Hands-on Workshop - Laser Vitreolysis, Capsulotomy, & Trabeculoplasty

2 hours

Nathan Lighthizer, OD - NSU Oklahoma College of Optometry (NSUOCO)
Chris Wroten, OD - Bond-Wroten Eye Clinic

Description:
The use of laser energy to treat various anterior segment conditions, including posterior capsular opacification (PCO), angle closure glaucoma, and open angle glaucoma, has been used by optometric physicians in certain states for over a decade now. This interactive lab will review and update these ophthalmic laser procedures. Attendees will get to perform YAG capsulotomies, laser peripheral iridotomies, and SLT's with actual lasers on model eyes.

Learning Objectives:

- Understand the indications, contraindications, treatment protocols, complications, and follow-up with YAG laser capsulotomies
- Understand indications, contraindications, treatment protocols, complications, and follow-up with peripheral iridotomies (PI)
- Understand the indications, contraindications, treatment protocols, complications, and follow-up with argon laser peripheral iridoplasties (ALPI)
- Understand the indications, contraindications, treatment protocols, complications, and follow-up with YAG laser vitreolysis
- Understand the indications, contraindications, treatment protocols, complications, and follow-up with selective laser trabeculoplasty (SLT)

Course Outline:

1. Overview and YAG Laser Capsulotomy
    a. Why do we use lasers?**)**
        i. Decreased Vision
        ii. Narrow angles/Angle Closure
        iii. POAG progression on max meds
        iv. Compliance issues
        v. Cost issues
        vi. Convenience issues
        vii. Doctor preference
    b. PCO
        i. Incidence
        ii. Prevention
        iii. Laser settings
        iv. Laser tissue interaction
    c. YAG laser
        i. Characteristics of the YAG laser

d. Pre-op exam components
e. Contraindications & Risks/Complications
    i. IOP spike
    ii. Inflammation
    iii. Retinal detachment
    iv. Permanent vision loss
f. YAG Cap procedure
    i. Technique
    ii. Patient tips
    iii. Laser lens selection
    iv. Patient videos
g. YAG Cap post-op care
    i. Pred Forte QID X 1 week
    ii. Patient education
h. YAG cap reimbursement and global period

2. Peripheral Iridotomy (PI) **(5 minutes)**
    a. Anatomically narrow angles/Angle closure
        i. Common causes
            1. Pupillary block
            2. Plateua iris
            3. Phacomorphic glaucoma
            4. Malignant glaucoma
    b. PI indications
        i. Primary angle closure
        ii. Plateau iris syndrome/configuration
        iii. Secondary pupillary block
        iv. Pigmentary glaucoma
        v. Prophylaxis – most common indication
    c. PI alternatives
        i. Surgical Iridectomy
    d. Pre-op exam components
        i. Gonio
    e. Contraindications & Risks/Complications
        i. IOP spike
        ii. Inflammation
        iii. Non-perforation
        iv. Permanent vision loss
    f. PI procedure
        i. Pre-op drops
            1. Alphagan
            2. Pilocarpine
        ii. Laser options (Argon vs. YAG laser)
        iii. Selection of PI location
            1. Superior under upper lid

2. Located in a crypt
3. 11:00 or 1:00

iv. Laser lens selection
v. Goals
1. Patent PI 0.5-1.0 mm in size
2. Deepening of the AC
3. IOP control

g. PI post-op care
i. Pred Forte QID X 1 week
ii. Patient education
h. Reimbursement/Global period

3. Selective Laser Trabeculoplasty (SLT)
a. SLT mechanism of action
i. Thermalysis (Thermal Relaxation Time)
b. Pre-op exam components
c. Contraindications & Risks/Complications
i. Narrow angles, Neovascular glaucoma, Inflammatory glaucoma
ii. IOP spike
iii. Inflammation
d. SLT procedure
i. Pre-op drops
ii. Laser settings
iii. Lens selection
iv. Procedure tips
v. Comparison to ALT
e. SLT post-op care
i. Post-op drops (NSAID only if needed)
f. Outcomes/Effectiveness of ALT & SLT
g. Reimbursement/Global period for ALT & SLT

4. YAG Laser Vitreolysis
a. Vitreal floaters
i. Incidence
ii. Prevention
iii. Laser settings
iv. Laser tissue interaction
b. YAG laser
i. Characteristics of the YAG laser
c. Pre-op exam components
i. Dilation
ii. Identification of where the floater is located
1. Anterior vitreous
2. Mid-vitreous
3. Posterior vitreous
iii. Identifying the type of floater

1. Weiss ring - ideal
2. Amorphous cloud - ideal
3. Vitreal syneresis – not ideal

d. Contraindications & Risks/Complications
   i. IOP spike
   ii. Inflammation
   iii. Retinal detachment
   iv. Retinal damage
   v. Cataract formation if the patient is phakic
   vi. Lens pit formation if the patient is pseudophakic
   vii. Permanent vision loss
e. YAG Vitreolysis procedure
   i. Technique
      1. 4-6 mJ/shot
      2. Typically 200-500 shots or more depending on the floater
      3. Offset – can be anterior or posterior offset depending on where the floater is located. Anterior floaters have a more posterior offset, and posterior floaters may have less of a posterior offset or no offset or even an anterior offset
   ii. Patient tips
      1. Patient may have to move their eye during the procedure to help to locate the floater
   iii. Laser lens selection
      1. Singh mid-vitreous lens
   iv. Patient videos
f. YAG Vitreolysis post-op care
   i. In-office brimonidine
   ii. Pred Forte QID X 1 week
   iii. IOP check 30-60 minutes after the procedure
   iv. Patient education
g. YAG laser vitreolysis reimbursement and global period
   i. Cash pay model
   ii. CPT code billing
   iii. 90 day global period

5. Hands-on Workshop Time
   a. YAG cap station (30 minutes)
   b. Laser PI station (30 minutes)
   c. SLT station (30 minutes)
   d. 90 minutes hands-on - there will be 3 stations with lasers at each station: YAG capsulotomy, laser PI, and SLT. 30 minutes YAG capsulotomy, 30 minutes laser PI, 30 minutes SLT. Attendees will get familiar with the knobs and buttons at each station, the laser settings for each procedure, and will perform each procedure on model eyes.

Final Review and Discussion