Glaucoma in Uveitis

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- Glaucoma in Uveitis
- UVEITIC Glaucoma
- Hypertensive Uveitis

Prevalence

- The prevalence of glaucoma in inflammatory diseases of the eye ranges from 10% to 20% in non–population-based studies[1]
- The incidence is higher when treatment of uveitis is suboptimal

[1] Herbert HM, Viswanathan A, Jackson H, et al. Risk factors for elevated intraocular pressure in uveitis. J Glaucoma. 2004;13:96–99.

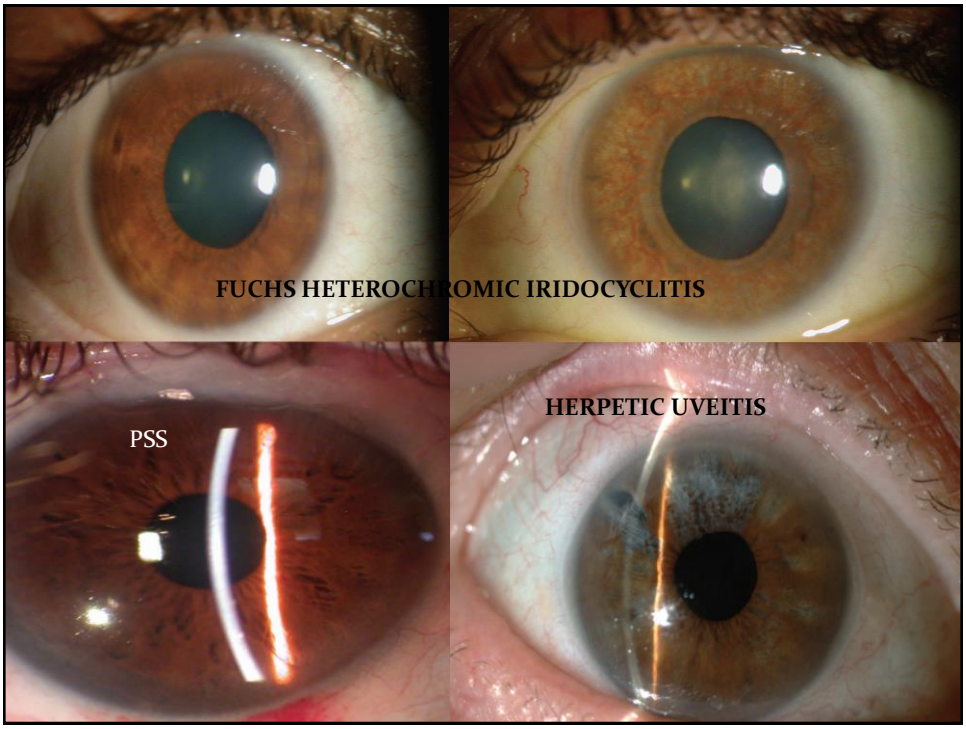
Prevalence

- Anterior uveitis accounts for more cases of uveitic glaucoma than do intermediate or posterior uveitis[2]

[2]. Kok H, Barton K. Uveitic glaucoma. Ophthalmol Clin North Am. 2002;15:375–387, viii.

Hypertensive Uveitis

- ?? High pressure without glaucomatous damage
- We have to differentiate between 2 situations
  - GROUP 1: rare; Uveitis that starts or presents early with HIGH PRESSURE with open-angle mechanisms; this group deserves a special name
  - GROUP 2: more common; Glaucoma that arises along the course of recurrent or chronic uveitis as a result of synechia formation and closed-angle mechanisms



Group 1: Hypertensive Uveitis

- Glaucomatocyclitic crisis ?? CMV
- Fuchs Heterochromic Uveitis?? CMV, Rubella
- Herpetic Uveitis (simplex and zoster)
- Post-op Uveitis
- Phacolytic and phakoanaphylactic uveitis
- Masquerade uveitis; pigmentary, melanomalytic

