

Slit lamp biomicroscopy

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Today's clever gadgets



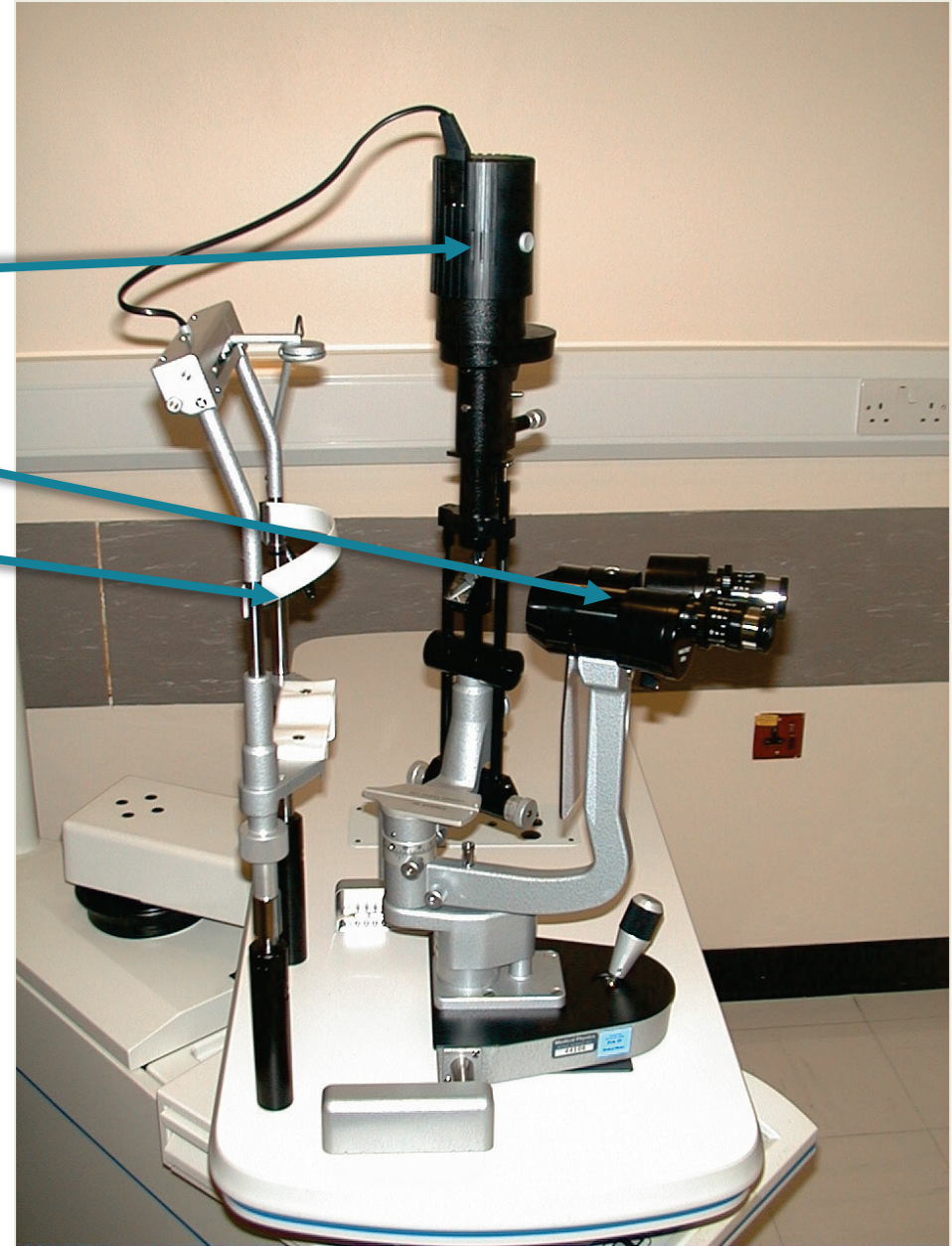
Slit lamp biomicroscope



Gullstrand
1911

Three components

- Light source
- Microscope
- Patient Head-Rest



Slit lamp features

Important Controls

- ON / OFF
- Slit height
- Slit width
- Focus/movement
- Magnification

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Slit beam



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Setting up

- Wash hands
- Disinfect slit lamp
- Adjust eyepieces
- Set interpupillary distance
- Set magnification
- Explain procedure ...
... and position the patient



Adjusting slit lamp height

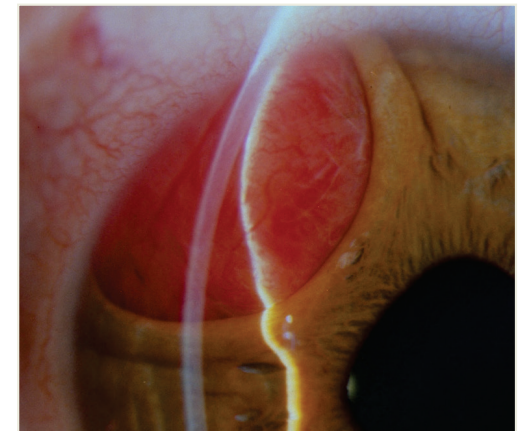
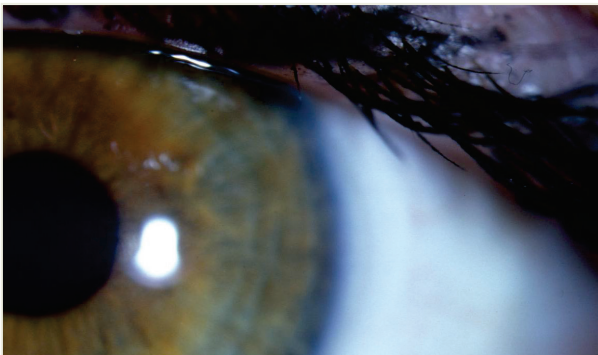
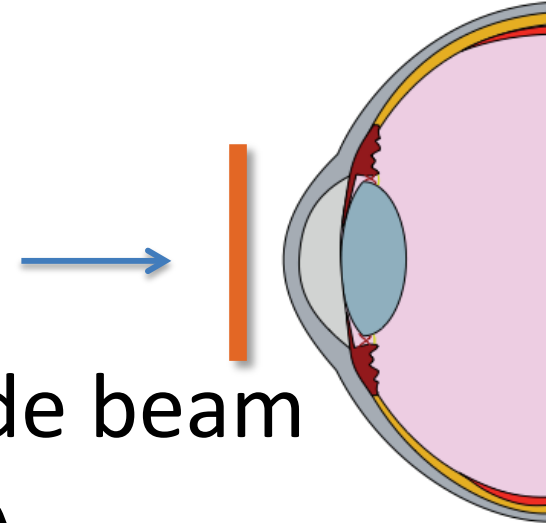


Systematic examination



Systematic examination

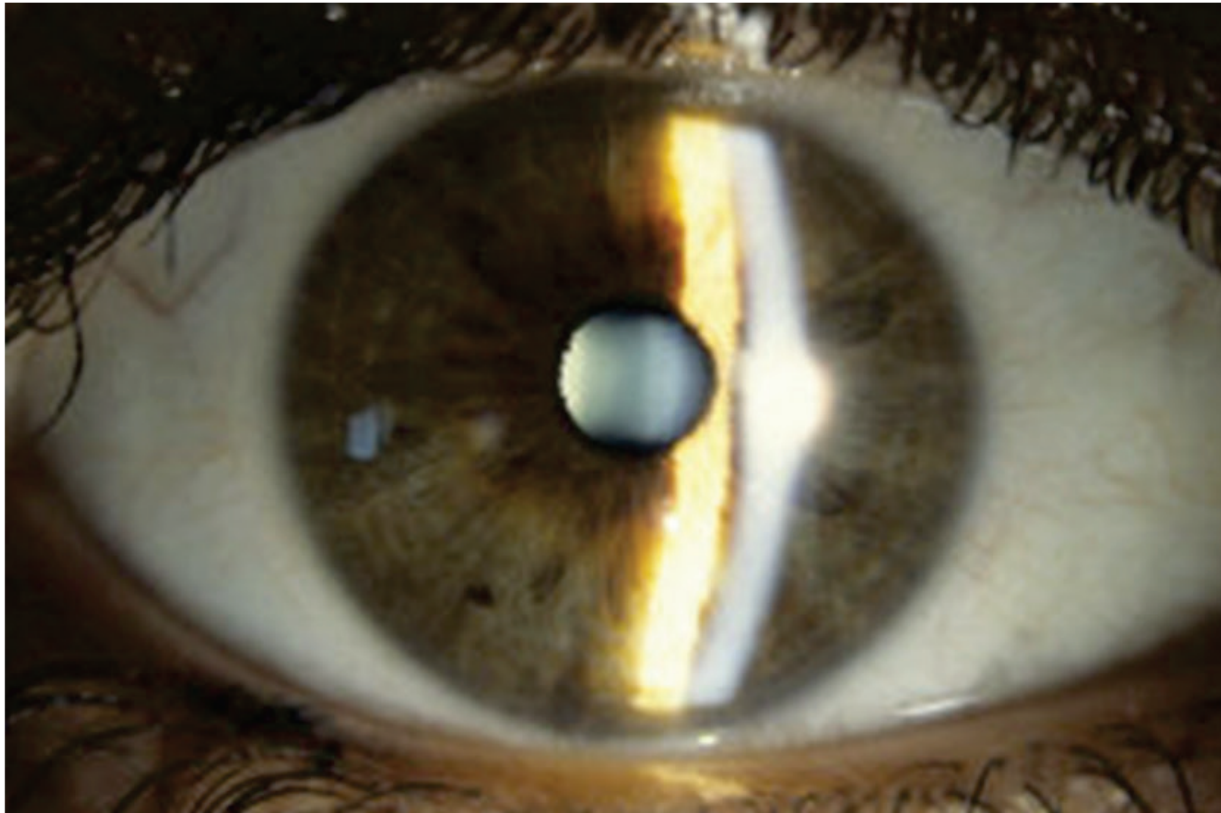
- Start anteriorly and work back
- Begin with low magnification and wide beam
- Examine external eye (eyelids / tears)
- Gross examination of cornea and conjunctiva
- Gross examination of iris and pupil



