INDICATIONS FOR LASER PERIPHERAL IRIDOTOMY

Duc Tran
FINANCIAL INTERESTS

- None
PATIENT A (DR. X)

- 66 yo M
- VAcc 20/25 OD, 20/30 OS
- +2.00 OU
- IOP 23/22, post-dilation: 28/30 @11 AM
- Gonioscopy: narrow, occludable angles OU
- Lens: Trace NS
- C:D: 0.3 OU
- Scheduled LPI OS then OD
PATIENT A (DR. Y)

- @ 6PM, c/o pain OS
- VA CF OS
- IOP 52
- Started Diamox, PF, Combi, Trav Z, Pilo 2%
- IOP down to 34
- Scheduled LPI the next AM
PATIENT A (DR. X)

- LPI OS
- VA 20/400
- IOP 24
- On Diamox, PF, Combigan, Trav Z, Pilo 2%
- Sent to see me that day
PATIENT A

- VA OS 20/400, 3+ K edema
- IOP 27
- On Diamox, PF, Combigan, Trav Z, Pilo 2%
- LPI was not patent
- After gonioscopy OU
- AS-OCT OU
PATIENT A AS-OCT OD-OS
PATIENT A

- D/C Diamox, Pilo, Trav Z
- IOP 17

- The next three weeks
- VA improved to 20/40
- IOP 27-38
- On Combigan, PF, Diamox
LASER PERIPHERAL IRIDOTOMY (LPI)

Provides an alternate route for the aqueous in the posterior chamber to enter the anterior chamber

Lasers

Argon
Nd:YAG

(Incisional iridectomy if no access to lasers)
Indications:

1. Pupillary block
   - Phakic
   - AcIOL
   - Intraocular CL
   - Silicone Oil

2. Eyes at risk for pupillary block
   - Narrow angle and attack in the fellow eye
   - 50% of the fellow eye will develop acute ACG*

3. To rule-out pupillary block
   - Plateau iris syndrome

Indications for prophylactic LPI

1. Symptoms of subacute ACG
2. Appositional closure on gonioscopy
3. PAS
4. Elevated IOP and closure of angle with dilation
5. Inability to be evaluated promptly
Contraindications:

1. Significant corneal edema
2. Flat AC
3. Completely closed angle
4. ACG not caused by pupillary block
   - Neovascular glaucoma
   - Iridocorneal endothelial (ICE) syndrome
Plan for procedure first thing in the morning and early in the week.

Preoperative treatment:
lopidine (brimonididine) + Pilocarpine 1%
30 minutes before

Postoperative treatment:
1. lopidine (brimonididine) after
2. IOP check 1 hour after treatment
3. Pred acetate 1% qid for 1 week
LPI (NON-ACUTE)

On follow-up

1. VA, IOP, AC and patency of LPI
2. Gonioscopy
3. Schedule for mydriatic provocative testing
   Dilate with Tropicamide 1% (8AM)
   Recheck IOP after lunch
LPI (ACUTE)

NKDA or no contraindications to meds

1. acetazolamide 500 mg PO x 1
2. Combigan q5min X 3
3. Azopt q5 min X 3
4. Pilocarpine 1% X 1 (after #2 and #3)
Sulfa allergy or unable to take PO meds

1. Paracentesis (5% betadine and antibiotics)
2. Combigan q5min X 3
3. Pilocarpine 1% X 1 (after #2)
LPI

Laser technique*:

1. Contact lens (Abraham)

2. Laser settings:

   Argon: 800-1000mW
   50μm
   0.02-0.1 sec

   Nd:YAG: 3-8 mJ
   1-3shots/pulse

*Allingham et al. Shield's textbook of glaucoma. 5th ed. Pg 538-540.
LPI

Laser technique:

1. In base of a peripheral iris crypt at 12, near 9 or 3:00.

2. With Silicone oil at 6:00

3. Endpoint:
   - Pigment storm
   - Visualizing anterior lens capsule or vitreous face
   - Iris transillumination
Complications:
- Transient IOP spike
- Hyphema
- Anterior uveitis
- Corneal epithelial and endothelial burns
- Cataract formation
- Pupillary distortion
- Monocular diplopia and glare
- Closure of iridotomy
- Malignant glaucoma
- Unable to break pupillary block
Difficult in ACG due to thick iridies
Increased iris thickness and association with PACG

PATIENT A AS-OCT OD-OS
Treatment options:
- Peripheral iridoplasty
- Trabeculectomy
- PhacoTrab
- Phaco with possible goniosynechialysis
Phaco OS

POD #1
- Vasc 20/50
- IOP 12 PF, Combigan

POW #1
- Vasc 20/30
- IOP 14 on PF

POM #1
- Vasc 20/20
- IOP 22 on PF
PATIENT A

- OD
  - Vacc 20/30
  - IOP 29, no eye meds

- What to do?
  - Observe?
  - LPI?
  - Peripheral Iridoplasty?
  - Phaco?
PATIENT A

- Phaco OD
- POD #1
  - Vasc 20/25
  - IOP 22
- POW #1
  - Vasc 20/20
  - IOP 16
- POM #1
  - Vasc 20/20
  - IOP 18
PATIENT A  AS-OCT OS BEFORE & AFTER CE
PATIENT A AS-OCT OD BEFORE & AFTER CE

High-definition mode

High-definition mode
PATIENT A AS-OCT 3D OD BEFORE & AFTER CE
LEARNING OBJECTIVES

- Not all AACG are pupillary block
- Perform LPIs early in the day and week
- Prepare to take the patient to surgery if laser fails
- Unless it’s an emergency, do not perform an LPI on the second eye until the first eye is healed.
THANK YOU