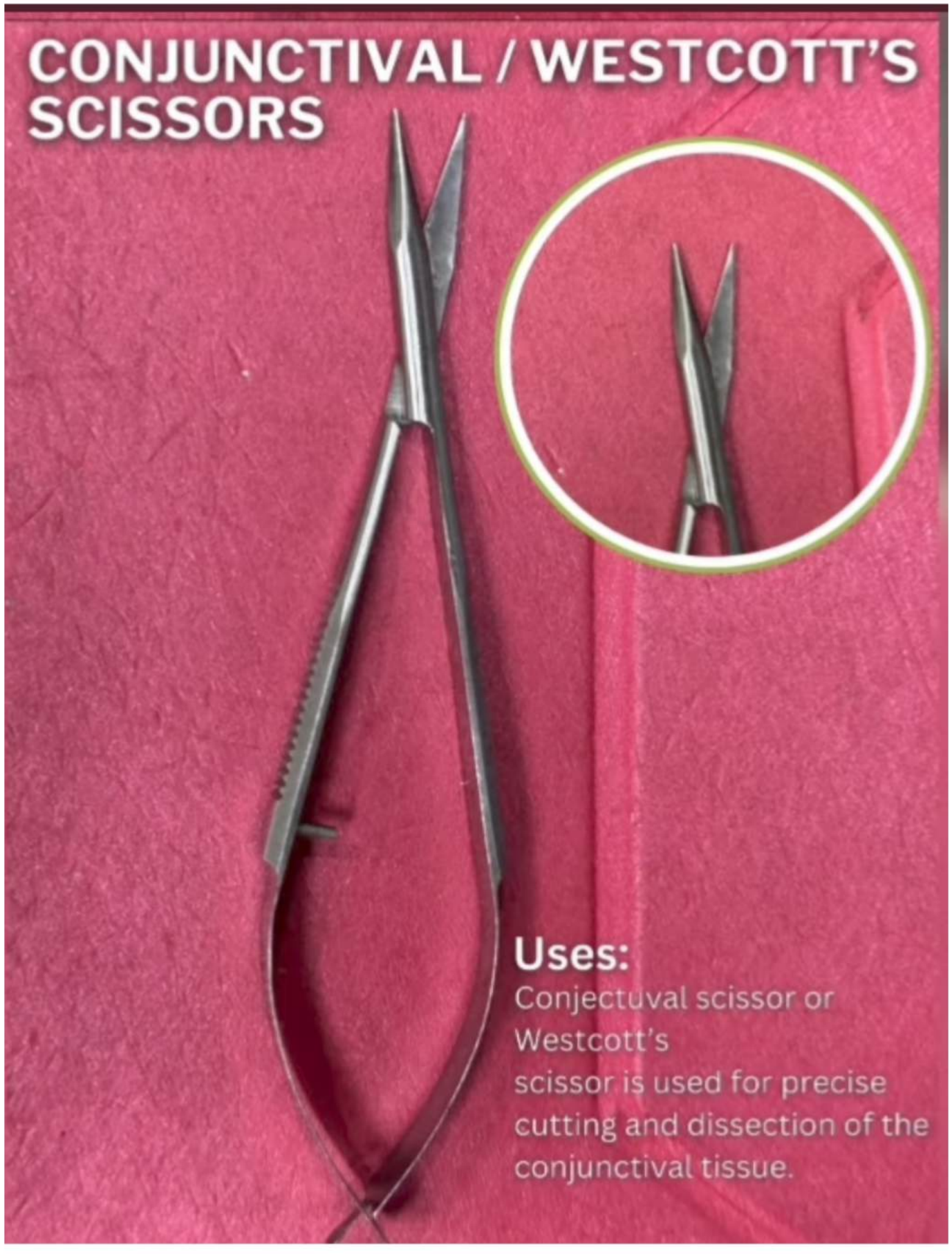
Conjunctivitis

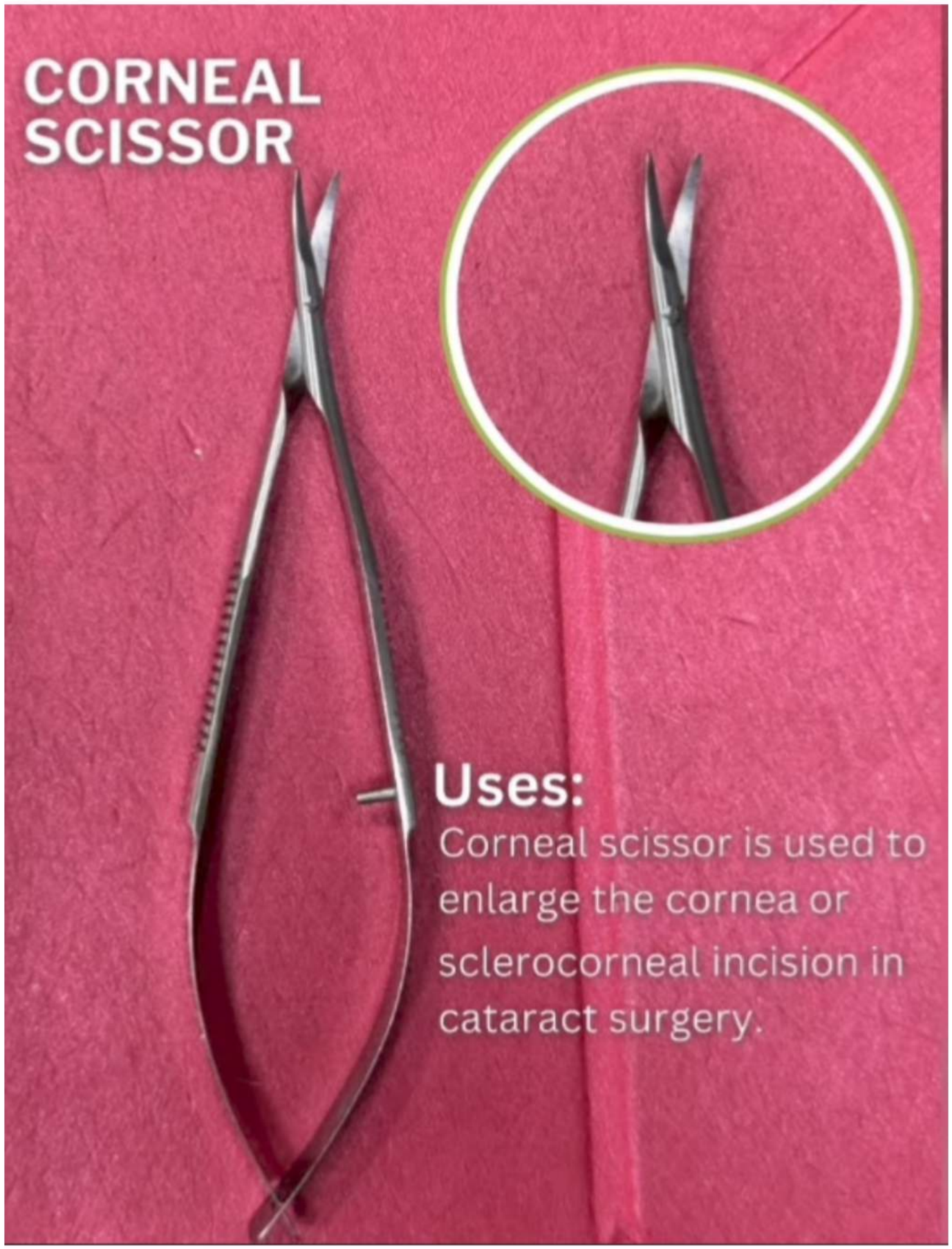
Other Things To Look for

