More Physiologic IOP in Cataract Surgery Matters: Here's Why

During a recent symposia series, respected cataract surgeons explained the key advantages of performing cataract surgery with more physiologic IOP when using CENTURION® Vision System with ACTIVE SENTRY®.

BY ALISON D. EARLY, MD; CRISTOS IFANTIDES, MD, MBA; ROBERT F. MELENDEZ, MD, MBA; AND DAGNY ZHU, MD

Maintaining a more natural IOP during cataract surgery preserves the health of the anterior segment, reduces postoperative corneal swelling, enhances endothelial cell protection, and minimizes anterior segment inflammation compared to higher IOP levels.[1-3] Recent data indicate significant benefits when operating at lower irrigation pressures, specifically:

- Less corneal edema as exhibited by an increase in corneal volume at 1 month[1]
- Less of an increase in central corneal thickness at days 1 and 7[2,3]
- Better corneal clarity at day 1[3]
- Lower presence of Descemet's folds at day 1[2,3]
- Less anterior segment inflammation as indicated by the presence of flare and cells at day 1[2,3]

The CENTURION® Vision System with ACTIVE SENTRY® (Alcon) allows surgeons to operate at a more physiologic IOP without compromising anterior chamber stability, surgical efficiency, or patient comfort and safety.

EFFICIENT PHACOEMULSIFICATION IN A STABLE CHAMBER

The CENTURION® Vision System with ACTIVE SENTRY® enables surgeons to operate at lower fluidic rates while still extracting cataractous lenses efficiently. The ACTIVE SENTRY® technology senses intraoperative changes in IOP and responds by sending real-time feedback to adjust fluid flow and vacuum levels. These constant fluidic adjustments keep the anterior chamber stable while allowing surgeons to use higher aspiration and vacuum levels for accelerated fragment removal with reduced repulsion, lower dissipated energy, and less aspirated fluid.

CHAMBER STABILITY AND SURGE CONTROL

The ACTIVE SENTRY® Handpiece and QuickValve™ technology use an integrated, responsive pressure sensor to mitigate IOP fluctuation and surge. When the sensor detects the onset of postocclusion surge, the QuickValve™ technology within the FMS responds immediately to supply BSS to the aspiration line, thereby maintaining the surgeon's predetermined IOP settings and optimizing the fluid dynamics for each case.

PATIENT COMFORT

Research pinpointing anterior chamber distention as a cause of patient discomfort during cataract surgery underscores how maintaining a more natural IOP and stable anterior chamber could significantly support patient comfort during the procedure.[4] The CENTURION® Vision System with ACTIVE SENTRY® Handpiece ensures a stable anterior chamber, allowing the surgeon to focus on the procedure without concerns about IOP fluctuations that could require reduced fluidic speeds. To learn more, scan the QR code. ■

1. Suzuki H, Oki K, Shiwa T, Oharazawa H, Takahashi H. Effect of bottle height on the corneal endothelium during phacoemulsification. *J Cataract Refract Surg*. 2009;35(11):2014-2017.
2. Vasavada AR, Praveen MR, Vasavada VA, et al. Impact of high and low aspiration parameters on postoperative outcomes of phacoemulsification: randomized clinical trial. *J Cataract Refract Surg*. 2010;36(4):588-593.
3. Vasavada V, Raj SM, Praveen MR, Vasavada AR, Henderson BA, Asnani PK. Real-time dynamic intraocular pressure fluctuations during microcoaxial phacoemulsification using different aspiration flow rates and their impact on early postoperative outcomes: a randomized clinical trial. *J Refract Surg*. 2014;30(8):534-540.
4. Hou C-H, Lee J-S, Chen K-J, Lin K-K. The sources of pain during phacoemulsification using topical anesthesia. *Eye (Lond)*. 2012;26(5):749-750.

ALISON D. EARLY, MD
- Cincinnati Eye Institute, Cincinnati, Ohio
- alisondearly@gmail.com
- Financial disclosure: Consultant (Alcon, Iveric Bio, Johnson & Johnson Vision, LENSAR, Ocuphire, Tarsus Pharmaceuticals, Trefoil, Visus Therapeutix)

CRISTOS IFANTIDES, MD, MBA
- Tyson Eye, Cape Coral, Florida
- cristosmd@gmail.com
- Financial disclosure: Consultant (Alcon, Bausch + Lomb, Johnson & Johnson Vision, LENSAR, ZEISS)

ROBERT F. MELENDEZ, MD, MBA
- Juliette Eye Institute, Albuquerque, New Mexico
- robertmelendez@mac.com
- Financial disclosure: Consultant (AbbVie/Allergan, Alcon, RxSight, STAAR Surgical, Trukera, ZEISS)

DAGNY ZHU, MD
- NVISION Eye Centers, Rowland Heights, California
- dagny.zhu@gmail.com
- Financial disclosure: Consultant and research grant recipient for Alcon