Uncomplicating Cataract Surgery:
Attaining a Dream
Eliminating complications with proper technology & techniques.

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Uncomplicating Cataract Surgery – 10 Small Tricks

1. Do ISBCS, use the right instruments
2. Hold instruments like top chopstick
3. Use intracameral xylocaine & phenylephrine
4. Make tight incisions
5. Understand Rheology
6. Use TSST variations
7. Shear, don’t stretch rhexis
   Higher AC pressure -> smaller rhexis
8. Do not sculpt, use pulsed phaco, preferably CVP, IP.
9. CC Hydrodissect more than you think you should.
10. Chop all pieces before removing any.

ISBCS + PHACO SLICE & SEPARATE

1st hydrodissect very well using Akahoshi Hydrodissection-Cannula II - 2.7 g. bevel tip

Perform first slice
Separate nuclear halves

Xylocaine-Phenylephrine to facilitate cataract surgery

used 0.1%phenylephrine
Intracameral Phenylephrine

- Bill Myers (Chicago) – IC phenylephrine obtained from Leiter’s in US (1.5% + xylo).
- Ramon Lorente (Spain) – 1.5% phenylephrine IC for IFIS.

SAA: IC xylo-phe

1. Add minim (0.3 cc) 10% phenylephrine to 5 cc BSS in 6 cc syringe (+ 0.57%, diluted 17.7x).
2. Add 4.5 drops of above phenylephrine solution to xylocaine (Astra 1% non-preserved insotonic xylo polyamp) on scrub tray (+ 0.08%, diluted ≥150x).
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

Alternatives available in Europe (1 ml glass vials – single use):
- Phenocaine injection (Entod, UK), Nov. 2016
- Mydrane Xylo-Phe
- Tropicamide 0.02%
- Phenylephrine HCl 0.31%
- Lidocaine 1%

If you would like this xylo-phe formulation & use sheet, please email me at: ifix2is@gmail.com
Tight Incisions

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

“Phaco is Rheology”

Two physical components of Phaco:

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

OVDs are pseudoplastic fluids used to create an AC surgical environment optimized for surgery. Creative use of OVDs reduces complication rates.

PRESSURE EQUALIZED CATARACT SURGERY

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

- There is constant posterior pressure.
  - Extracapsular 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

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.


TRISOFT SHELL TECHNIQUE (TSST):

Enhanced by adding BSS below the cohesive OVD

Capsulorhexis is easier when BSS is injected onto the capsule surface, after OVD injection, when using Soft Shell Technique, or any viscous cohesive OVD alone.

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.

**Tri-Soft Shell Technique (TSST)**

- **Dispersive (visco) filled space** (injected 1st)
- **Viscoadaptive (Healon5) filled space** (injected 2nd)
- **BSS filled space** (injected 3rd)

**GOALS:**
1. Ac pressureization of viscoadaptive.
2. Low resistance to surgical maneuvers.
3. BSS will not mix with viscoadaptives.

**TSST for Fuchs’ & Low ECC**

1. Low flow → low turbulence (Ozil).
3. Vacuum < 250 mm Hg.
4. Bottle height ~ 75 cm
5. Reinject OVDs as needed (H5): - e.g. after hydrodissection.
6. Keep phaco & I/A deep to rhexis,

**ULTIMATE SOFT SHELL TECHNIQUE (USST)**

**Pre Capsulorhexis Step**

**Pre IOL Implantation Step**


USST for Capsular Dyes

1. Viscoadaptive
2. Vision Blue
3. BSS

1. AC 90% filled with viscoadaptive, until central concavity.
2. Vision Blue painted over capsule.
3. Excess Vision Blue washed out as BSS "locks USST".

Tri-Soft Shell Technique (TSST)

Shear, don’t stretch capsulorhexis

Little capsulorhexis tear-out rescue

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
Reduce chatter on your phaco machine

Benefits of Reducing Chatter

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

CVP for AMO Signature

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Uncomplicating Cataract Surgery: Summary

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

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

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