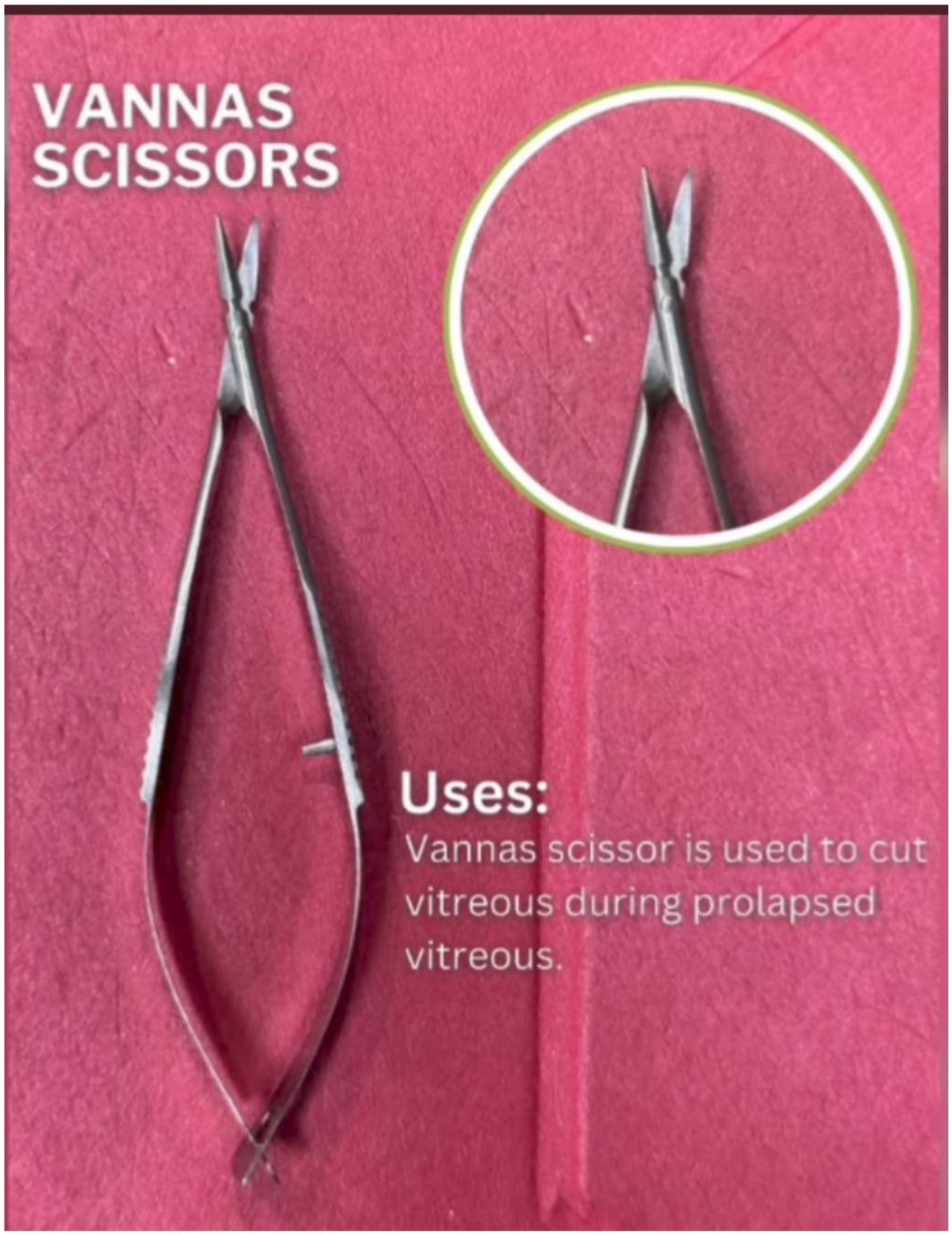
- Vision Loss
- Secretions
- Photophobia
- Colored Halos
- Congestion
- Pupil size and shape