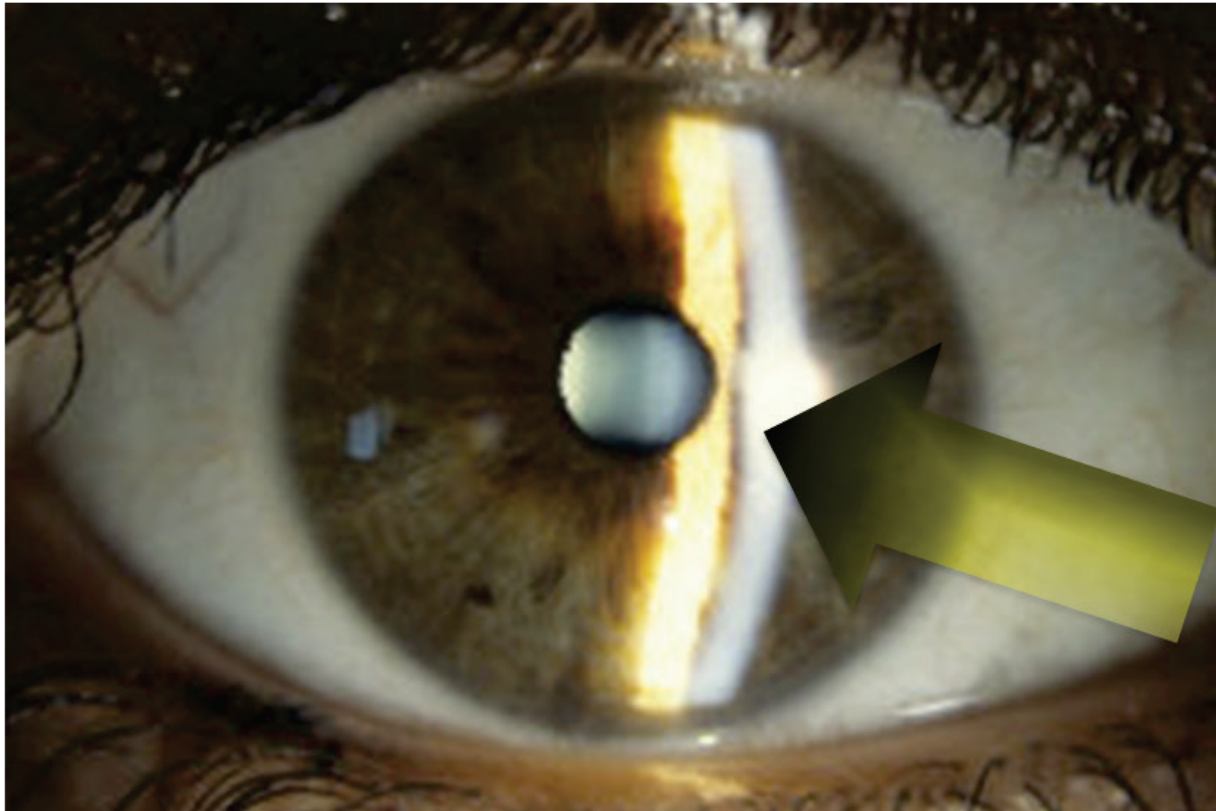
Viewing the cornea

- Turn SL on
- Adjust slit to medium width
- Move the SL to focus light on the eye *while watching from the side*
- Look through the SL and fine-tune focus
- Now you should see something like...

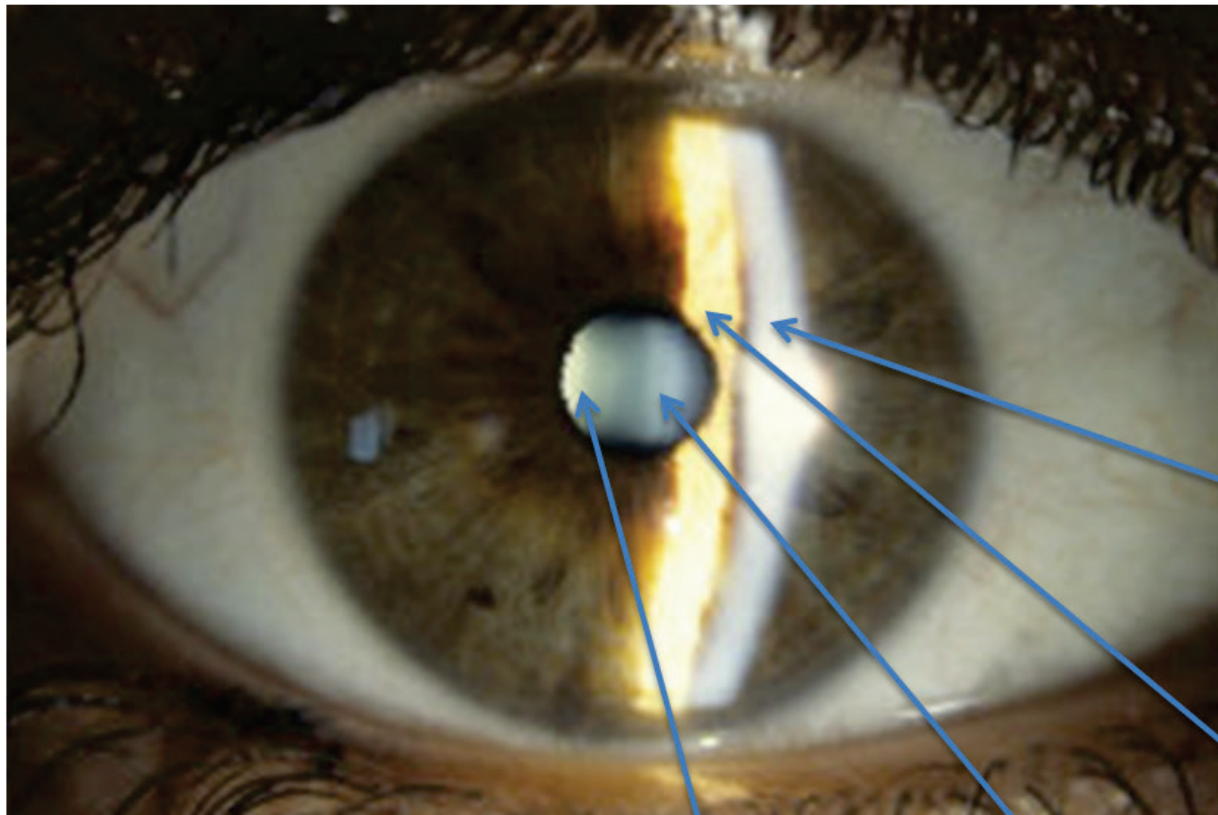
... this!



... this!



... this!

