Lens-Induced Uveitis

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Overview

- Definition
  - Anterior and intermediate uveitis resulting from a localized inflammatory reaction to crystalline lens proteins
  - Triggering events include
    - Mature or hypermature cataract
    - Retained lens materials after extracapsular cataract surgery
    - Lens capsule rupture following blunt or penetrating trauma
    - Iatrogenic capsular rupture from glaucoma surgery or other intraocular procedures
- Symptoms
  - Blurry vision
  - Photophobia
  - Pain
  - Floaters
- Laterality
  - Usually unilateral
- Course
  - Hours to decades after the causative event
  - Inflammation is persistent and may be severe until lens materials are extracted completely
  - Left untreated, LIU is complicated by severe glaucoma as well as pupillary and cyclitic membrane formation that ultimately results in hypotony, retinal detachment, and phthisis bulbi
- Age of onset
  - 60–70 years

C. S. Foster et al. (eds.), *Uveitis*, https://doi.org/10.1007/978-3-030-52974-1_13

- Gender/race
  - No gender or racial predilection
- Systemic association
  - None

Exam: Ocular

Anterior Segment

- Non-granulomatous or granulomatous inflammation, with abundant cells and flare
- Small KPs (early disease) that coalesce into mutton-fat KPs (late, severe disease)
- Residual lens material in the anterior or posterior chamber (may be visible only on gonioscopy)
- Mature or hypermature cataract
- Ragged or ruptured anterior lens capsule
- Hypopyon or pseudohypopyon (inflammatory cells mixed with lens material)
- Posterior synechiae
- Elevated IOP

Posterior Segment

- Vitritis is always present, though may be obscured by media opacity
- Retinal detachment may occur in severe, untreated cases as the result of cyclitic membrane formation and contraction

Exam: Systemic

- Signs of head or facial trauma

Imaging

- Anterior segment OCT or UBM
  - Useful in detecting retained lens material especially when gonioscopy is obscured by dense AC reaction
- B-scan
  - May reveal retained lens fragments in the posterior segment

Laboratory and Radiographic Testing

- AC or vitreous tap
  - Histologically characterized by zonal inflammation in and around the lens, consisting of lymphocytes, neutrophils, macrophages, epithelioid and giant cells
  - Culture and PCR to exclude infectious masqueraders

Differential Diagnosis

- Sympathetic ophthalmia
  - Bilateral
  - Panuveitis with frequent inflammatory relapses
- Infectious endophthalmitis (exogenous or postoperative)
  - Exogenous
    Commonly *Staphylococcus epidermidis*
    Open globe or intraocular foreign body may be present
    Panuveitis
  - Postoperative
    Acute: *S. epidermidis*, typically occurring 2–6 weeks postoperatively
    Chronic: *Propionibacterium acnes*, typically occurring 3 months postoperatively
    Vitritis is usually mild with a granulomatous anterior uveitis
    Retained lens material not typically found
- Glaucomatocyclitic crisis (Posner-Schlossman syndrome)
  - Recurrent episodes of elevated IOP, mydriasis, corneal edema and low-grade AC reaction
- IOL-associated uveitis
  - Unlikely with biocompatible, acrylic IOLs
- Uveitis-glaucoma-hyphema (UGH) syndrome
- Consider other causes of anterior/intermediate uveitis if removal of lens material does not result in resolution of inflammation

Treatment

- Steroid, cycloplegic, and glaucoma drops for immediate inflammatory and IOP control
- Surgical removal of retained lens material, either via limbal incision or pars plana vitrectomy, offers definitive cure
  - If retained lens material is minimal and resorption is likely, observation and treatment with topical steroids until all lens material is resorbed may be sufficient

Referral/Co-management

- None