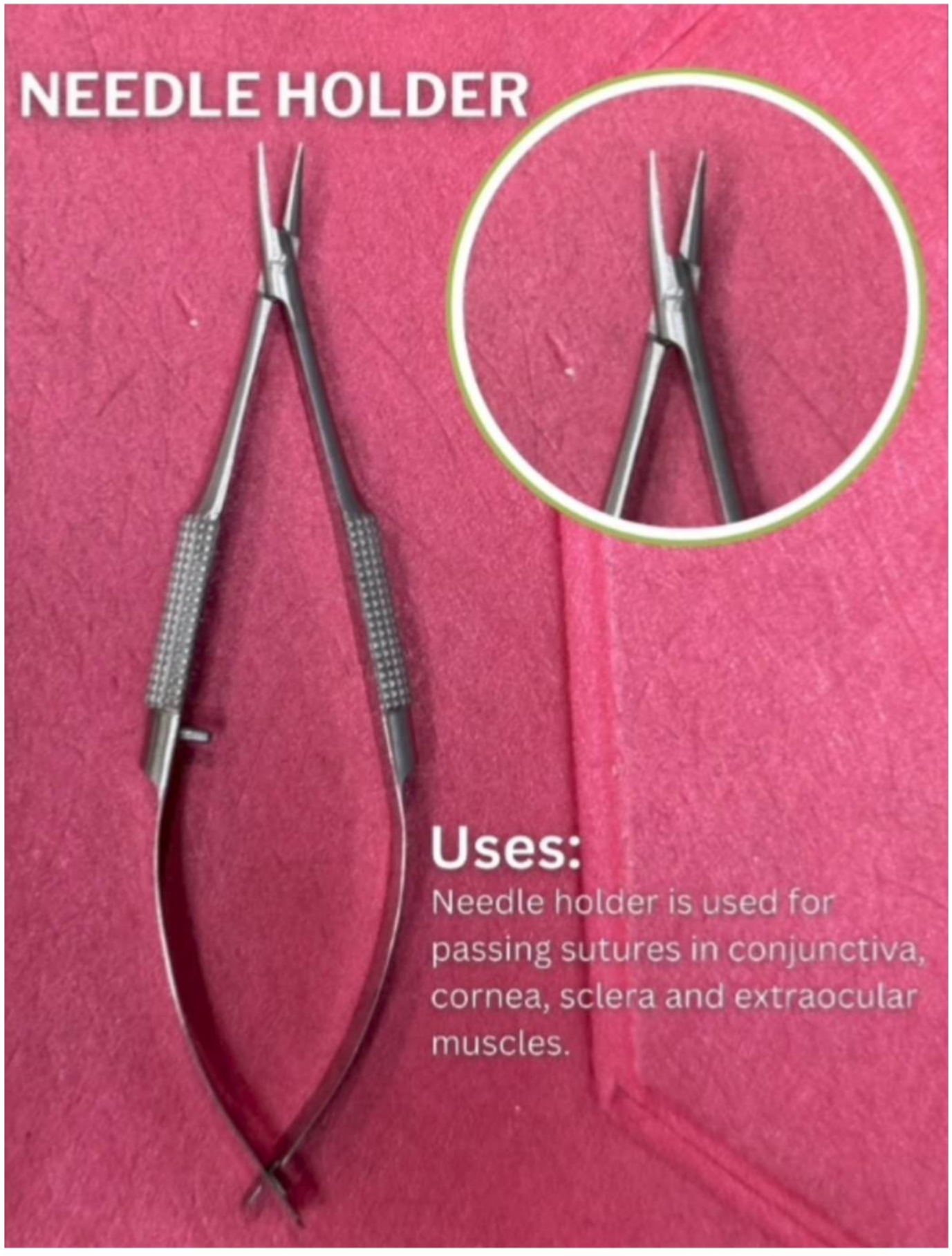

WIRE SPECULUM
Uses:
Wire speculum is used to
hold the eyelids open.