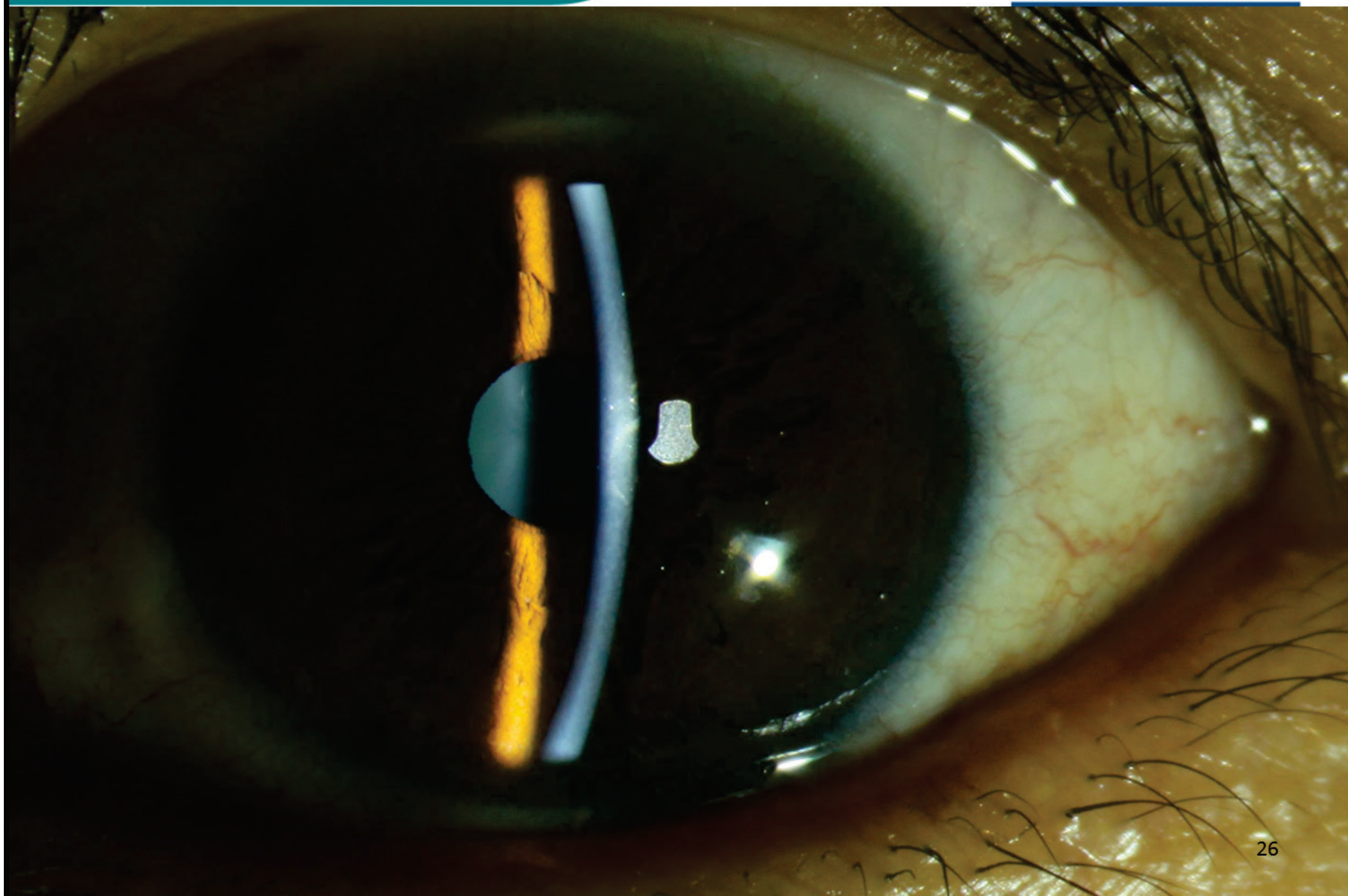


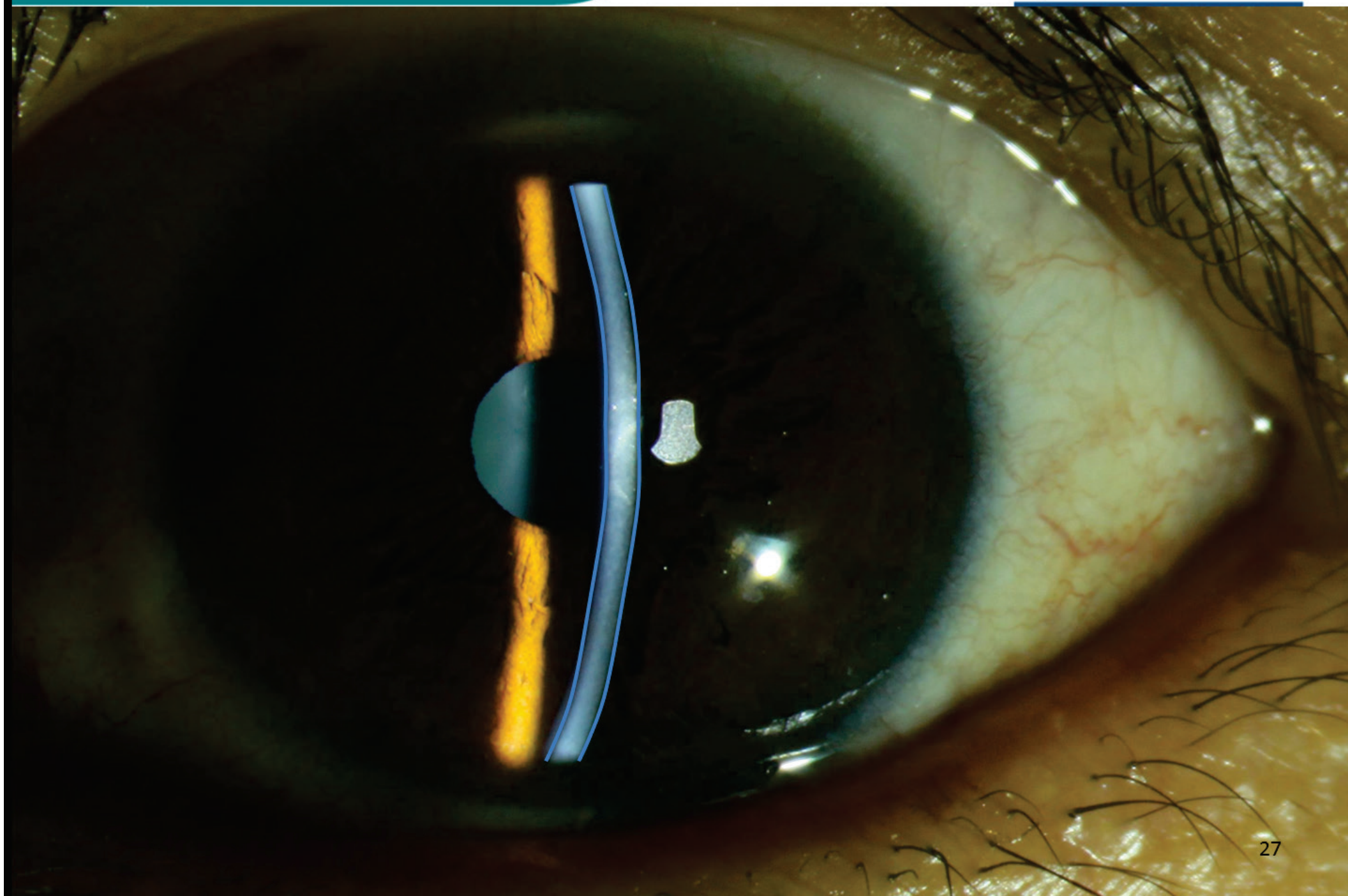
slit beam
on cornea

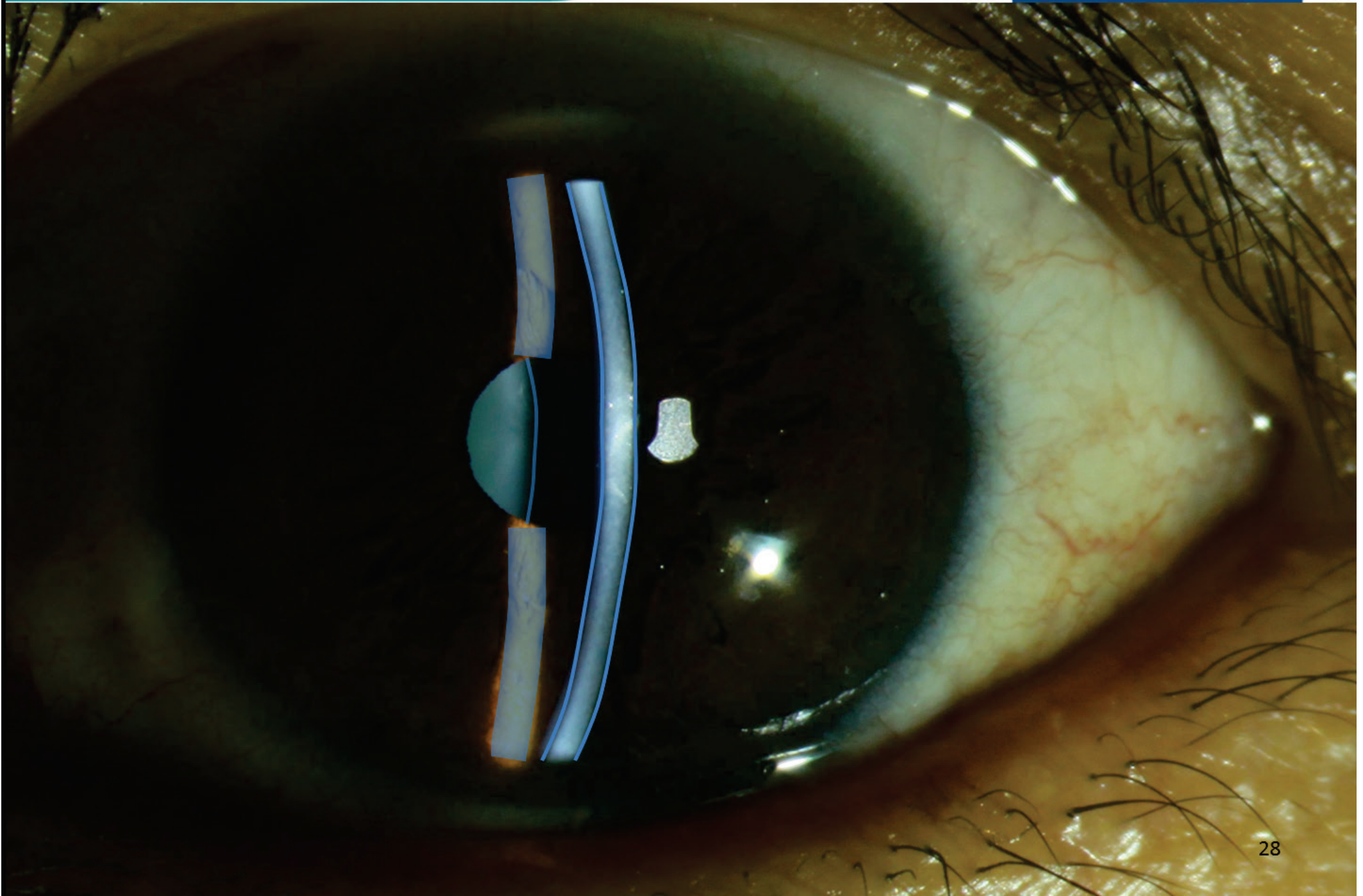
slit beam
on iris

slit beam on
posterior lens

slit beam on
anterior lens

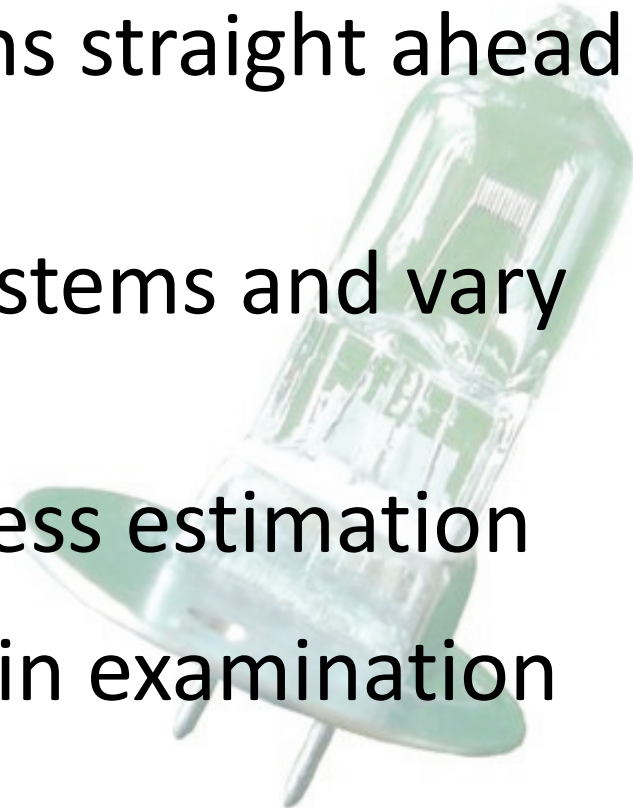
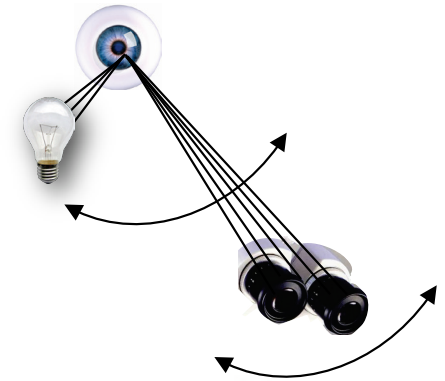




