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**ASCRS 2014 Cataract surgery in diseased eyes**

**Cataract surgery in post-vitrectomy eyes**

- Biometry – use optical means if possible for axial length, allow for silicone oil if A scan needed
- Type of anaesthesia – if topical beware of potential discomfort as AC deepens some may prefer peri or retrobulbar or GA
- Surgical considerations because of potential AC deepening – handpiece position and fluctuation
- Incision size and machine settings

The literature reports the increased risk of PCR in post vitrectomy eyes

**Results of cataract surgery in previously vitrectomized eyes**

- 11.6% with ECCE
- 6.9% with KPE

**IOL choice**

- Use an IOL of sufficient length and with good capsular stability eg Acrysof MA60MA and consider use of CTR if one piece lens used
- Remember that PCO will appear early and frequently because there is no vitreous support to help the capsular bag to seal
**Wound considerations**

- Wound construction – consider scleral wound as it is more posterior and less likely to distort cornea.
- If CCI used do not make wounds too long as corneal distortion can impair the view if Kelman tip not used.
- Make sure that wounds match instruments to minimise leakage which can increase AC fluctuation.
- CMICS or BMICS are better alternatives.

**Other surgical considerations**

- The rhesis is may be more difficult if too much viscoelastic is injected as the AC can easily overdeepen.
- Use special techniques to avoid Lens Iris Retropulsion Syndrome and patient discomfort due to AC sudden deepening and instability.
- Use machine settings to avoid chamber instability.

**Use machine settings to avoid chamber instability, biaxial works well here**

- As chambers often more unstable due to minimal vitreous support consider using lower flow rates and vacuum than normal.
- Avoiding leakage helps – smaller incisions.
- Biaxial can help to minimise chamber fluctuation.
- Torsional phaco minimises chamber turbulence.
Lens iris diaphragm retropulsion syndrome

Phaco probe in eye before BSS turned on

BSS
Viscoelastic

As BSS is turned on viscoelastic is pushed back to block pupil and lens iris diaphragm moves posteriorly suddenly

And here is a new sign

This causes pain and a very deep AC

Multifocal iris sphincter ruptures: New sign of the lens-iris diaphragm retropulsion syndrome

Robert H. Osher, MD, James M. Osher, MD, Robert J. Cionni, MD

We describe the case of a 78-year-old highly myopic woman who had bilateral phacoemulsification with posterior chamber intraocular lens implantation. During surgery, the anterior chamber was extremely deep and the pupil was excessively dilated, consistent with lens-iris diaphragm retropulsion syndrome (LIDRS). Subsequent biomicroscopy revealed multifocal iris sphincter ruptures, a new finding associated with LIDRS.

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Various methods have been described to overcome this problem:

- Operate with low bottle height
- Use the Cionni manoeuvre – lift the iris opposite the side port with an instrument to break the posterior pupillary block and allow the chamber to shallow.

As iris is lifted by manipulator the anterior and chamber pressures start to equilibrate and AC begins to shallow as viscoelastic exits eye.

After Cionni manoeuvre:

AC returns to physiological depth and surgery can continue as normal.

The Cionni manoeuvre is all very well and is extremely useful in eyes where a sudden AC deepening was not expected but the patient under topical will still feel pain!
I have devised a modification to the Cionni technique which prevents LIDRS completely. It works for both post-vitrectomy eyes and highly myopic eyes.

Dealing with LIDRS in post-vitrectomy eyes

- Put irrigation bottle down to 40cm
- Put phaco needle and sleeve in eye with fluid off
- Place second instrument in side port to allow easy egress of fluid
- Lift iris opposite side port
- Press foot pedal to foot position 2 to allow eye to fill but also draw fluid out
- Return irrigation bottle to normal height with no change in AC depth
- Each AC re-entry requires these steps

Avoiding LIDRS published in JCRS 2010

Surgery on first a post-vitrectomy eye and then a highly myopic eye

Placed phaco probe into eye without irrigation on
With appropriate manoeuvres post-vitrectomy eyes having cataract surgery although potentially challenging can be dealt with to produce satisfactory outcomes.

In conclusion

Thank you