Group 1

- Unilateral
- Although rare as uveitis, glaucoma is an integral presentation
- Open-angle glaucoma; little tendency to synechia
  - Increased inflammatory mediators, cells and proteins
  - Trabecular meshwork cell dysfunction and trabeculitis
  - Prolonged use of corticosteroids topical, periocular, intravitreal or systemic corticosteroids
- OCT is the main investigative tool
- Treatment is analogous to POAG

Mechanisms

- Group 2: Macroscopic (Closed-angle glaucoma):
  - Early phases hypotony is more common
  - pupillary block mechanisms
  - chronic synechial closure
  - neovascular angle closure

Investigations

- Gonioscopy: crucial; you have to decide on the mechanism of glaucoma
- Investigations that are particularly useful in uveitic glaucoma
  - UBM; in synechial glaucoma
  - OCT: in group 1

INVESTIGATION

- If the cornea cannot be cleared UBM is useful for evaluating the angle
- UBM has an advantage over AS-OCT
  - the ciliary body can be visualized
  - the iridocorneal angle better seen even with substantial corneal opacification
  - Post-surgical: evaluate the position of drainage tubes and evaluate filtering blebs

INVESTIGATION

- Optic disc imaging:
  - Many Group 1 cases have cumulative damage from recurrent attacks
  - Media opacification can hamper image acquisition
  - Thicker RNFL than expected in patients with UG related to breakdown in the blood-retinal barriers
  - As inflammation improves, the retinal thickness decreases and thinning of the RNFL may give impression of progression
  - Thinning of the inferior quadrant suggests that glaucomatous damage is in fact occurring

Management: Medical treatment

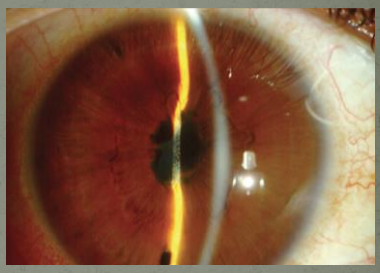
- GROUP 1: open angle mechanisms
  - You need topical steroid but can be low dose or less potent (Rimexolone, loteprednol, fluorinated)
  - Non-steroidal anti-inflammatory drugs can partially block the hypotensive effect of some glaucoma medications such as latanoprost and brimonidine
  - Aqueous suppressants are the usual addition to steroids: Beta blockers as Timolol, topical CAI (dorzolamide, brinzolamide), or a fixed combination
  - You can use PGs but not in herpetic cases, use antivirals

Management: Medical treatment

- GROUP 2: closed-angle mechanism
  - Its all about synechia
  - Early aggressive control of inflammation; strong enough, long enough
  - Frequent strong steroids and cycloplegia
  - Aqueous suppressants
  - Early peripheral iridectomy

Management: Surgical treatment

- REFRACTORY GLAUCOMA
  - Peripheral iridectomy
  - Trabeculectomy
  - Deep sclerectomy
  - MIGS
  - Setons
  - Cyclophotocoagulation



Peripheral Iridectomy

- YAG or combined
- LPIs frequently close
- More than 1
- Follow closely for late closure
- Difficult
- Hyphema
- Brown inflamed irides
- Place for surgical iridectomy +/- synechiolysis