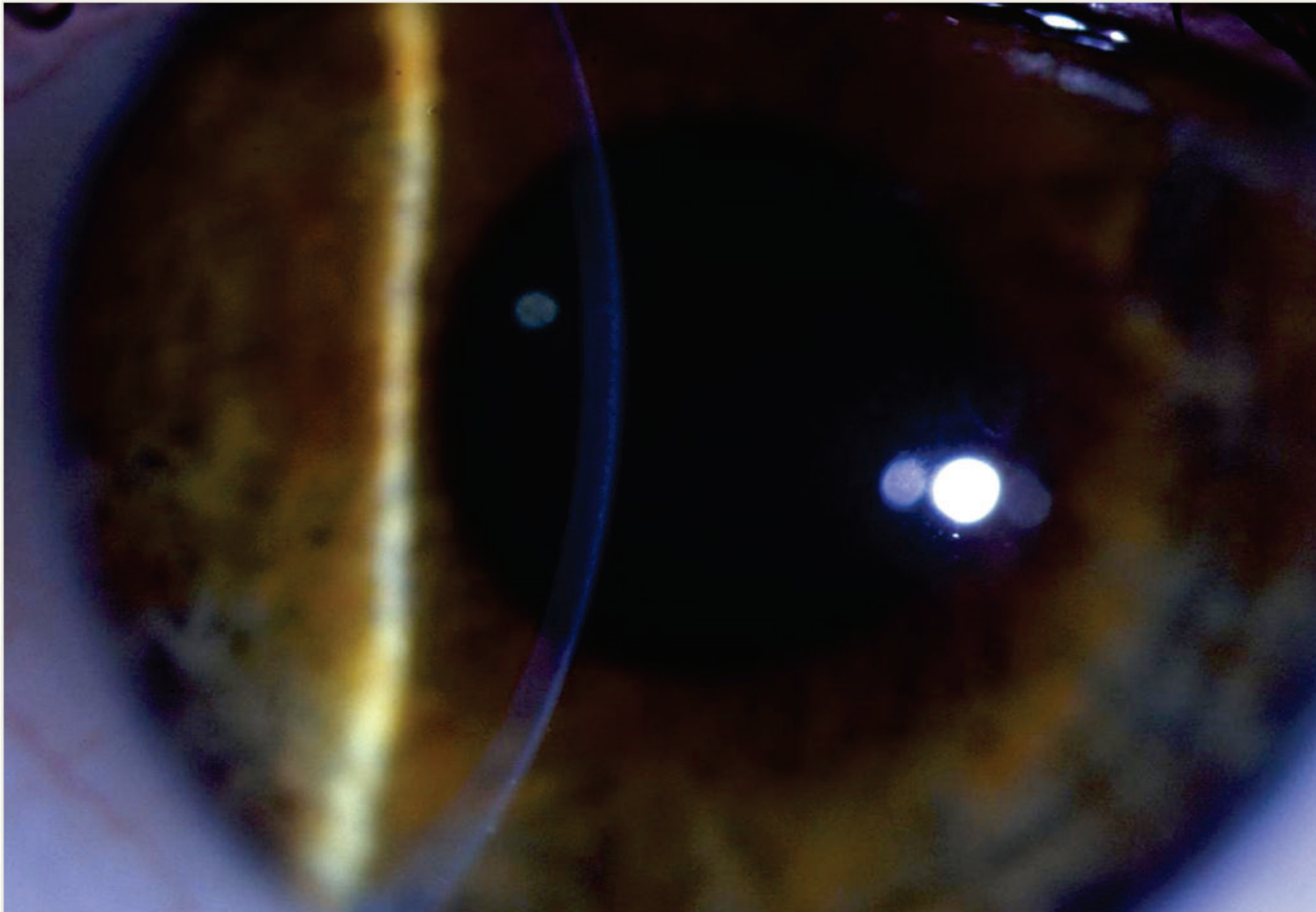


Lighting

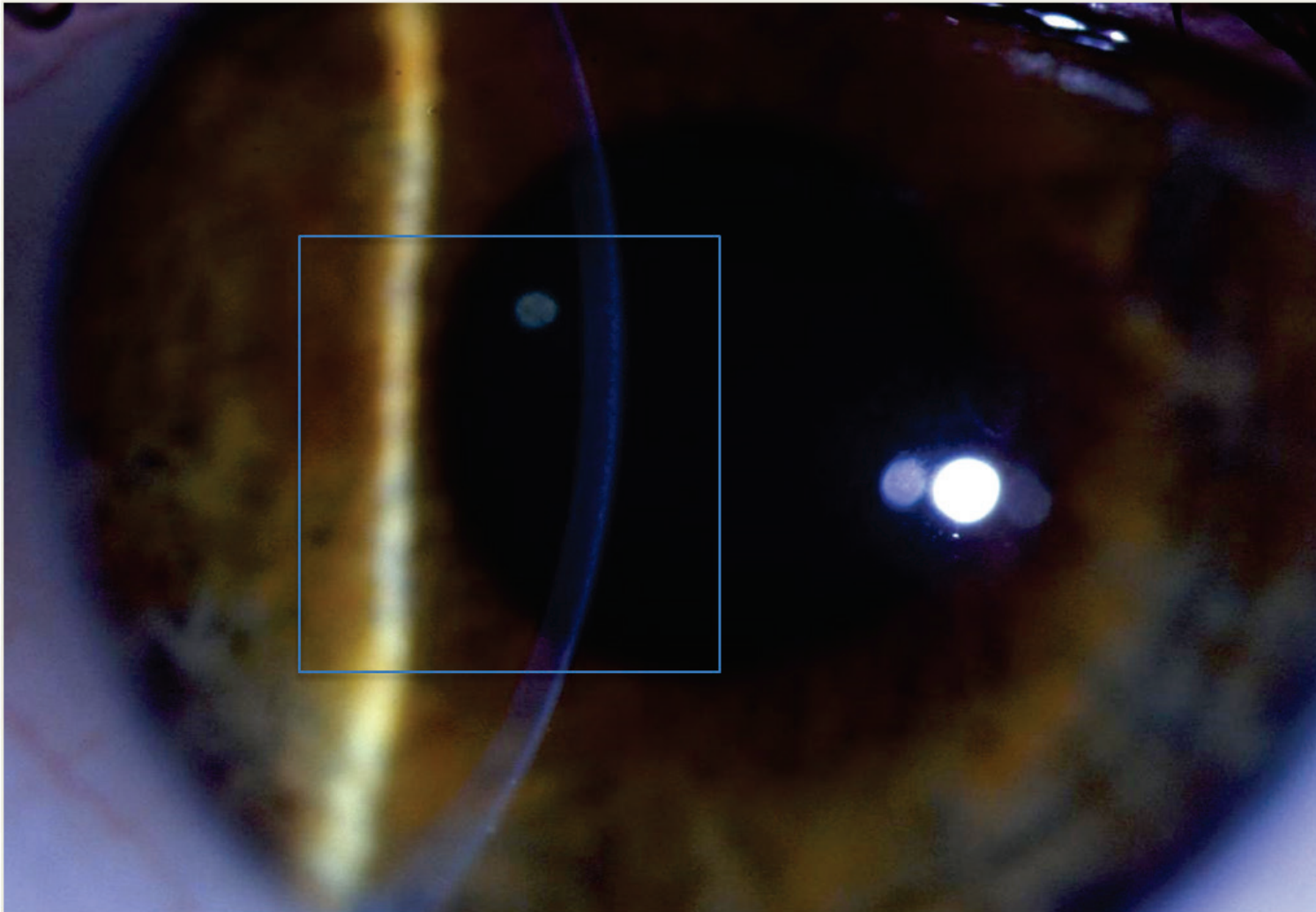
- Broad slit for general examination
- Align light and viewing systems straight ahead for red reflex
- For other viewing separate systems and vary angle for best view
- Narrow slit for corneal thickness estimation
- Blue light (filter) for fluorescein examination



