Uncomplicating Cataract Surgery: Attaining a Dream.

Eliminating complications with proper technology & techniques.

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Dispersive OVD
Cohesive OVD
BSS

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1. Hold instruments like top chopstick
2. Use intracameral Xylocaine (& phenylephrine or Shugarcaine)
3. Make tight incisions
4. Understand Rheology
5. Use TSST variations
6. Shear, don’t stretch rhexis
Higher AC pressure ◊smaller rhexis
7. Do not sculpt, use pulsed phaco, preferably CVP, IP.
8. CC Hydros dissect more than you think you should.
9. Chop all pieces before removing any.

Holding Surgical Instruments:
Like top chopstick

Holding Phaco Handpieces:
Like top chopstick

IC xylo-phe

1. Add min (0.3 cc, B&L-Chauvin) 10% phenylephrine to 5 cc BSS in 6 cc syringe (◊ 0.57%, diluted 17.7x).
   FDA approved Paragon Biotech 2.5 & 10% phe Mar. 21, 2013, pres with BAK. 2.5% supplied as 15 ml in 15 ml bottles, 10% as 5 ml in 10 ml bottles.
2. Add 2-3 drops of above phenylephrine solution to xylocaine (Astra 1% non-preserved insotonic xylo polyamp) on scrub tray (◊ 0.03%, diluted ≥300x).
3. Inject 0.1 cc IC xylo-phe thru side port. (1.)
   – Almost all pupils dilate to 8-9 mm in 10 seconds.
4. Inject 0.1 cc IC xylo-phe under OVD. (2.)
   – 1 more mm of pupil dilation.

IC xylo-phe: Why it works so well.

• Xylocaine completely paralyzes sphincter.
• Phenylephrine aggressively stimulates dilator.

Benefits:
- Maximally enhances iris tone.
- Great for all cataract cases.
- Adequate for 90+ % IFIS cases.
- Safe
IC xylo-phe

For the formula to make xylo-phe, email me at: ifx2is@sympatico.ca

Tight Incisions

- Better control of AC pressurization.
- Far better control of phaco parameters.

“Phaco is Rheology”

Two physical components of Phaco:

- Phaco power modulations.
- Rheology (Control of flow in, & maintenance of, the AC.)

OVDs are pseudoplastic fluids used to create an AC surgical environment optimized for surgery.

Creative use of OVDs reduces complication rates.

Argentinean Flag Sign*

- Discussion of this subject is usually clear evidence of fundamental misunderstanding of rheology.
- By all accounts: “Rheology is a difficult subject.”
- Argentinean Flag Sign should never be seen - PECS.


PRESSURE EQUALIZED CATARACT SURGERY

Why do we need to pressurize the AC?
(higher viscosity cohesives)

- There is constant posterior pressure.
  - Extraocular muscle pull.
- Anterior capsule is convex anteriorly.
  - It will always want to tear peripherally.
- Only an elastic OVD can neutralize the posterior pressure (HMW NaHa).
- Important for: capsulorhexis IOL implantation
The Tri-Soft Shell Technique (TSST) is a logical system of unification of all previous soft shell techniques to make them all easier to understand & perform.

**Combining OVDs in precise “Techniques” can always achieve more:**

OVD Techniques (Soft Shell, Ultimate Soft Shell, Soft Shell Bridge, TSST & multiple variations) allow surgeons to achieve more than with one OVD physical space in the anterior chamber by pressurizing, stabilizing & partitioning.

**ULTIMATE SOFT SHELL TECHNIQUE (USST)**

*Pre Capsulorhexis Step*

*Pre IOL Implantation Step*

**USST for Capsular Dyes**

AC 90% filled with viscoadaptive. Vision Blue painted over capsule. Vision Blue washed out as BSS "locks USST".

Capsulorhexis is easier when BSS is injected onto the capsule surface, after OVD injection, when using Soft Shell Techniques, or any viscous cohesive OVD alone.
TSST for Fuchs’

1. Viscoat filled space (injected 1st)
2. Viscoadaptive filled space (injected 2nd)
3. BSS filled space (injected 3rd)

Flomax IFIS SS Bridge

1. 2 x adrenaline in the bottle.
   - 1cc intracardiac 1:1,000 adrenaline / 500 cc BSS
2. Long, tight incisions - prevent iris prolapse.
3. Intracameral xylocaine - (30 sec - 1 min).
4. Intracameral phenylephrine
   - add 5 cc BSS to entire mix (0.3 cc) of 10% phenylephrine
   - in a 5 cc syringe (≈ 0.25 ml), dilute 1:1,000
   - intracardiac 1:1,000 adrenaline
   - inject 0.2 cc into AC after xylocaine, & again under OVD in USST.

Soft Shell Techniques - Summary

Tri-Soft Shell Technique (TSST)

- Dispersive
- Viscocapillary
- Cohesive
- Viscosacidal
- BSS
- Aqueous + BSS

Shear, don’t stretch capsulorhexis

Eliminating chatter

- Arshinoff: CVP
  “Continuously Variable Pulse”

“On” period of pulse duty cycle decreases as power increases ⇒ shorter, harder punches.

Goal: Energy x time ≈ constant

(“≈ independent control of power intensity and shape of wave delivery”)
Benefits of CVP Chatter Reduction

1. More efficient phaco
2. Permits reduction of:
   a. asp flow rate
   b. vacuum
   c. bottle height
   d. dynamic rise
3. Simplify steps
4. Reduced AC turbulence
5. Reduced endothelial trauma

Reducing chatter on phaco machine - IP

Uncomplicating Cataract Surgery... Summary

1. Hold instruments like top chopstick
2. Use intracameral Xylo & phe
3. Make tight incisions
4. Understand Rheology
5. Use SST & variations
6. Shear, don’t stretch rrhexis
   Higher AC pressure =smaller rrhexis
7. Do not sculpt, use pulse, CVP, IP.
8. CC Hydrodissect a lot !
9. Chop all pieces before removing any.

“In Cataract Surgery, the slower you go, the less time it takes!”