YAG Capsulotomy

- nd:YAG = Neodymium: Yttrium aluminum garnet laser
- NOT pigment dependent
- Tissue interaction: Photodisruption
  - High light energy levels cause the tissues to be reduced to plasma, disintegrating the tissue (Tissue warmed to > 15,000 °C)
  - A large amount of energy is delivered into very small focal spots in a very brief duration of time (4 nsec)
  - No thermal reaction/No coagulation when blood vessels are hit
- Hydrodynamic waves and acoustic pulses move back toward physician
  - Hence the need for offset and focus just deep to capsule

Indications:
- Patient has subjective complaint
  - Activities have become limited
- Must wait at least 90 days after cataract extraction
- VA 20/30 or worse with or without glare

Contraindications:
- Corneal opacities or irregularities
- Intraocular inflammation
- Macular problems
- Patient is unable to hold steady or fixate

Risks/Complications:
1. IOP spike/elevation (most often transient)
2. Inflammation
3. IOL damage/pitting - Silicone most common
4. Floaters
5. CME
6. RD
7. Permanent vision loss
   - Total laser energy is an important factor leading to complications
   - Normally 40 shots or less, caution with more - watch total energy

Incidence of PCO:
- Most common complication of post ECCE
- 10-80% of eyes following cataract surgery
- Can form anywhere from a few days to years post surgery
- Younger patients higher risk of PCO
- IOL: Silicone > acrylic

Pre-Op Exam:
- Visual acuity, glare testing, PAM/Heine lambda
  - Vision 20/30 or worse
- Slit Lamp Exam
- IOP’s
- Dilate – will be able to visualize the PCO much better
- Posterior segment exam
  - Macula - ERM and CME
  - Periphery - PRD and Lattice degeneration
- Educate Patient
- Informed Consent Signed
- Pre-op Drops:
  - dilating drops (better visualization)
  - 1 drop Alphagan or Iopidine 10-20 minutes prior to

Laser Settings:
- Energy: 1.3 – 2.5 mJ
- Spot Size: fixed
- Duration: fixed
- Pulses: 1
- Offset: 250 microns

Procedure:
- Preop:
  - Proparacaine
  - Apply laser lens with celluvisc/goniosol
  - Focus HeNe beams on the PCO
  - Perform the procedure
    - No pain for patients
    - Patients may feel popping/snap/clap in ears
  - Usually done in a cruciate pattern
  - Other patterns: Horseshoe, Circular

Post-Op Care:
- Remove laser lens
- Rinse Eye/Clean eye
- 1 drop of Alphagan or lopidine post-laser
- IOP measurement 15-30 minutes post-laser
- Post-op drops:
  - Pred Forte QID to surgical eye X 1 week
  - Pt ed – S/S of RD
  - RTC 1 week for f/u

At 1 week Post-op:
- VA’s
- Anterior segment exam
  - Check for cell/flare
- Check IOP
- Dilate
  - Check for holes/tears/RD’s
- D/C Pred Forte
- Release back to referring doc