

Iris Repair and Reconstruction

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BAYLOR COLLEGE OF MEDICINE

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Iris repair

Rationale For Iris repair:

- Repair enlarged or irregular pupil
 - Glare
 - Monocular diplopia
 - Cosmesis
- Repair slack iris diaphragm
 - Prevent synechiae
 - Prevent irido-corneal adhesions

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Iris repair

Sutures:

STC-6 (Ethicon)

- Straight needle
- Spatula point
- Thin / sharp

CIF-4 (Ethicon)

- Curved
- Taper point
- Thick/ stiff
- Not as sharp

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Iris defects:

• 4 Scenarios:

- 1) It's all there but not anatomically correct
- 2) it's all there, anatomically correct but doesn't work
- 3) It's *not* all there but the defect is small
- 4) It's *not* all there and the defect is large

Iris defects:

1. It's all there but not anatomically correct

Techniques:

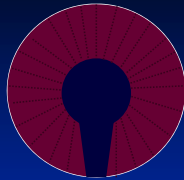
The McCannel suture

Transverse Suture :

- **Modification of McCannel suture**
- **Uses**
 - Repair of radial lacerations
 - Repair of radial iridotomy
 - Repair of sphincter tears

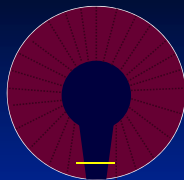
Transverse Suture:

- **Modified McCannel suture**
 - Stab wound overlying the defect
 - Pass needle across the anterior chamber
 - Capture edges of the iris defect



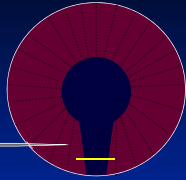
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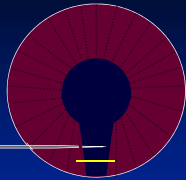
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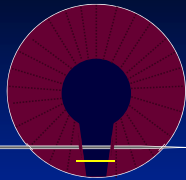
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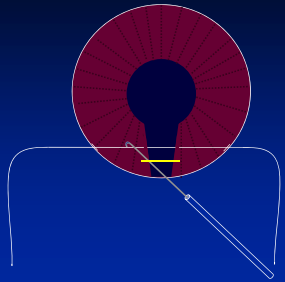
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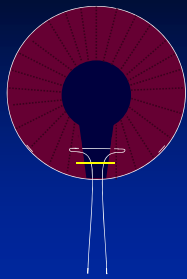
Transverse Suture:

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 - Retrieve suture through the stab wound



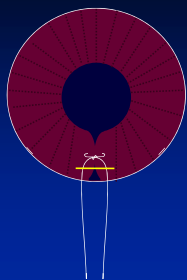
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Transverse Suture:

- **Modified McCannel suture**
 - Tie and trim
 - Allow knot to retract into the anterior chamber



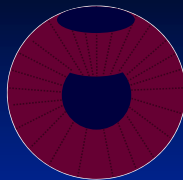
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Radial Suture:

• **Trans anterior chamber approach**

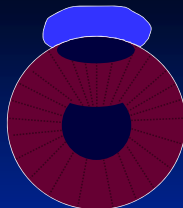
- Create peritomy over iris defect
- Create paracentesis 180° away
- Pass double armed STC-6 needles through the paracentesis
- Capture iris root
- Exit through perilimbal sclera



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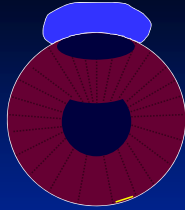
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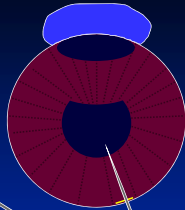
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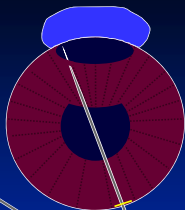
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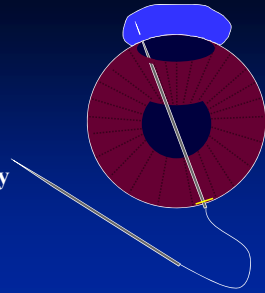
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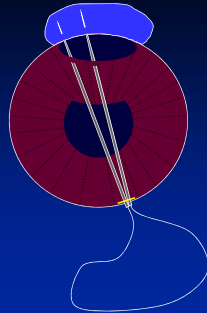
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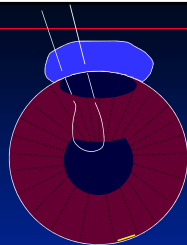
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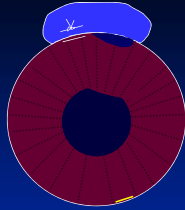
Radial Suture:

- Trans anterior chamber approach
 - > Pull suture through and tie
 - > Rotate the knot into the sclera