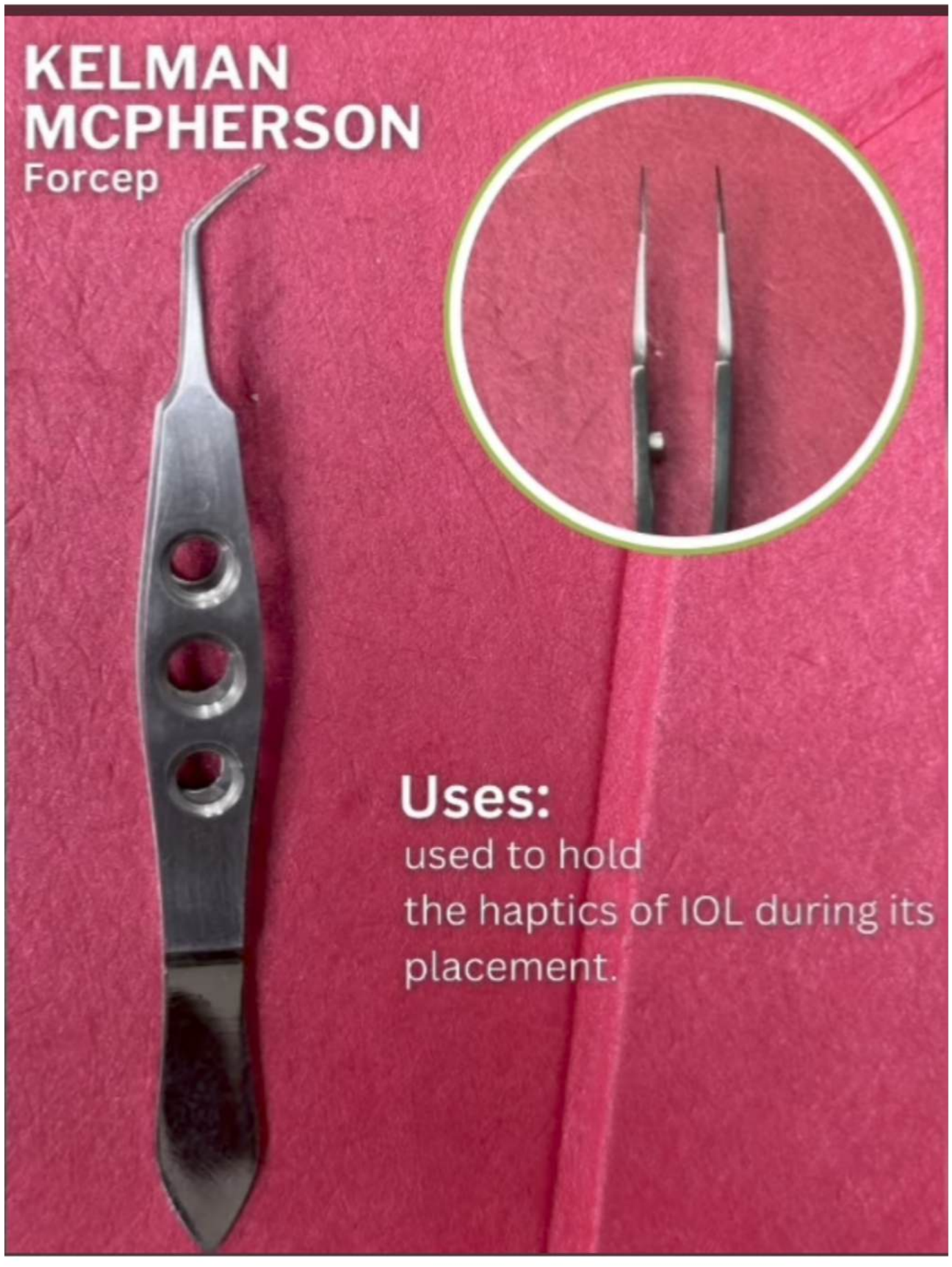

TWO WAY IRRIGATION AND ASPIRATION/ SIMCO CANNULA
Uses:
used for irrigation and suction of lensmatter in capsular cataract extraction. Aspiration of hyphaema

