9.10.2. Complications of Uveitis (II)

Calcific Band Keratopathy

- etiology
  - chronic uveitis
  - especially children
  - may arise within months of onset of the uveitis
- clinical presentation
  - interpalpebral zone
  - calcium deposition along the epithelial basement membrane and the Bowman layer
  - ± visually significant (it extends into the visual axis)
  - ± foreign body sensation
- treatment
  - chelation with disodium ethylenediaminetetraacetic acid (EDTA)
  - photorefractive keratotomy

Vision Rehabilitation

- worldwide, inflammatory disease is a significant cause of blindness and low vision
- in US, 10% of all blindness is attributed to inadequately treated uveitis
- referral to vision rehabilitation is recommended for patients with
  - visual acuity <20/40 in the better eye
  - reduced contrast sensitivity
  - disabling glare
  - central or peripheral visual field loss
- SmartSight patient handout
  - http://one.aao.org/smart-sight-low-vision
- provide parents of children with uveitis information about rehabilitation
  - www.uveitis.org/patients/education/patient-guides

Hypotony

- pathogenesis
  - acute inflammation
    - aqueous hyposecretion
  - chronic inflammation
    - ciliary body damage and atrophy of the ciliary processes
      - permanent hypotony
- serous choroidal detachment accompanies hypotony
- prolonged choroidal effusions may require surgical drainage
- management
  - if ciliary processes are preserved
    - surgical release of ciliary body traction from a cyclitic membrane
  - If ciliary processes are atrophic
    - vitrectomy with intraocular silicone oil or viscoelastic
    - may be transient
      - ± visual improvement
    - hypotony recurs in nearly 1/2 of eyes
      - requiring reinjection of silicone oil 1-3 times/year

Cataracts

- etiology
  - chronic/recurrent uveitis
- indications for cataract surgery
  - cataract causes functional impairment that interferes with activities of daily living
    - careful preoperative evaluation is necessary to ascertain whether the cataract is actually contributing to visual dysfunction
  - cataract precludes adequate view of the fundus
- preoperative medical management
  - achieve the best control of inflammation possible without flare-ups for ≥ 3 months
  - preoperative pulsing with oral corticosteroids (0.5–1.0 mg/kg/day, usually for 3 days)
    - tapered over weeks to months after surgery
    - and/or intensive topical corticosteroid treatment
  - utilize all appropriate means for control, including immunosuppression if needed
  - infectious uveitides (eg, uveitis caused by Toxoplasma gondii infection and herpetic uveitis)
    - perioperative prophylactic antimicrobial therapy
    - preoperative oral corticosteroids are usually not given
- surgical technique
  - clear corneal approach
    - particularly desirable in cases of scleritis that may be prone to postoperative scleral necrosis
  - posterior synechiae/pupillary miosis
    - mechanical or viscoelastic pupil stretching
    - sphincterotomies
    - use of flexible iris retractors
  - continuous curvilinear capsulorrhexis
    - reduces posterior synechiae formation
    - reduces the risk of posterior capsular tear
    - facilitates placement of IOL haptics in the capsular bag
    - fibrotic anterior capsule may be more difficult to open with a capsulorrhexis
  - meticulous cortical cleanup
  - hydrophobic acrylic posterior chamber IOLs placed in the capsular bag
  - periocular or intravitreal corticosteroids at the end of the procedure
  - pars plana vitrectomy (in conjunction with phacoemulsification with IOL)
    - substantial vision-limiting vitreous debris
    - macular pathology such as epiretinal membranes
  - vitrectomy and aphakia
    - significant structural damage from inflammation
    - surgical prognosis is guarded
      - JIA-associated uveitis
    - zonular insufficiency
      - ± pars plana lensectomy and vitrectomy and avoid placing an IOL
  - relative contraindications for IOL implantation
    - prior development of rubeosis
    - history of extensive membrane formation
    - hypotony
  - controversy regarding IOL placement in children with JIA-associated uveitis
    - choosing the proper IOL power, especially in children under the age of 10 years, is difficult
    - if IOLs are used, in-the-bag implantation of acrylic IOLs and primary posterior capsulorrhexis are preferred in children
      - core anterior vitrectomy through the posterior capsulorrhexis prior to IOL placement
- postoperative medical management
  - postoperative use of nonsteroidal anti-inflammatory drugs (NSAIDs) has not been studied in eyes with uveitis
    - corneal toxicity from topical NSAIDs used concurrently with topical corticosteroids is a concern
  - immunomodulation is continued
  - liberal use of topical corticosteroids (slowly tapered)
- phacoemulsification with posterior chamber (in-the-bag) IOL implantation effectively improves vision and is well tolerated
  - 75% of patients will obtain a visual acuity >20/40
  - excellent surgical and visual results have been reported for Fuchs heterochromic uveitis
  - other types of uveitis can be more problematic
    - greater risk for postoperative complications than nonuveitic eyes
- complications
  - postoperative CME
    - incidence may be reduced through
      - use of perioperative corticosteroids
      - delay of surgery until the uveitis has been controlled for at least 3 months
  - recurrence or exacerbation of uveitis
  - posterior capsule opacification
    - higher incidence in uveitic than nonuveitic eyes
    - earlier use of Nd:YAG laser capsulotomy
  - membrane formation on the surface of the IOL
    - strict control of inflammation remains paramount to reducing the chance of these deposits
      - long-term administration of topical corticosteroids may be necessary
    - IOL explantation in 5%–10% of patients
      - inflammatory cocooning of the IOL–lens capsule complex
        - uncontrolled inflammation

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