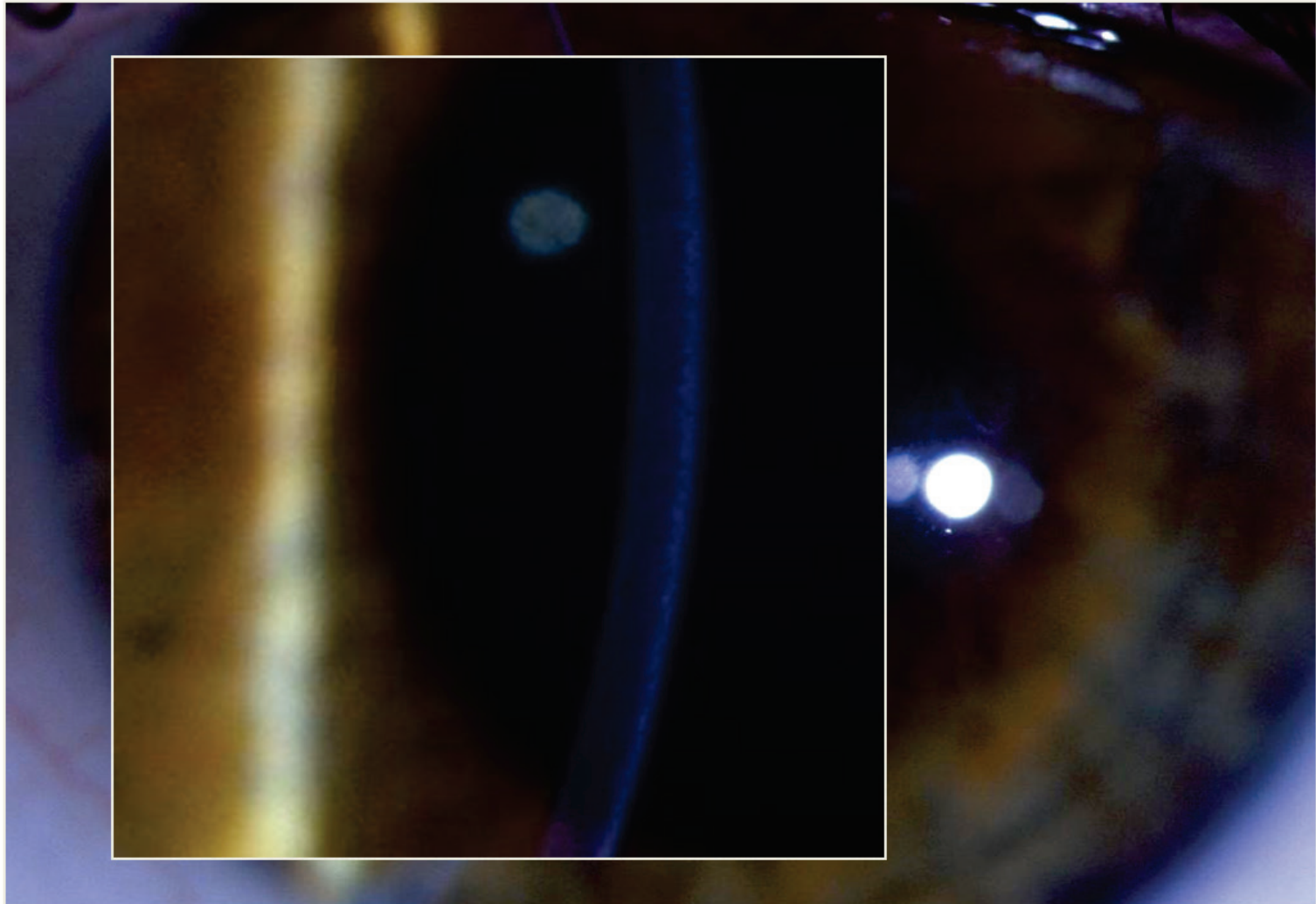
Narrow slit



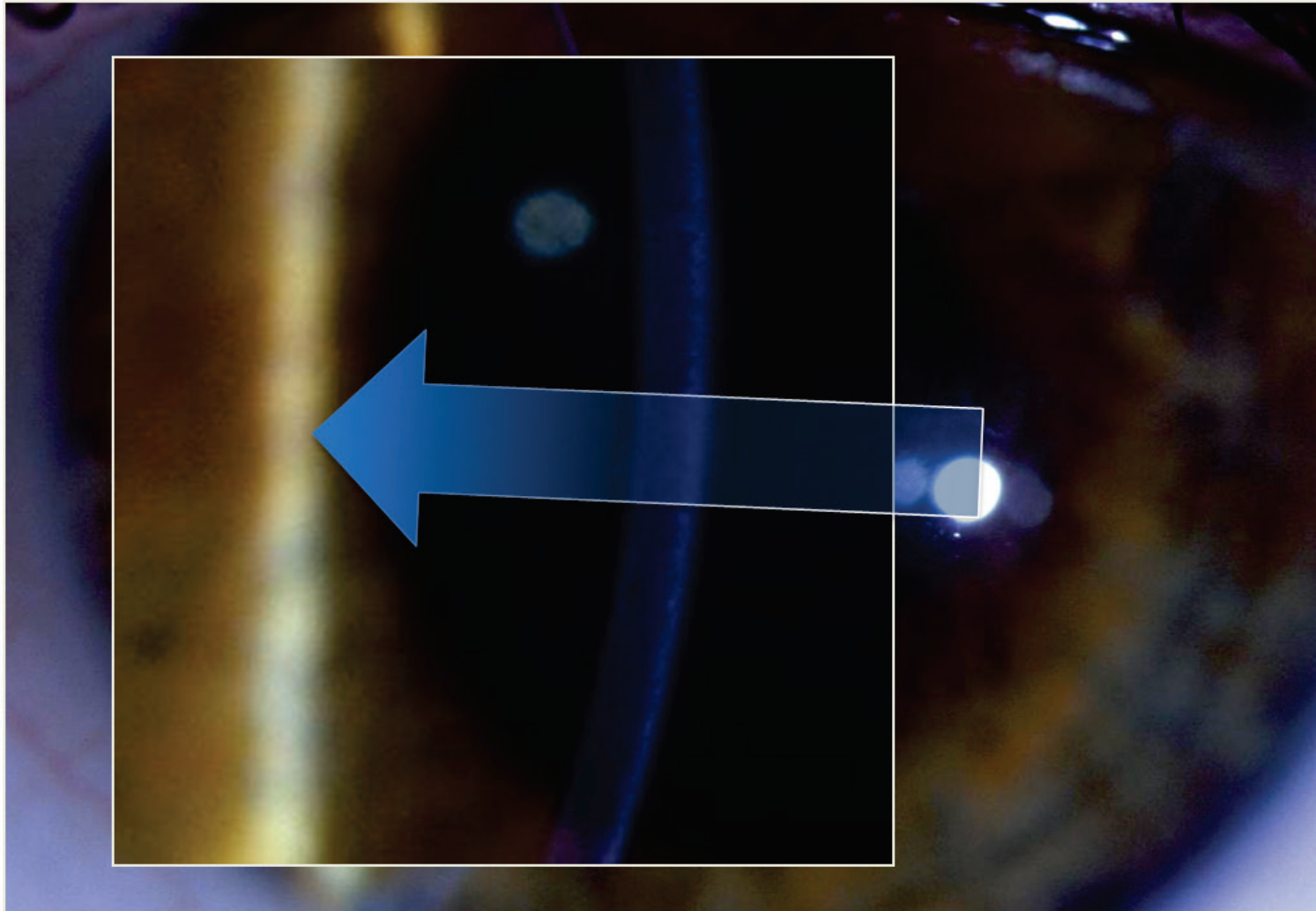
Narrow slit



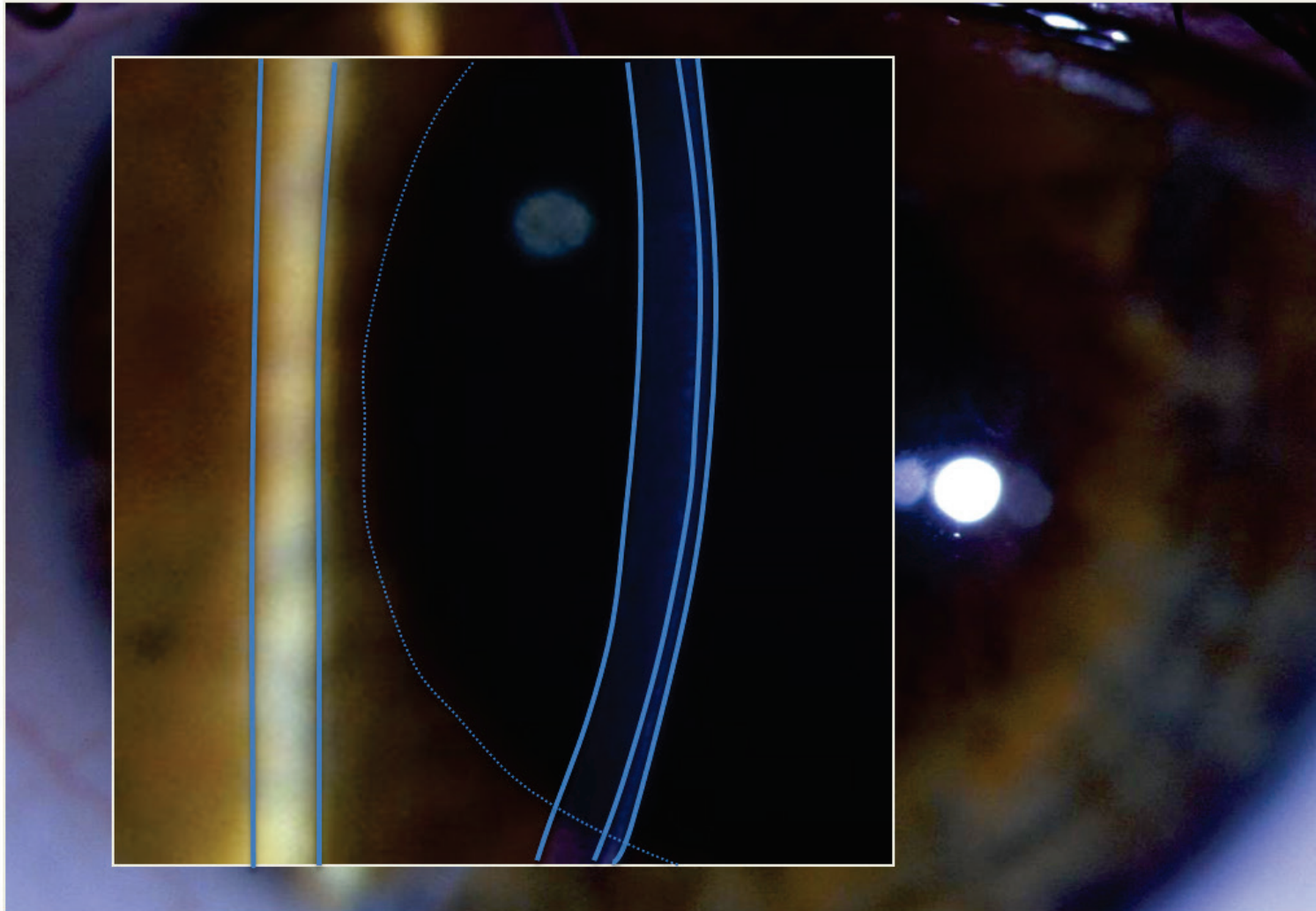
Narrow slit



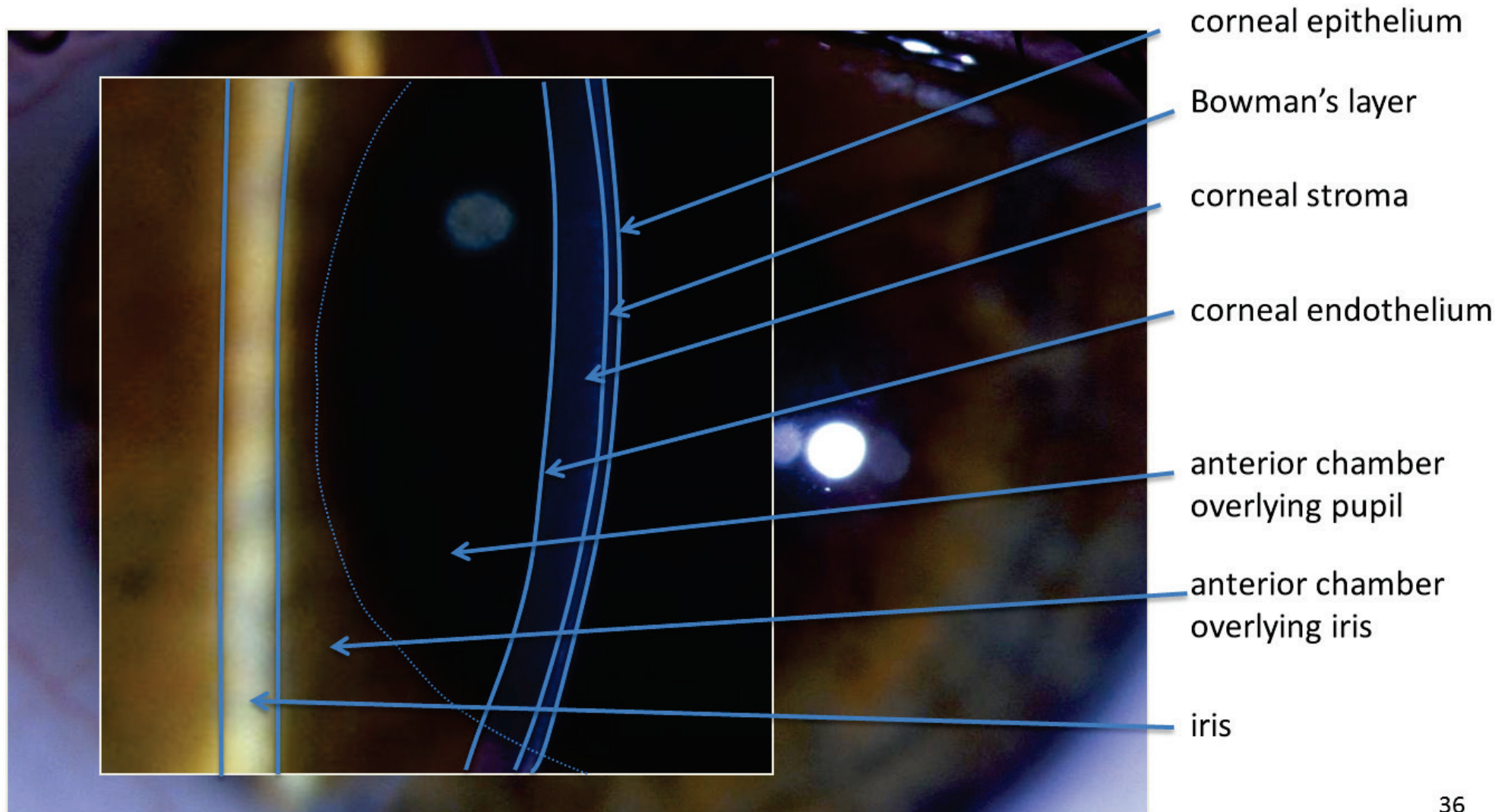
Narrow slit



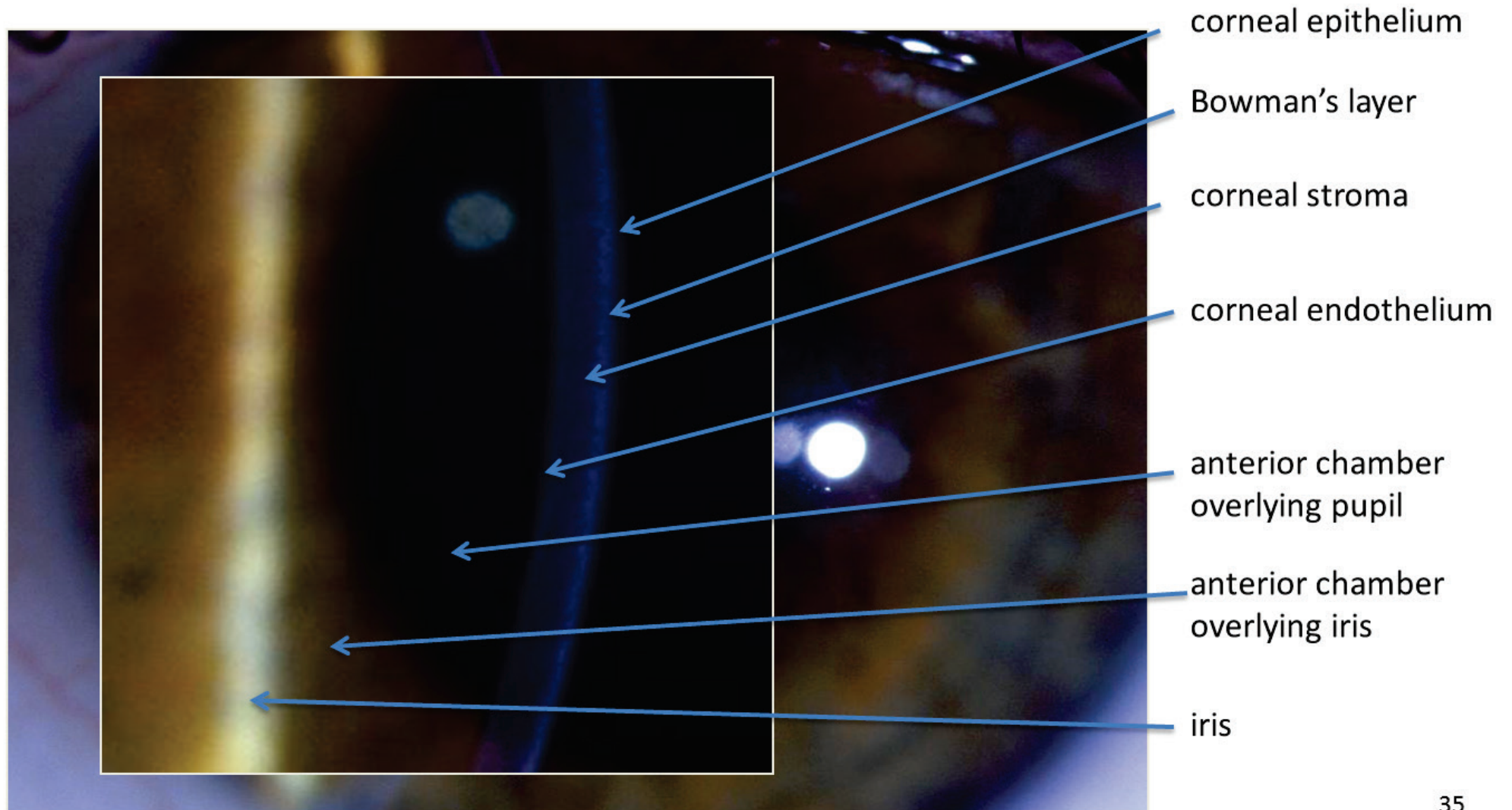
Narrow slit



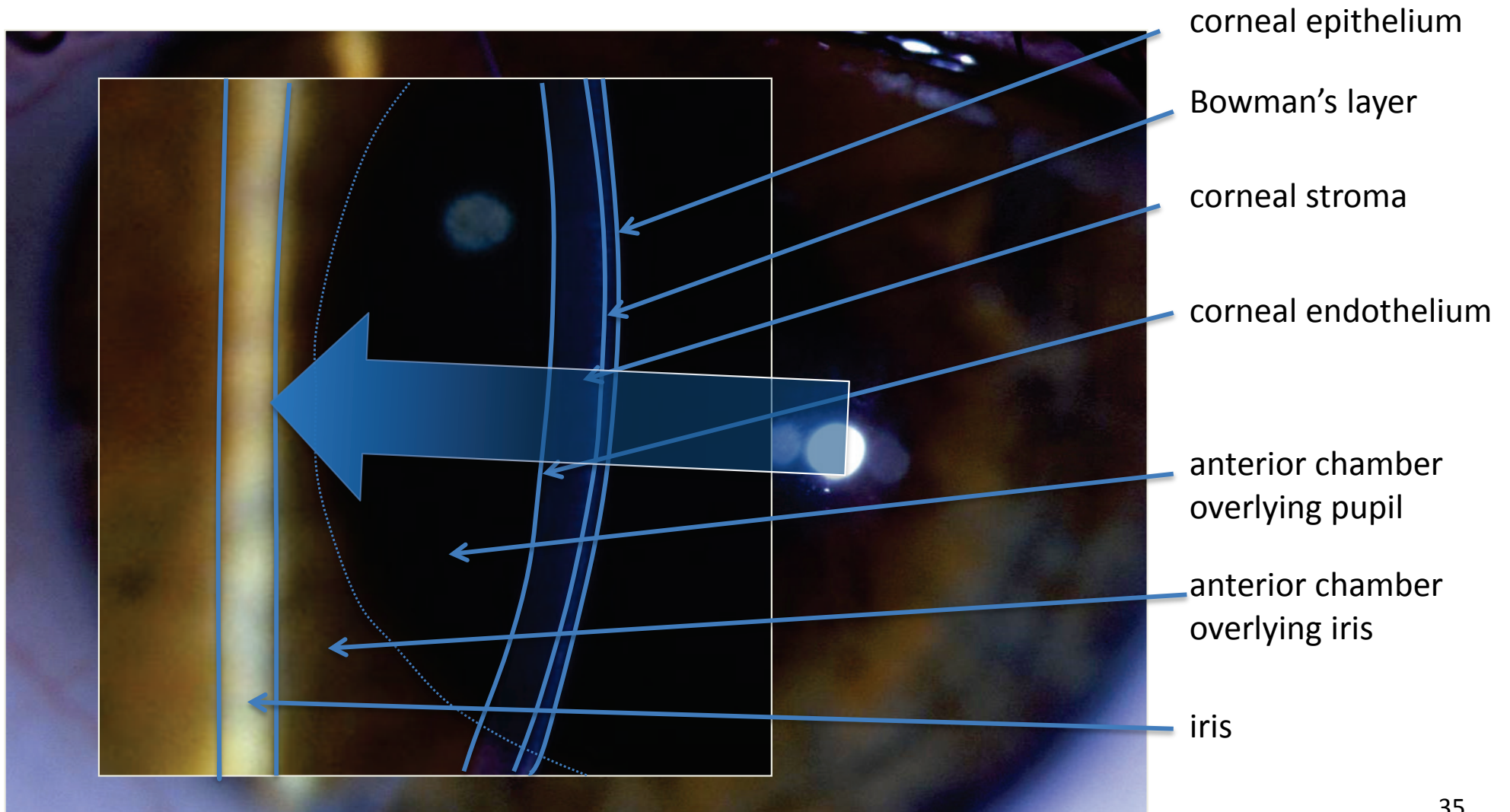
