Session 3-J: Cataract: Endophthalmitis, Complications

Title: Anterior Chamber Decompression After Phacoemulsification: Risk for Intraocular Contamination

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Purpose: To study the risk of intraocular contamination following anterior chamber decompression for the management of early intraocular pressure spikes after uneventful phacoemulsification.

Methods: 30 eyes with elevated intraocular pressures (>35 mm Hg) 1-2 hours after uneventful phacoemulsification were consecutively recruited in a prospective case series. All eyes were treated for high intraocular pressures with aqueous release by controlled pressure on the posterior lip of corneal section with a sterile minim on a slit lamp. A drop of 2% fluorescein was instilled in the conjunctival sac prior to aqueous release in an attempt to study the ocular fluid dynamics during and after decompression procedure. The patterns of fluorescein movement were observed and photo graphed under a cobalt blue light.

Results: An entry of fluorescein stained fluid into the anterior chamber was observed in 40% of the study eyes; thus giving to an 'Inverse Siedel's Test' ($P<0.01$). A significant fluorescein flare was observed immediately following decompression procedure in 80% of the eyes ($P<0.01$). All 30 eyes showed staining of the entire incision track with fluorescein. We demonstrate that as the eye ball regains original shape on release of compressive forces, a transient state of relative vacuum is created in the anterior chamber. The inward pressure gradient causes inevitable entry of the fluid into the anterior chamber.

Conclusions: The intraocular contamination by the ocular surface fluid during anterior chamber decompression poses a realistic risk of complications like endophthalmitis. The clinical role of this commonly performed procedure, proven only to have a temporary pressure reducing effect, needs to be revaluated in view of this risk.