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Evaluation of a new combined ophthalmic viscosurgical device in patients undergoing cataract surgery

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Statement of the Problem: Ophthalmic viscosurgical devices (OVDs) are viscoelastic solutions used in cataract surgery to create and maintain space in the anterior chamber of the eye during phacoemulsification and implantation of the intraocular lens (IOL). They can be classified into two general categories: cohesive and dispersive. Cohesive OVDs maintain the anterior chamber during the capsulorhexis and IOL implantation and dispersive OVDs protect corneal endothelium during the phacoemulsification. In general, it is necessary to use a dye prior to filling the anterior chamber with OVDs. The most used dye in cataract surgery is the Trypan Blue. Because they are separate substances, it is mandatory to perform two different surgical steps during the phacoemulsification. Combined OVDs are a recent innovation and they allow the execution of two surgical steps simultaneously. The purpose of this study is to evaluate the use of a new combined viscoelastic agent in patients undergoing phacoemulsification.

Methodology & Theoretical Orientation: A longitudinal and prospective study of 20 eyes of consecutive patients with cataract was conducted at the Hilton Rocha Foundation, Brazil. All patients underwent a complete ophthalmologic examination before the phacoemulsification. During the perioperative period, a combined solution containing the viscosurgical HPMC 2% with 0.0012% trypan blue was used to fill the anterior chamber and stain the anterior lens capsule simultaneously. The efficacy of capsule staining was analyzed.

Findings: Capsulorhexis was performed in all eyes without any difficulty. Filling of the anterior chamber and visualization of the anterior lens capsule were possible because of the HPMC and trypan blue, respectively. In the postoperative period there were no cases of toxicity or persistent corneal edema.

Conclusion & Significance: The combined solution containing the viscosurgical HPMC 2% with 0.0012% trypan blue has the ability to fill spaces and blush the capsule simultaneously, resulting in greater safety, greater speed, simplicity and convenience in cataract surgery.

Recent Publications

1. Livny E, Bahar I, Hammel N and Nahum Y (2018) 'Blue bubble' technique: an ab interno approach for Descemet separation in deep anterior lamellar keratoplasty using trypan blue stained viscoelastic device. Clin Exp Ophthalmol. 46(3):275–279.
2. Dada V K, Sudan R, Sharma N, et al. (2002) Trypan blue with a viscoelastic agent. J Cataract Refract Surg. 28:205–206.
3. Kayikcioglu O, Erakgun T and Güler C (2001) Trypan blue mixed with sodium hyaluronate for capsulorhexis. J Cataract Refract Surg. 27:970.
4. Melles G R J, de Waard P W T, Pameyer J H and Beekhuis W H (1999) Trypan blue capsule staining to visualize the capsulorhexis in cataract surgery. J Cataract Refract Surg. 25:7–9.

Biography

André Pellizzer Marcondes is a Pharmacist with specialization in Biochemistry. He works as Director of pharmaceutical companies with more than 30 years of experience in the sector. All your efforts and actions are directed towards the evolution, research and development of pharmaceutical products and processes, more focused on ophthalmology. He is passionate about technology and innovation and with a futuristic vision, in mid-2009 he decided to abandon the traditional work platforms definitively and began to work exclusively with his own system of organization, with the purpose of developing innovative processes and products, aiming for global reach.

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