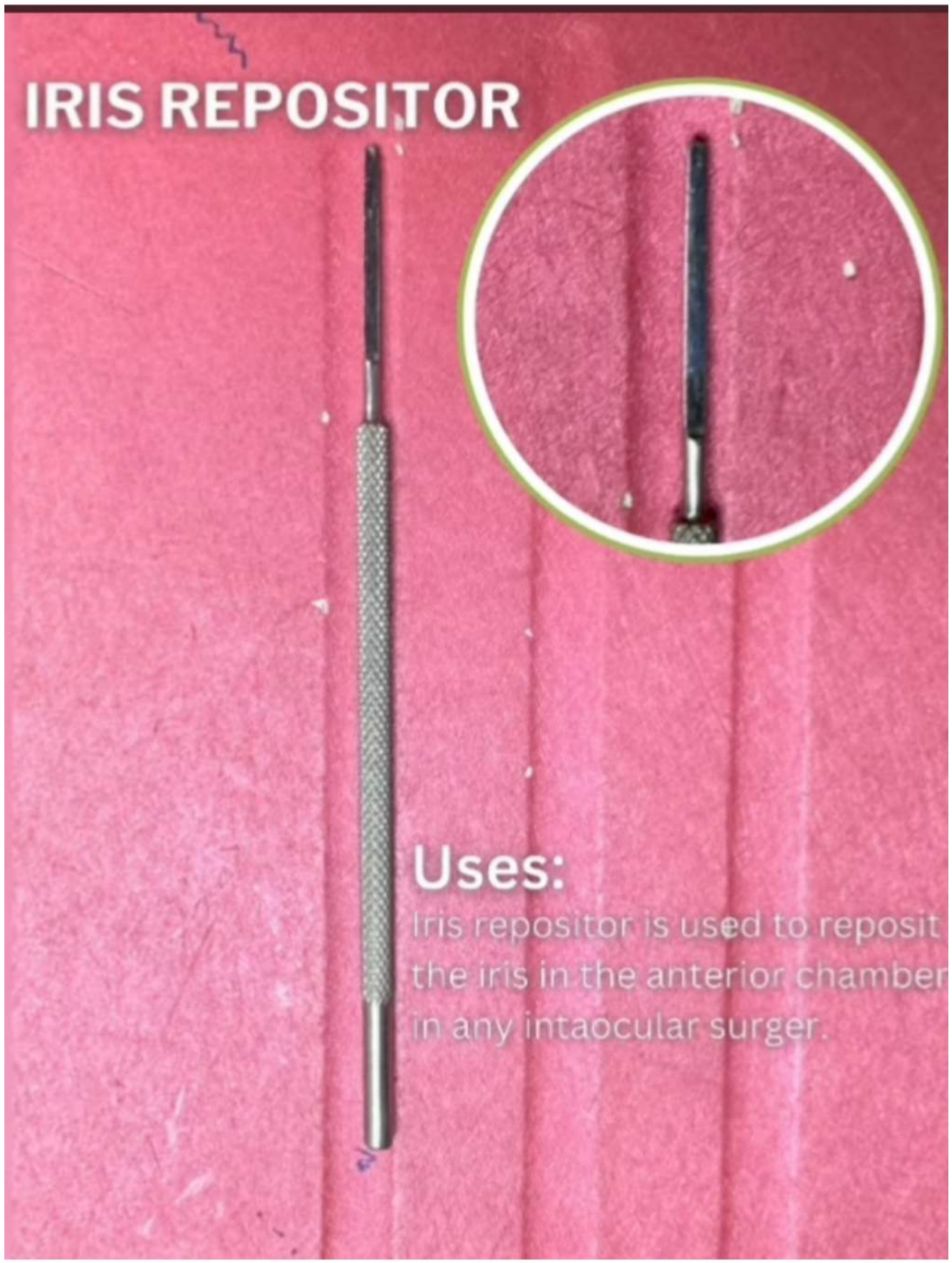

CONJUNCTIVAL / WESTCOTT'S SCISSORS
Uses:
Conjectuval scissor or Westcott's
scissor is used for precise cutting and dissection of the conjunctival tissue.