Narrow slit



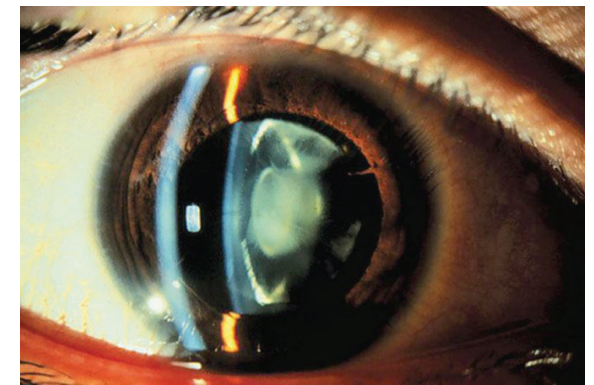
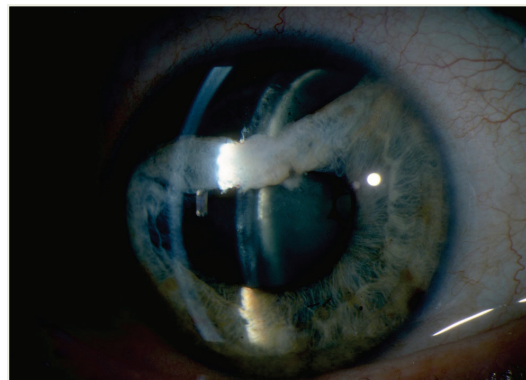
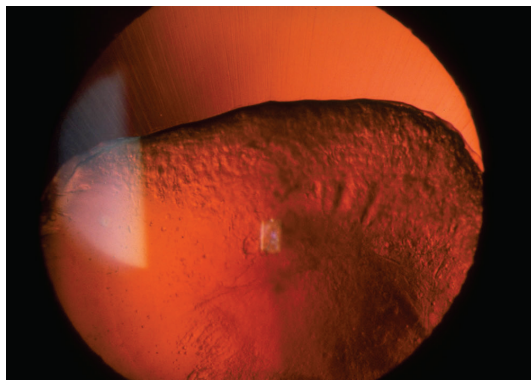
Narrow slit



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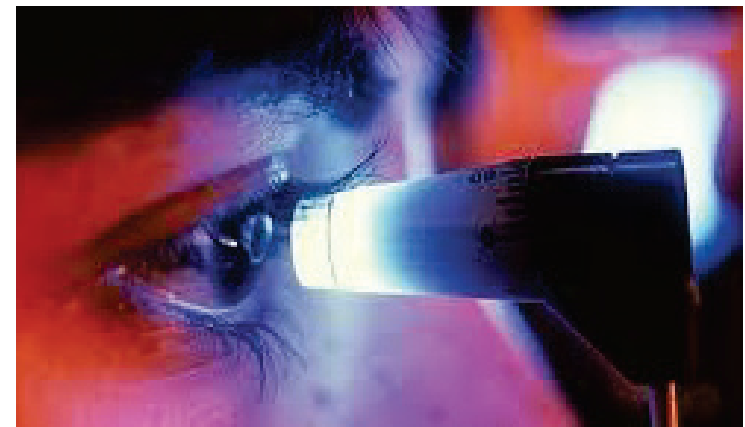
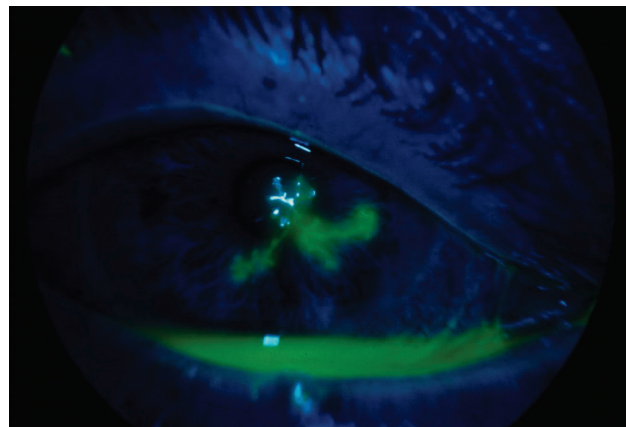
