

Primary Hydroexpulsion of posterior Dislocated Nucleus and Fragments during phacoemulsification

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Purpose: To assess the outcome of eyes that underwent hydroexpulsion and instantaneous anterior vitrectomy for nuclear fragments dislocated during phacoemulsification.

Patients and methods: retrospective assessment of case series. The study included 21 cases complicated with dropped nuclei during phacoemulsification that underwent instantaneous hydroexpulsion of the dislocated nuclei and anterior vitrectomy. Patients' demographic data, preoperative and postoperative vision and intraoperative and postoperative complications were recorded. The study was conducted in Cairo University Hospital (Kasr El Eini) between January 2010 and April 2018. Immediately when the nucleus passed through the posterior capsule into the vitreous cavity, the surgeons were instructed not to inject any fluid or air into the anterior chamber to avoid further pushing the nucleus backward in the vitreous cavity and to postpone anterior vitrectomy after nuclear fragment expulsion. Infusion cannula was applied 3.5 mm from the limbus in the inferior temporal quadrant. The infusion was opened and the corneal incision was opened by pressing its posterior lip to create fluid stream from the vitreous cavity to the anterior chamber. Once the nucleus appeared through the pupillary plane, the wound was widened with the keratome enough to accommodate the expressed nucleus (Video 1). Following nucleus extraction, triamcinolone was injected into the anterior chamber according to surgeon preference to enhance visualization of the vitreous. Anterior vitrectomy was done to clear the anterior chamber and pupillary plane. Sulcus Pc IOL was implanted in 17cases, Ac IOL was implanted in 4 eyes due to deficient capsule. Follow up period ranged from 8 to 24 months.

Results: Sixteen cases (76.2%) were operated by residents and fellows, 5 eyes by senior staff. Six eyes were myopic with axial length above 26 mm. Nuclear cataract grade 3 (LOCSIII classification) was recorded in 17 eyes, 4 eyes had nuclear grade 4 and cortical cataract. The ages of the patients ranged from 58 to 78, 12 cases were females and 9 were males. This technique succeeded in expression of 19 (90.4%) dropped nuclei, 2 cases required pars plana vitrectomy. One myopic eye (4.8%) with axial length 28 mm developed retinal detachment 3 weeks later. Another case (4.8%) developed intraoperative suprachoroidal hemorrhage during anterior vitrectomy after nucleus expression, which was aborted by immediate closure without intraocular lens implantation. Fundus examination revealed localized temporal suprachoroidal hematoma that was absorbed within 6 weeks and anterior chamber intraocular lens was implanted 2 weeks later. Two cases (9.5%) developed self-limiting hyphema related to transient

29th International Conference on **Insights in Ophthalmology**

June 17-18, 2020

hypotony. Transient corneal edema developed in 4 eyes (19%) that resolved within 1 week. Transient rise of IOP below 30 mmHg developed in 2 eyes (9.6%) that were controlled with anti-glaucoma drops that were discontinued within 1 week. No case developed endophthalmitis.

Conclusion: Primary hydroexpulsion can spare the patient a second vitrectomy operation. It can be done by the anterior segment surgeon without special training.

Biography

Khaled G Abu Eleinen is a renowned Ophthalmology Professor. Khaled G Abu Eleinen is working in Department of Ophthalmology, Faculty of Medicine, Cairo University, Cairo, Egypt and Department of Ophthalmology, Fayoum eye hospital, Fayoum, Egypt . He publishes many articles in reputed journals.