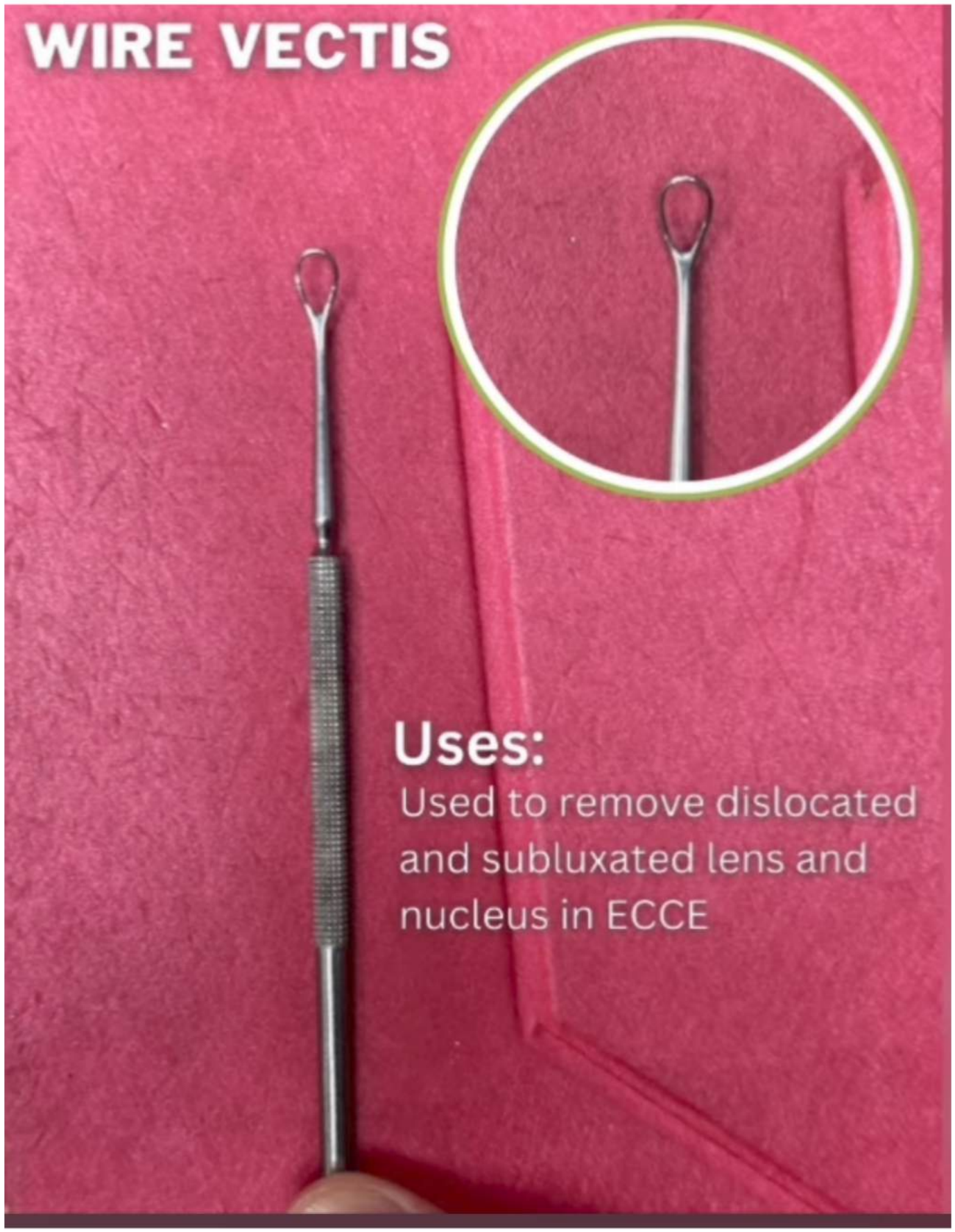

CORNEAL
SCISSOR
Uses:
Corneal scissor is used to enlarge the cornea or sclerocorneal incision in cataract surgery.


VANNAS
SCISSORS
Uses:
Vannas scissor is used to cut vitreous during prolapsed vitreous.


NEEDLE HOLDER
Uses:
Needle holder is used for passing sutures in conjunctiva, cornea, sclera and extraocular muscles.


KELMAN
MCPHERSON
Forcep
Uses:
used to hold
the haptics of IOL during its
placement.

