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Early detection and prevention of rising intraocular pressure: A protocol and utilization of a standardized observation scale and treatment interventions

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Following a case of Postoperative Visual Loss (POVL) in the Steep Trendelenburg (ST) position at our institution, IOP measurements were taken during laparoscopic surgery. IOP was observed to rise overtime with increases (4-5 times baseline). While monitoring we observed eyelid edema and degrees of conjunctival edema and correlated findings to rising IOP. We trialed a preventive supine intervention that significantly impacted increase in IOP and may prevent future POVL events since current literature cites retinal cell ganglion dysfunction as a result of even brief (30-40minute) acute increases in IOP. Additionally, increased peri-orbital swelling and venous congestion secondary to trabecular meshwork dysregulated pressure dependent outflow may produce a low perfusion state in the eye, via a compartment syndrome mechanism. Cosopt™ eye drops were trialed (carbonic anhydrase inhibitor/beta adrenergic blocker). Prevention of IOP rising above 40 mmHg was the goal since 45-55mmHg IOP was determined to bea critical threshold in POVL incidents. The literature cites the importance of early IOP reduction since optic nerve ischemia may lead to visual loss. The purpose of these four studies was to: 1) Develop an observation scale (MBOS) correlating to the rising IOP, 2) Evaluate a Peri-operative and 3) Preventive intervention with Cosopt™ eye drops and 4) A comparative intervention where head was elevated mid procedure so as to reduce the rising IOP trend. Studies have provided significant results and valuable findings in determining when IOP is elevated, in lieu of direct tonometry and all interventions have arrested the IOP escalating trend. This symposium will provide a venue for illustration and education of these findings in pursuit of ophthalmic safety.

Biography

Bonnie Molloy PhD, CRNA has been practicing anesthesia for 33 years and has been studying Post-operative visual loss (POVL) and conducting research in this field since 2005. She completed her Doctoral dissertation in 2010 in the Development of the Molloy/Bridgeport Anesthesia Observation Scale (MBOS) correlating rising intraocular pressure (IOP) to observations in eyelid and conjunctival edema (chemosis) during steep trendelenburg (ST) surgical procedures and became an Associate Member of the American Academy of Ophthalmology at that time. She has published practice interventions in pursuit of normalizing IOP and has established a protocol that can be used by all anesthesia caregivers.

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