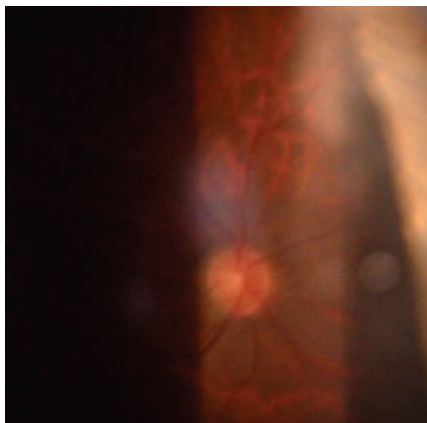
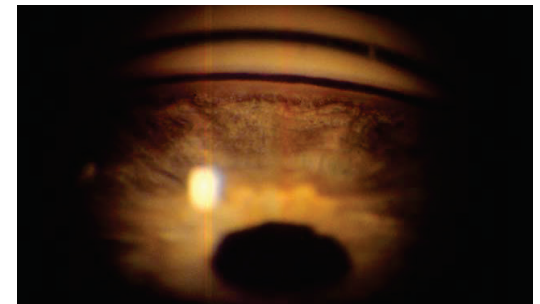
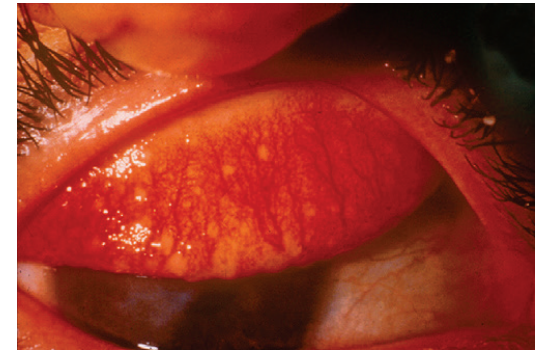


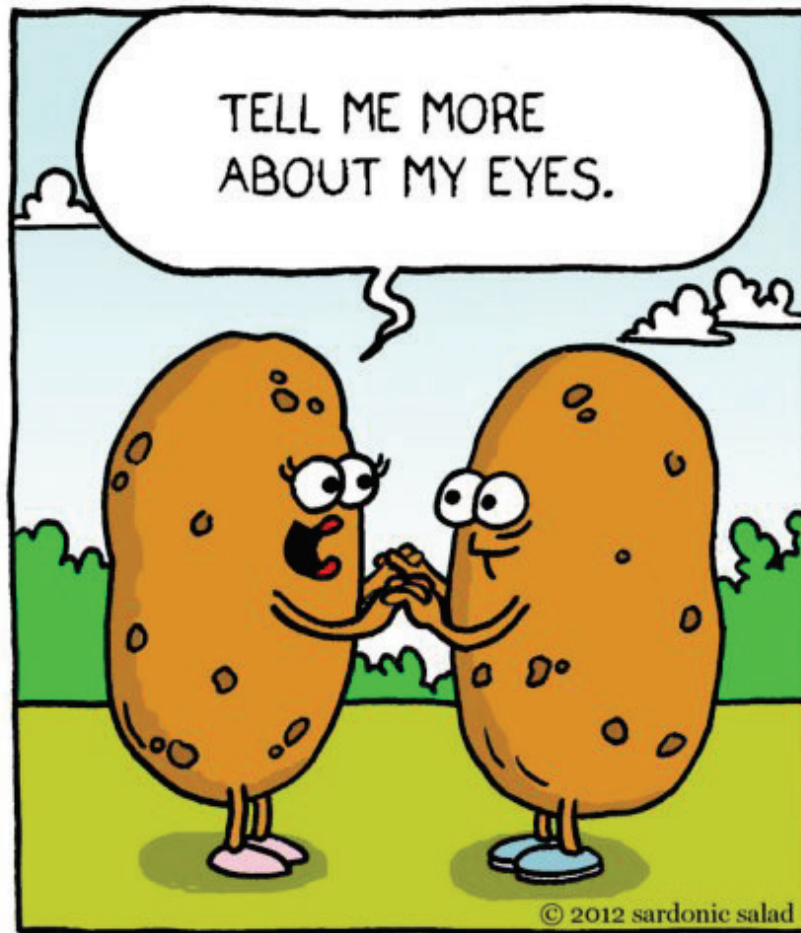
- View red reflex to highlight media opacities
- Narrow slit beam width and increase magnification to more closely observe the cornea and anterior chamber
- Adjust focus posteriorly (move slit lamp towards patient) to examine crystalline lens



If Warranted

- Examination with fluorescein
- Pressure check (Goldmann)
- Evert lids
- Fundal examination (Volk lens)
- Gonioscopy





Thank you

With special thanks to
Dr Nathan Kerr for the
video footage