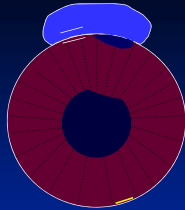
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Radial Suture:

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Iris defects:

2. It's all there but it doesn't work

Iris defects:

- 24 y/o male
 - Struck in the eye with a bungee cord
 - Dilated pupil
 - Significant glare complaints

Pupillary Cerclage:

- 3 steps:
 1. Create a corneal incision
 2. Create 3 additional paracenteses at the cardinal semi-meridians
 3. Perform a “basting stitch” for 360⁰

Pupillary Cerclage:

Basting stitch vs “Overcast” stitch:

Basting stitch

Pupillary Cerclage:

Basting stitch vs "Overcast" stitch:

Overcast stitch

Pupillary Cerclage:

- 3 steps:

1. Create a corneal incision

- generally slightly to right of midline for "righties"

Pupillary Cerclage:

- 3 steps:

2. Create 3 additional paracenteses at the cardinal semi-meridians

Pupillary Cerclage:

3. Perform iris “basting Stitch”

- Insert needle into paracentesis – do not catch tissue
- Take 3-4 bites / quadrant

Basting Stitch:

- Place suture about 1 mm back from the sphincter
 - Exit via next paracentesis
-This is the tricky bit....*
- Do NOT catch tissue on the way out.

Exiting the Paracentesis:

- Use a “Catcher”
 - 24 ga Angio Cath on a TB syringe
 - Cut at a slant
 - Insert into paracentesis to catch the needle tip and ease it out of the eye

Pupillary Cerclage:

- 1 quadrant at a time
- Exit and re-enter the A.C. via the paracenteses

Pupillary Cerclage:

- Complete the circuit
- Tighten the purse string to desired pupil diameter

Pupillary Cerclage:

Pupillary Cerclage:

- So, how does it look?

Iris defects:

- 3. *It's not all there* - “small” defect

Iris defects:

- 3. *It's not all there* - “small” defect

Iris defects:

3. It's not all there

- "small" defect

McCannel suture

Iris defects:

4. It's not all there - BIG defect

Iris defects:

4. It's not all there - BIG defect

Iris replacement:

- Options- Previous prosthetic iris devices

Ophtec

Iris replacement:

- Options- Previous prosthetic iris devices

Require an intact capsule

Iris replacement:

- Options- Previous prosthetic iris devices

Ophtec

Can be implanted in the bag or sutured...

Iris Prosthesis

Iris replacement:

- Options- Previous prosthetic iris devices

Ophtec Aniridia IOL

CULLEN EYE INSTITUTE BCM

Iris Prosthesis

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Ophtec

Not Available

CULLEN EYE INSTITUTE BCM

CustomFlex® Iris Prosthesis:

- Custom made
- Silicone
- With or without fiber skeleton

CustomFlex® Iris Prosthesis:

- The anterior surface mimics the natural iris by its:
 - Color composition (embedded non-toxic pigments) (NB: MRI)
 - Iris 3D structure
 - Black posterior surface to prevent light transmission

CustomFlex® Iris Prosthesis:

- Can be placed:
 - In the bag
 - Folded
 - Injected
 - In the sulcus
 - Sutured to the sclera

CustomFlex® Iris Prosthesis:

- In the Bag placement
 - Intact bag
 - Intact capsulorhexesis

CustomFlex® Iris Prosthesis:

- In the Bag placement
 - Intact bag
 - Intact capsulorhexesis
 - About 6mm dia
 - Too small – hard to implant the device
 - Too big – device may pop out during implantation

CustomFlex® Iris Prosthesis:

- Capsule management:
 - CTR in the bag
 - Capsule dye
 - Trypan Blue - fine for most cases
 - ICG is required for congenital aniridia
 - Aniridic capsules are fragile

CustomFlex® Iris Prosthesis:

- **In the Bag placement**
 - Device needs to be sized
 - As supplied dia is 12.8 mm
 - In the bag dia:
 - 9.5 mm (“normal eyes”)
 - 10.0 mm (high myopes)

CustomFlex® Iris Prosthesis:

- **In the Bag placement**
 - May need to measure the bag:
 - Pediatric use
 - Micro anterior segments
 - Megaloanterior segments

MST Snider ruler

CustomFlex® Iris Prosthesis:

- **In the Bag placement**
 - PC IOL will sit more posteriorly than usual
 - Aim 0.75D more myopic to compensate

CustomFlex® Iris Prosthesis:

- How does it look in the eye?

CustomFlex® Iris Prosthesis:

- Completed FDA Clinical Trial
 - Now pre-market approved
 - 2 part training program
 - Photos are taken
 - Device is custom made
 - 60-90 days for delivery

CustomFlex® Iris Prosthesis:

- Insurance....
 - Current cost:
 - \$8,100 per device (get 2)

