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Service (sector) Cataract N° CEP

## **THE FATE OF THE ANTERIOR CAPSULE TEAR DURING CATARACT SURGERY**

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**Purpose:** To demonstrate the causative factors and the intra-operative behavior of the anterior capsular tear during cataract surgery. **Material and Methods:** A five-year retrospective study of patients undergoing phacoemulsification with posterior chamber lens implantation complicated by anterior capsular tear was conducted. Review of the operative note was combined with examination of the actual videotaped surgery. The stage at which the tear was initially observed and when the extension of the tear occurred was identified as well as whether it remained limited or involved the posterior capsule. The necessity of anterior vitrectomy and the design and location of the intraocular lens implanted that were also analyzed. **Results:** A discontinuous anterior capsulorhexis or a break in the anterior capsular rim was observed in 21 eyes in 2646 cases, an overall incidence of 0.79%. Anterior capsular tears were initially identified during the injection of the OVD (1); capsulorhexis (13); hydrodissection (2); phacoemulsification (3); I&A (1); and during implantation of a prosthetic iris device (1). In 7 of the 13 tears identified during the capsulorhexis, the tear was effectively managed by redirecting the second edge of the "safety" capsulorhexis to incorporate the tear. In 14 eyes the tear in the anterior capsule extended into the zonules, 4 of which remained limited. Ten (10) tears extended around the equator and through the posterior capsule, occurring during the hydrodissection (1), phaco (2), I&A (1), and during IOL implantation in 6 eyes. An anterior vitrectomy was required in 4 of the 10 eyes in which the posterior capsule was involved. Endocapsular fixation of a single piece acrylic IOL was achieved in 18 eyes. Three (3) eyes required implantation of a 3 piece acrylic IOL placed into the ciliary sulcus. **Conclusion:** An extension of an anterior capsular tear can complicate the surgical procedure at any stage of the operation. An extension of the tear through the posterior capsule developed in nearly half of these eyes. The management of an anterior capsular tear can be challenging yet compatible with an excellent surgical outcome.