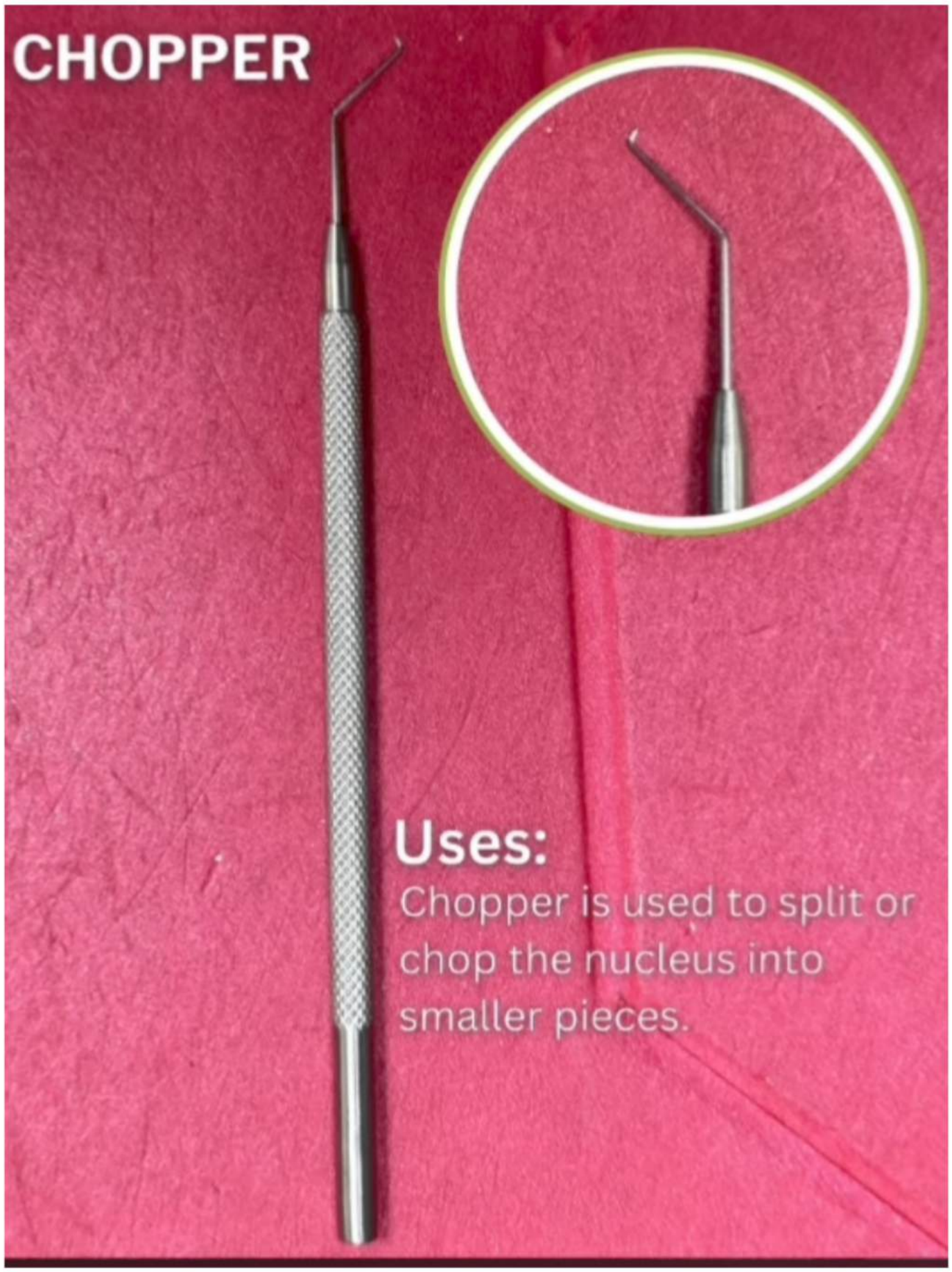

IRIS REPOSITOR
Uses:
Iris repositor is used to reposit
the iris in the anterior chamber
in any intaocular surger.

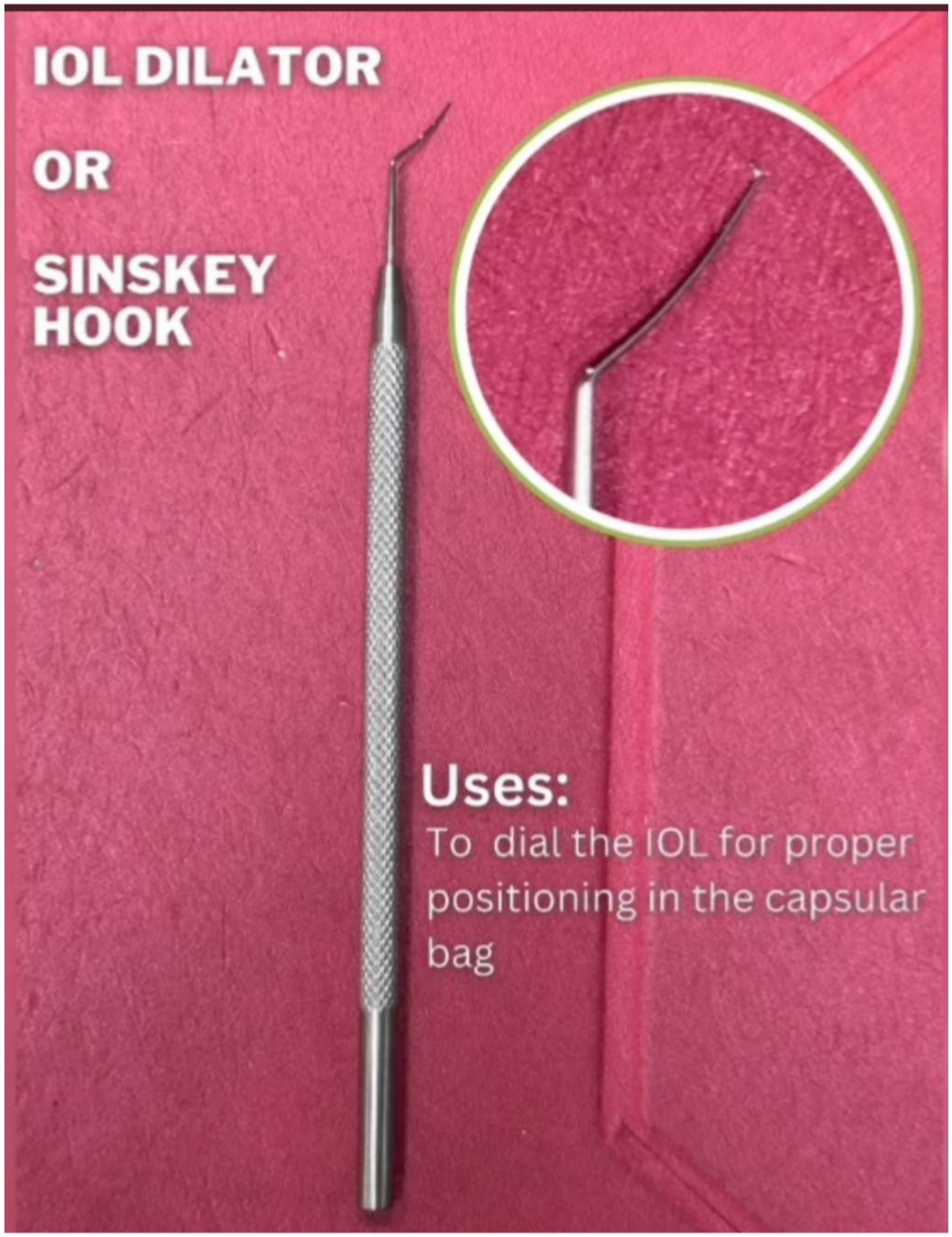

WIRE VECTIS
Uses:
Used to remove dislocated and subluxated lens and nucleus in ECCE

