Letter to the editor

Phaco capsulotomy in intumescent cataract

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Dear Editor,

Intumescent cataracts are challenging cases even for experienced phaco surgeons (Bhattacharjee et al, 1999; Ermiss et al, 2003). In these eyes, during capsulorhexis, there are very high chances of anterior capsule tears with peripheral extension due to the high pressure of the hydrated cataractous lens. Following this, the continuation of phacoemulsification is extremely difficult and is associated with complications such as posterior capsule tear, vitreous loss and posterior migration of the lens matter. Different methods have been tried to prevent this uncontrolled extension of capsulorhexis. These include direct aspiration of lens fluid using a 26 G needle mounted onto a syringe. Alternatively, using high-cohesive viscoelastics is also helpful in maintaining the pressure on the anterior chamber and creating a complete capsulorhexis. Use of high-frequency diathermy and preoperative Nd:YAG laser anterior capsulotomy has also been reported as an optional technique (Pham et al, 1998; Coelho et al, 2009). Phaco capsulotomy is a technique where the anterior capsule is punctured using a phacoemulsification probe and then the probe is used to debulk the lens matter by aspirating the intralenticular fluid. Once intralenticular pressure is relieved, the capsule is grasped with a capsulorhexis forceps and the rhexis is completed. The initial surgical steps of cataract removal are the creation of the paracentesis and the main wound, capsular staining using trypan blue and maintenance of the anterior chamber using viscoelastics. Using the main wound, the phacoemulsification probe is introduced into the anterior chamber and the tip of the bevel of the phaco hand piece is directed upwards, centered over the center of the anterior capsule. The settings used during phaco capsulotomy are a power 40 %, a vacuum of 200 mm Hg and an aspiration flow rate of 28 cc/min. The foot pedal is pressed to position three and the anterior capsule is punctured with the phaco tip (Figure). This creates the initial anterior capsule puncture with the release of intra-lenticular fluid which is aspirated. The phaco hand piece is then removed from the eye and the viscoelastics are injected into the anterior chamber to pressurize the anterior surface of the capsule. The anterior capsular tear is visualized and grasped with a capsulorhexis forceps. The continuous curvilinear capsulorhexis is then fashioned with the forceps keeping the force of the pull of the rhexis margin to the centre. Following this, the nucleus is removed by phacoemulsification (Song et al, 1998). In conclusion, phacocapsulotomy is a safe and effective technique which prevents sudden extension of capsulorhexis by depressurizing the intralenticular pressure and debulking the lens. This technique prevents the spontaneous peripheral migration of the capsulorhexis edge, thus reducing the concurrent complications. A large series of cases will be required to prove the efficacy and safety of this novel technique.

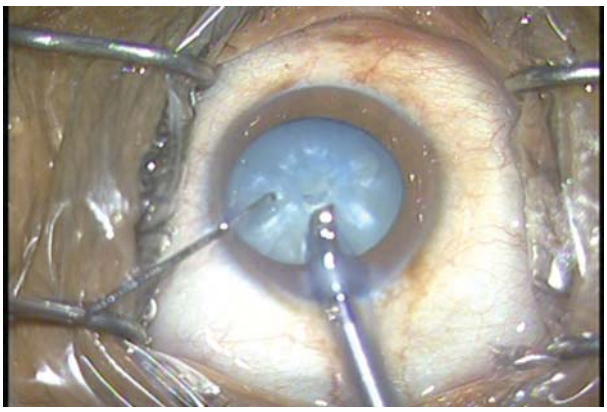

Figure: Anterior capsule punctured with the phaco tip

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