11.4.7. Pathology (VII): Lens-induced Glaucoma & Uveitis

Phacoantigenic Uveitis (Phacoanaphylactic Uveitis)

- pathogenesis
  - in the normal eye, minute amounts of lens proteins leak out through the lens capsule
    - immunologic tolerance
  - release of lens proteins into the anterior chamber through ruptured lens capsule
    - trauma
    - following cataract surgery
    - days to weeks after the injury or surgery
- clinical presentation
  - pain
  - injection
  - chemosis
  - anterior chamber inflammation with cells & flare
  - keratic precipitates
  - posterior synechiae
    - unlike phacolytic uveitis
  - glaucoma
    - blockage of the trabecular meshwork
    - formation of synechiae
  - cyclitic membrane
  - hypotony
    - phthisis bulbi
  - inflammatory reaction in the fellow eye
    - rare
- pathology
  - zonal granulomatous inflammation surrounding a breach of the lens capsule
- treatment
  - lens extraction

Glaukomflecken

- after an episode of markedly elevated IOP
- gray-white epithelial/anterior cortical lens opacities
  - necrotic lens epithelial cells
  - degenerated subepithelial cortex

Phacolytic Glaucoma

- pathogenesis
  - mature/hypermature cataract
  - denatured, liquefied high-molecular-mass lens proteins leak through an intact but permeable lens capsule
    - immune response is not elicited!
  - macrophages ingest these lens proteins
  - trabecular meshwork becomes clogged with lens proteins and engorged macrophages
- clinical presentation
  - abrupt onset of pain and redness
  - significant flare reaction in anterior chamber
  - white flocculent material in
    - anterior chamber
    - adherent to lens capsule
    - trabecular meshwork
  - anterior chamber angle is open
  - +- corneal edema
- treatment
  - surgical removal of the lens

Lens Particle Glaucoma

- penetrating lens injury/surgical trauma
  - lens cortex particles enter anterior chamber
    - obstruct trabecular meshwork
- clinical presentation
  - glaucoma is delayed by days or weeks after the surgical event
  - angle is open
    - cortical material along the trabecular meshwork
- treatment
  - antiglaucoma medications
  - topical corticosteroids
  - surgical removal of the retained lens material
    - if IOP and inflammation do not respond quickly to medical treatment

Phacomorphic Glaucoma

- intumescent cataractous lens
- secondary angle-closure glaucoma
  - 1 pupillary block
  - 2 direct shallowing of the anterior chamber
- clinical presentation
  - red, painful eye
  - closed anterior chamber angle
  - +- corneal edema
- treatment
  - antiglaucoma medications
  - laser iridotomy
  - cataract extraction

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