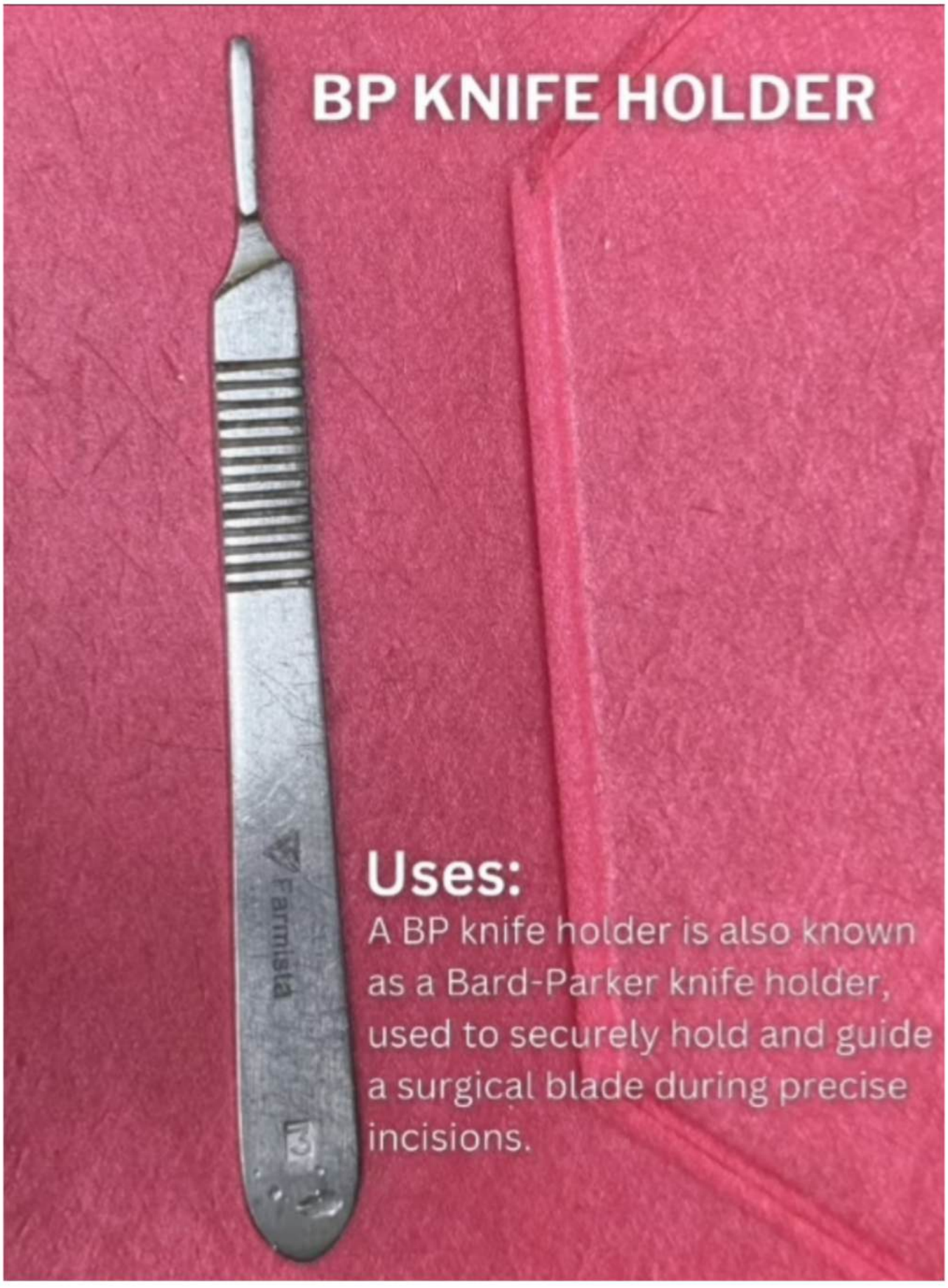

SUTURE TYING FORCEPS
Uses:
To hold sutures during operations


TOOTH FORCEP
Uses:
To hold superior rectus muscle while passing a bridle suture under superior rectus muscle


CORNEAL FORCEP
Uses:
To hold corneal and scleral edge for suturing during cataract, glaucoma operations


CHOPPER
Uses:
Chopper is used to split or chop the nucleus into smaller pieces.


IOL DILATOR
OR
SINSKEY HOOK
Uses:
To dial the IOL for proper positioning in the capsular bag


BP KNIFE HOLDER
Uses:
A BP knife holder is also known as a Bard-Parker knife holder, used to securely hold and guide a surgical blade during precise incisions.