

Phacoemulsification of Hard Nuclei on a Single-Piece Foldable Acrylic Intraocular Lens.

Objectives: We describe a technique for phacoemulsification of hard (brunescent and white) cataract after implantation of a foldable acrylic posterior chamber IOL (PCIOL) between the hard nucleus and the posterior capsule. This new technique was compared with the standard phacoemulsification.

Methods: Interventional randomized case series of 64 eyes of 56 patients with senile mature white or hard brunescent cataract. The first 32 eyes were randomized for standard phacoemulsification using stop and chop technique and one-piece foldable acrylic PCIOL (soft haptics). The second 32 eyes were randomized for the same type of PCIOL implanted between the hard nucleus and the posterior capsule before starting phacoemulsification “the implant pre-phaco” group.

Results: In each group 2 eyes developed transient corneal edema. Iris phaco-burn developed in 2 eyes of the standard phacoemulsification group and one eye of the “implant pre-phaco” group. Posterior capsule rupture (PCR) with vitreous prolapse occurred in 3 eyes of the standard phacoemulsification group. In the “implant pre-phaco” group one eye developed PCR with no vitreous prolapse. The difference in PCR between the 2 groups was not statistically significant but the vitreous prolapse in the AC was significantly higher in the standard phacoemulsification group. IOL decentration or dropped lens fragments did not occur in either group.

Conclusion: The IOL behind the hard nucleus acts as barrier shield that covers and protects the posterior capsule and the anterior vitreous face. This could make phacoemulsification of hard cataracts safer.