Phaco is the Best Glaucoma Surgery

NOT!

Results of Previous studies*

• Shingleton (JOG, 2006): 150 patients with glaucoma, glaucoma suspects, and without glaucoma
  – Mean decrease in IOP of 1.5 mm Hg in all 3 groups at 3 years.
• Poley (JCRS 2008; JCRS 2009) reported IOP changes with average follow-up of 4 years.
  – The higher the pre-operative IOP, the greater the reduction in IOP after cataract surgery.
  – 6.5 mm Hg drop with preop IOP 23-31 mm Hg
  – 1.6 mm Hg drop with preop IOP 15-17 mm Hg

*Cataract Alone – Evidence for IOP Reduction


Cataract Surgery and IOP

• Previous studies suggest cataract surgery lowers IOP in normal and glaucoma patients
• IOP reduction is generally proportional to pre-surgical IOP
• Most studies used only a single preoperative IOP, were retrospective, and did not include untreated patients
  – regression to the mean
  – differential bias from ocular hypotensive medications
Cataract Alone – Glaucoma Medications

- Glaucoma: 60% will have 10 mm Hg IOP rise after surgery (Krupin, Ophth 1989)
- Normal Eyes: 70% with IOP > 31 mm Hg (Rainer, 2005, AAO)

Cataract First – Early IOP


Cataract Surgery – Early IOP

**Cataract Surgery – Effect of Viscoelastic**

- Mean outflow facility:
  - Healon-treated: $0.060 \pm 0.011 \mu L/min/mm Hg$
  - Viscoat-treated: $0.037 \pm 0.015 \mu L/min/mm Hg$

- 0.25 mL of viscoelastic followed by 75 sec of irrigation/aspiration


**Cataract Surgery**

- IOP spikes common
- Other approaches preferred for high risk eyes
- 10% of eyes with advanced visual field loss had worsening of their VF defect after cataract surgery alone
  

Recommendations

- Avoid phaco alone in advanced glaucoma
- Don’t be quick to perform paracentesis for IOP spike (Taban M, et al. 2005. Arch)
- Judicious viscoelastic and cortex removal (cohesive vs dispersive)
- Consider topical prophylaxis