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DISPERSIVE VISCOELASTIC AGENT AS VITREOUS TAMPONADE IN SEVERE OPEN GLOBE INJURY

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We present a case of use of dispersive viscoelastic agent as intraocular tamponade in the treatment of a severe open globe injury. A 67-year-old female patient presented at Accident & Emergency room with a left eye (LE) open globe injury following trauma. The patient had a history of penetrating keratoplasty (PK) for keratoconus performed 21 years before, and two months earlier she had undergone corneal wound suturing on the transplanted corneal graft due to an other domestic accidental trauma, followed by pars plana vitrectomy and scleral fixation intraocular lens (IOL) implantation with Yamane technique one month later .

LE clinical examination showed a 270-degree opening of the PK graft flap, involving the entire superior and nasal sectors from 3 to 7 o'clock, corneal suture dehiscence, complete athalamia, significant hypotony, a nearly absent posterior chamber, and apparent total retro-IOL choroidal detachment. The best corrected visual acuity (BCVA) was no light perception. As preoperative prophylaxis systemic antibiotics (Ceftriaxone 2g/day) were administered. A surgical procedure was performed urgently using a Zeiss OPMI Lumera® 700 microscope (Carl Zeiss Meditec AG, Goeschwitzer Strasse 51-52, Germany) with a 3D visualization system, Ngenuity Alcon © (6201 South Freeway, Fort Worth, TX 76134-2001, United States). The PK graft flap was sutured with interrupted Nylon 10-0 sutures. Complete filling of the vitreous cavity was achieved with two 0.5 cc injections of dispersive viscoelastic, Viscoat Alcon © (Sodium Chondroitin Sulfate and Sodium Hyaluronate 40 mg) from the anterior chamber via open sky, followed by three additional 0.5 cc injections with 30 gauge needle via pars plana until normalization of the intraocular pressure (IOP).

The day after surgery the LE examination showed effective corneal suture, normal intraocular pressure, complete resolution of the choroidal detachment and retina attached in all sectors. The patient was prescribed postoperative medical therapy with topical antibiotics and steroids. She underwent weekly postoperative follow-up controls, with favorable postoperative progression, excellent maintenance of the suture, stable intraocular pressure, stability of Yamane scleral fixated IOL despite the serious trauma, and good control of intraocular inflammation. After one month from surgery BCVA raised to 1.0 LogMar.

Ideal substitutes for the vitreous body should provide effective tamponade, long-term biomechanical and biochemical functions, and should be easily injectable with fine needles. (1, 2) The use of medium-viscosity dispersive viscoelastic in this complex case allowed for complete filling of the intraocular spaces and can be considered as an option in extreme cases of open globe injury for effective intraocular tamponade.

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