Primary Posterior Capsulotomy: A Feasible Way to Prevent PCO?

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Financial Interests
- Consultant to AMO Inc.
- Consultant to Alcon Inc.
- Consultant to Technolas GmbH
- Consultant to LenSx Inc.
- Clinical investigator for AcuFocus Inc.
Primary Posterior Capsulotomy (PPC)

- Standard of care in pediatric cataract

- Not a new idea in adults:

Problems of Posterior Capsulotomy

- Barrier between anterior and posterior part of the eye is destroyed

- Vitreous prolapse with or without incarceration possible, causing:
  - Cystoid macular edema
  - Retinal detachment
Kraff MC, Sanders DR, Jampol LM, Lieberman HL

- Posterior capsulotomy after IOL implantation, no IOL buttonholing
- 93 eyes capsulotomy, CME 22 %
- 71 eyes no capsulotomy, CME 6%

Advantages of Posterior Capsulotomy

- No secondary cataract formation
  - No need for YAG capsulotomy
  - No “floaters“
  - Lower incidence of retinal detachment ?

- Better IOL centration
  - Centration now depends on the surgeon, not on the bag dimensions!
Should we try Primary Posterior Capsulotomy (PPC) again?

- Menapace R
  Posterior capsulorhexis combined with optic buttonholing: an alternative to standard in-the-bag implantation of sharp-edged intraocular lenses?
  A critical analysis of 1,000 consecutive cases.

Surgical Technique of PPC

- Nucleus and cortex are removed
- Capsular bag is filled with visco (do not overfill)
- Posterior capsule is incised centrally with 27g cannula
- Low-viscosity hyaluronic acid is injected to separate the Wieger ligament from the posterior capsule and push the vitreous back
- PPC is performed with capsulorhexis forceps, diameter 4 - 5 mm
Capsulorhexis with Forceps

- IOL is implanted in capsular bag
- IOL optic is buttonholed into posterior capsulotomy

PPC and IOL Implantation

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Results of PPC (Menapace)

- 1,000 eyes from 2004 – 2007
  - 0.3 % (3 eyes) anterior vitrectomy
  - 0.8 % (8 eyes) vitreous herniation
  - 0.1 % (1 eye) retinal detachment (unrelated ?)
  - No CME
  - No secondary cataract
  - Perfect and stable IOL centration
Personal Experience

- I use it in hyperopes when implanting multifocal IOLs
  - No secondary cataract
  - No IOL decentration
- Difficult “tricky“ surgery, learning curve
- Excellent results

Conclusions

Primary posterior capsulotomy (PPC) with IOL optic buttonholing:

- Standard of care in pediatric cataracts (combined with anterior vitrectomy ?)
- Interesting option if secondary cataract must be avoided or is very likely
  - Multifocal IOL implantation (hyperopes ?)
  - Cataract in young patients
THANK YOU