Why Repair the Iris

- Not all iris defects need repair
- Small traumatic iris defects
- Peripheral iridotomy
- Iris capture after large incision cataract surgery
- Symptomatic iris defects need repair
- To assist with another anterior segment procedure
- Cosmesis
Major Categories

- Iridodialysis (usually from trauma)
- Sphincter tears leading to irregular pupil
- Loss of tissue from trauma
- Atonic pupil
- Aniridia

Iridodialysis

- Commonly seen in ocular trauma
- Can be surgically induced
- Watch for zonular loss in area of dialysis, makes cataract surgery more challenging
- Timing is important
- Wait long enough for inflammation to clear
- Waiting too long may make the repair very difficult

Technique

- Needle: CIF-4 or STC-6 10-O prolene
- Needles enter through small incision
- Use guide needle through sclera or pocket
- Tie sutures after all mattress sutures placed
64 Year old woman s/p shovel injury to eye leaving her with corneal scar, aphakia, and with iridodialysis.

Iridodialysis Repair
Open Sky

**Technique**
Iris Tears or Loss of Tissue

- Often due to floppy iris and phaco or IA tip grabbing the iris or trauma
- Often seen in the setting of trauma
- Defects can be asymptomatic or allow edge glare
- May be cosmetically unappealing in light colored eyes

Brandon D. Ayres, MD
Cornea Service WEH

Technique

- Needle: Curved needle (CIF-4) 10-O prolene
- Needles enter through small incision
- No exit incision is needed
- Tie knot using a sliding knot technique

Brandon D. Ayres, MD
Cornea Service WEH
Atonic Pupil

- Large dilated pupil can be difficult to close
- Large pupil can cause glare in phakic and pseudophakic patients
- Can be helpful to use prosthetic contact lens to see if symptoms resolve prior to surgical intervention
Atonic Pupil

**Etiology**
- Idiopathic
- Orbital trauma
- Herpes Zoster Infection
- Diabetes
- Autonomic neuropathies (Riley Day)
- Guillain Barre syndrome
- Narrow angle glaucoma

**Technique**
- 4 Paracentesis necessary
- Carefully pass suture through pupil border in baseball style
- Exit through paracentesis using a cannula so you don’t grab fibril of cornea
- After 4th pass tie knot and adjust size

**Fixate IOL**
- Under-over fixation
- Adjust sutures
- Cerclage
  - 4 points/pass
  - Use cannula at exit points
  - Adjust suture tension in the AC
Aniridia

- Traumatic: Penetrating trauma or surgical trauma
- Congenital
  - 2/3 familial and 1/3 sporadic
  - Autosomal dominant, from mutation in PAX6 gene on chromosome 11
  - May be associated with WAGR syndrome

Aniridia

- Other less common causes
  - ICE Syndrome
  - Reiger’s anomaly and other anterior segment dysgeneses
  - HSV and HZV
Available Devices

- Multiple types of iris prosthesis
- Modified CTR
- Ophtec
- Morcher aniridic IOL
- Dr. Schmidt/Human Optics
- Silicone artificial iris

Color Match Systems

Ophtec
Morcher
Dr. Schmidt AI

There is currently no FDA approved iris prosthesis device

The Dr. Schmidt Human Optics artificial iris is currently under FDA investigation for safety and efficacy, its use currently is investigational and not available for compassionate use.
Summary

Iris repair can be very rewarding for both physical and patient
Multiple techniques may need to be used for successful repair
In cases where repair is not possible, prosthetic devices may be available in future to help alleviate patient symptoms and enhance cosmesis

Thank You
Brandon D. Ayres
bayres@willseye.org
www.willseyeonline.org