Filtering surgery

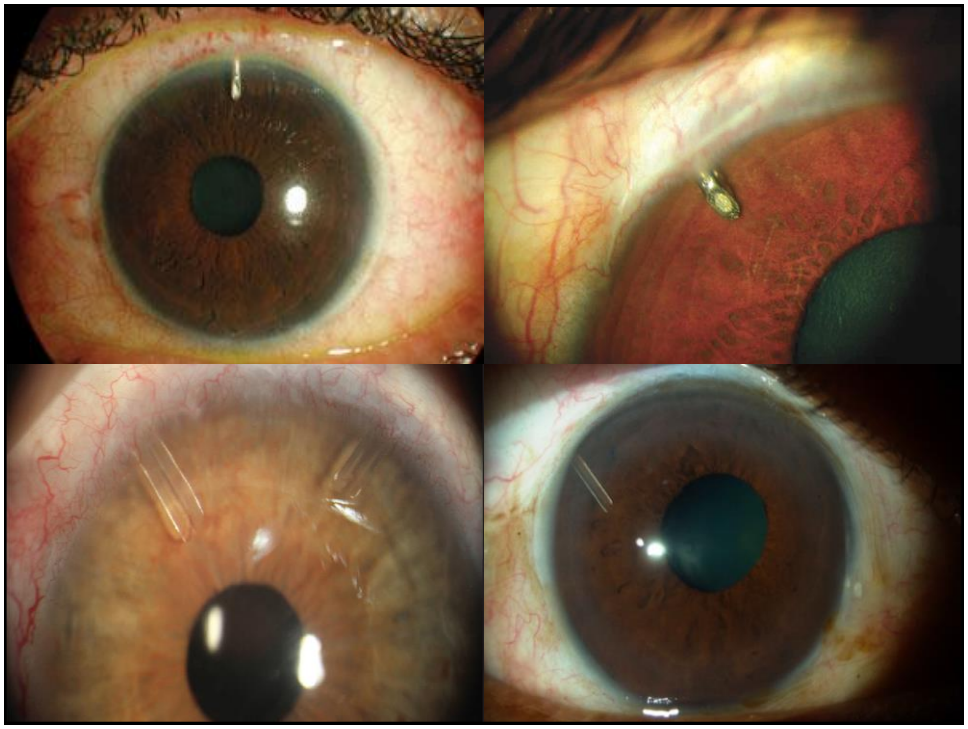
- UG is a refractory glaucom: Traditional filtering surgery has a low success rate in eyes with uveitic glaucoma.
  - Fibroblast proliferation and subconjunctival fibrosis.
  - Normal aqueous seems to inhibit subconjunctival fibroblast proliferation, whereas aqueous and conjunctiva in uveitic eyes contain an increased number of T lymphocytes, which modulate wound healing
- Hypotony is a big problem: UBM has demonstrated atrophy and inflammation of the ciliary body in patients with uveitis

Trabeculectomy

- Accelerated wound-healing process
- Encapsulated blebs
- Trabeculectomy with MMC was less effective in the treatment of uveitic glaucoma compared with POAG
- Hypotony is a big problem

Deep Sclerectomy

- Effective and safe in uveitic glaucoma
- Fewer complications esp. hypotony
- An attractive alternative
  - avoids anterior chamber entry
  - iris manipulation
  - prolonged hypotony
  - The intact trabeculodescemetic window could slow the egress of cytokines and inflammatory mediators



MIGS

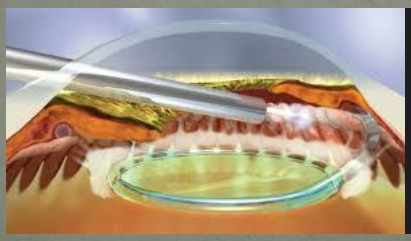
- The Ex-PRESS glaucoma shunt (Alcon Laboratories Inc., Fort Worth, TX)
- Its role in the management of uveitic glaucoma has not been extensively studied except in a small series of patients with uveitic glaucoma
- Seems promising

GDIs

- The traditional indications have been
  - uveitic glaucoma secondary to JIA
  - previous failed trabeculectomy
  - with prior silicone oil injection
  - cases complicated by neovascularization
  - However, a trend to use GDIs as the primary surgical procedure of choice in uveitic glaucoma is growing

Cyclophotocoagulation

- Pro-inflammatory
- **Endoscopic** cyclophotocoagulation (ECP), where ablation of the ciliary body is achieved through endoscopic diode laser application to the ciliary processes under direct visualization



- THANK YOU