

3.7 Angle closure glaucoma

Plan

Anatomy & physiology

Definition

Examination/Investigation

Pathogenesis

3 steps: How to diagnose glaucoma

Is this glaucoma

Open angle or close angle

Primary or secondary

Glaucoma/Glaucoma suspect/Normal tension glaucoma/Ocular hypertension

If glaucoma then Classification

open angle glaucoma: Three step plan

Mechanism

Treatment

Classification

angle closure glaucoma: Three step plan

Mechanism

Treatment

Classification

Miscellaneous glaucomas

Close angle glaucoma

Mechanism: Primary angle closure glaucoma

In primary angle closure glaucoma peripheral iris bows forward thus blocking anterior chamber angle

Mechanism: Secondary angle closure glaucoma

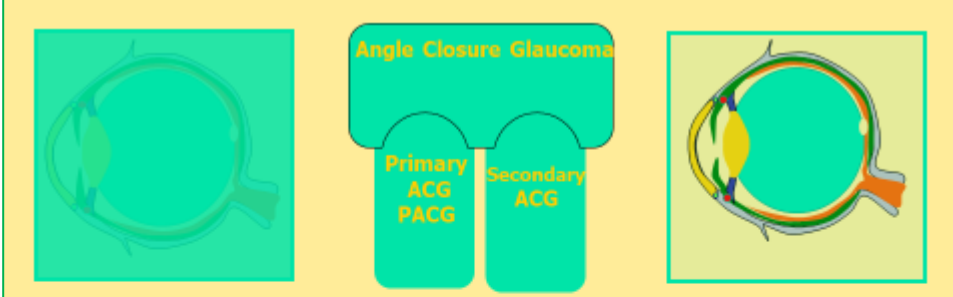
In secondary angle closure glaucoma is either with pupil block or without pupil block. In pupil block lens or posterior synechiae blocks pupil and causes iris to bow forward thus causing secondary angle closure glaucoma. In without pupil block fibrovascular membrane pulls peripheral iris forward and blocks anterior chamber angle thus causing secondary angle closure glaucoma.

Types of angle closure glaucoma: Primary or Secondary

If patient has glaucoma (step1) and angle is closed (step2) then step 3 is to determine whether angle closure is primary angle closure glaucoma or secondary angle closure glaucoma.

If cause of angle closure glaucoma is without any predisposing cause then we call it primary angle closure glaucoma.

If cause of angle closure is pupil block (swollen lens, dislocated lens, posterior synechiae or anterior chamber IOL) or without pupil block by pulling iris forward (fibrovascular membrane or anterior synechiae) then we call it secondary angle closure glaucoma.



	PACG	Secondary ACG
Cause	-Small eye -Forward movement of lens with age	- With pupil block (swollen/dislocated lens, synechiae) - Without pupil block (fibrovascular membrane)
Mechanism	-Pupil block -Angle closure	Less drainage because of closed angle
Medical Treatment	Miotics to relieve pupil block Decrease aqueous production	Treat the cause
Laser treatment	Peripheral iridotomy to relieve pupil block	Laser may work
Surgical treatment	Trabeculectomy	Trabeculectomy

Primary Angle Closure Glaucoma

- **High IOP, Disc cupping, Nerve fiber damage**
- **Close angle & No known cause**
- **Incidence:** 5th decade onwards, Female 4 times more, usually bilateral
- **Risk factors:** Hypermetropia
- **Mechanism:** small eye with lens blocking pupil
- **Treatment:** Medical → Laser iridotomy → Trabeculectomy

Stages of Primary Angle Closure Glaucoma (PACG)

- PACG suspect
 - Predisposed to ACG
 - No symptoms
 - Treatment: YAG laser iridotomy
- Intermittent PACG
 - Symptoms: Intermittent blurry vision with halos
 - Treatment: Prophylactic peripheral iridotomy
- Acute PACG (see next slide)
 - Symptoms: Severe pain, Halos, Red eye, Decrease vision
 - Treatment Of acute attack: Reduce pressure
 - Permanent treatment: Laser iridotomy or trabeculectomy
- Chronic PACG (angle closes gradually and permanently)
 - Symptoms: Loss of vision and intermittent pain
 - Treatment: Medical treatment & trabeculectomy

Acute PACG

- Physiological pupil dilation causes pupil block which results in bowing of iris peripherally and hence angle closure
- Symptoms: acute severe pain, vomiting, redness, loss of vision
- Signs: High IOP, corneal edema, redness, shallow anterior chamber, fixed mid-dilated pupil

Treatment:

- Treatment of acute attack:
 - Systemic acetazolamide or mannitol intravenously
 - Pilocarpine to constrict pupil (to relieve pupil block) & drop
 - Other topical treatment to reduce pressure
 - Peripheral iridotomy
- Treatment for future attacks:
 - Peripheral iridotomy or trabeculectomy
- Treatment of fellow eye:
 - Pilocarpine drop to prevent attack and then Peripheral iridotomy