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 ℃)
  • 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

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

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

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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:
•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 Iopidine 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