How Doctors Think

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“Must reading for every physician who cares for patients and every patient who wishes to get the best care.” — Time

WITH A NEW AFTERWORD
Secondary Angle-Closure Glaucoma: Home to the diagnostic dilemmas

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OUTLINE

- **KNOWLEDGE:** Patients with SACG can be of any age and have either deep or shallow AC
- **SKILLS:** Forbes gonioscopy to elicit the S sign can be helpful in Plateau Iris Syndrome
- **ATTITUDE:**
  1. Do not ASSUME the patient with shallow AC and increased IOP has PACG.
  2. Conversely, don’t discount the possibility that patients with deep AC and increased IOP has SACG.
Secondary Angle-Closure Glaucoma

- **Definition**: Physical blockage of the filtration apparatus by means other than relative pupillary block
Mechanisms of Secondary Angle Closure Glaucoma: Posterior pushing

Normal eye

Choroidal hemorrhage

Courtesy of Correa and Augsburger, UBM of the Anterior Ocular Segment 2006
Mechanisms of Secondary Angle Closure Glaucoma: Anterior pulling

Neovascular Glaucoma

*Courtesy of Morrison and Pollack. Glaucoma: Science and Practice 2003*
Secondary Angle-Closure Glaucoma

Hallmark feature: NONE

LPI does not alleviates the glaucoma
Secondary Angle-Closure Glaucoma

- LI may be diagnostic (for example in arriving at a diagnosis of Plateau Iris Syndrome)
- DDx: broad
- Treatments: Vary based on the underlying condition
Secondary Angle-Closure Glaucoma

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**KNOWLEDGE:** Patients with SACG can be of any age and have either deep or shallow AC
**HPI:** 1 month old male noted by pediatrician to have leukocoria OD on post natal day one

**Va:** blinks to light OU

**IOP @ EUA 21 mm Hg OD and 9 mm Hg OS**
FIGURE 2. Anastomotic relationships of key components of fetal vasculature. Compare with Figure 5.
DDx of Posterior pushing mechanism
SACG is broad and effects people of all ages

- **PHPV**
- Uveal effusion syndromes
- Ciliary block glaucoma
- Nanophthalmos
- Choroidal hemorrhage
34 year old female with bilateral blurred vision 2 days after doubling the dose of topiramate to address persistent migraines
Treatment

- Stop topiramate immediately
- Start antiglaucoma medicine
- No role for laser iridotomy
- Some refractory cases may have an inflammatory component and require systemic steroid
The next day…
Anterior pulling mechanisms

- NVG
- ICE syndromes
- Epithelial downgrowth
SKILLS: Forbes gonioscopy to elicit the S sign can be helpful in Plateau Iris Syndrome
Forbes indentation gonioscopy
Uses of indentation gonioscopy:

- Assessment of appositional angle closure versus synechial angle closure
- Assessment of plateau iris syndrome
- Differentiate between a pigmented Sampaolesi’s line from a pigmented TM
- Can help to relieve acute primary angle closure glaucoma.
No TM visible

Indentation reveals an occludable angle

Scleral Spur visible
A 76 YO woman s/p LPI for occludable angle

Sampaolesi’s line

S shaped iris contour with indentation. TM now visible
12 YO HM c/o ocular pain while watching TV in the dark

Black arrow=scleral spur; Asterisk=Ciliary body; White arrow=scleral inlet
12 YO HM c/o ocular pain while watching TV in the dark s/p LPI

Black arrow= scleral spur; Asterisk=Ciliary body; White arrow= scleral inlet

Llinas A et al. Eye 2008
Plateau iris syndrome treatment

- LPI to address the relative pupillary block
- ALPI to address the residual angle closure
- Pilocarpine can work great in this condition
- Never consider these cases “cured”
Conclusions: SACG

- Knowledge: There are no pathognomonic findings in SACG because it can occur by both posterior pushing and anterior pulling mechanisms.
- Skill: Careful history; AC conformation, pupil size and gonioscopy using compression.
- Attitude: Never take ANY case of ACG for granted; always ask “What else could this be?”
An eye with synechial angle closure after indentation gonioscopy.

Nb: the residual PAS
A “POAG” pt who needs LTP.

Sampaolesi’s line

indention

TM now visible