

Regarding comparison of different techniques of cataract surgery in bacterial contamination of the anterior chamber in diabetic and non-diabetic population

Dear Editor,

We read with great interest the authors' recent report on pre-operative povidone-iodine and ofloxacin instillation in diabetics and non-diabetic patients prior to cataract surgery.^[1] The evaluation of antiseptic techniques is particularly important in diabetic patients who may have an increased predisposition to post-operative infection. Evaluating povidone-iodine in diabetic patients is particularly interesting because both can prove to be individually toxic to the cornea. We were interested if the authors did a systematic corneal evaluation as part of their pre-operative and post-operative examination as we did not notice this documented in the study?

Diabetes mellitus has been associated with corneal epitheliopathy, decreased corneal oxygen uptake, and altered corneal hysteresis with some evidence suggesting a positive weak correlation with elevated serum glucose levels.^[2,3] Povidone-iodine (5%) (PI) has also been associated with toxic corneal epitheliopathy including induction of epithelial cell death and delayed corneal epithelial healing.^[4,5] Following pars plana vitrectomy (PPV) for proliferative diabetic retinopathy in poorly controlled diabetics, we have noted a particularly high incidence of peri-operative corneal epitheliopathy. We have speculated that PI and poorly controlled diabetes mellitus may have a synergistic effect in compounding post-operative corneal epitheliopathy.

To evaluate this, a retrospective study was conducted of 68 patients who underwent PPV for proliferative diabetic retinopathy. Each patient had thorough pre-operative and post-operative corneal examination, including documentation of fluorescein staining pattern, tear-film breakup time, punctate epithelial erosions, and epithelial defects. All patients underwent pre-operative preparation with 5% PI to the eyelids, eyelashes, and by flushing the conjunctival fornices with mean contact time of 5 minutes. Fifty percent of eyes developed post-operative corneal epitheliopathy (34 eyes). The average HbA1c for the epitheliopathy group was 8.01% while the average for the non-epitheliopathy group was 8.44%, and this difference was not statistically significant ($P = 0.45$). There was no

statistically significant difference in surgical duration (mean 55 minutes) between patients developing corneal epitheliopathy and not developing corneal epitheliopathy, and there were no cases of endophthalmitis.

This study demonstrates a high incidence of corneal epitheliopathy in diabetic patients who underwent PPV for proliferative diabetic retinopathy. There was no correlation between glycosylated hemoglobin levels and corneal epitheliopathy. Further formal studies are warranted to fully investigate this. We would be interested in the authors' experiences of post-operative corneal evaluation and glycosylated hemoglobin levels from their study, if available.

Kevin Michael Wells¹, Kapil G Kapoor^{1,2}, S K Gibran¹

¹Department of Ophthalmology, University of Texas Medical Branch, Galveston, TX, ²Department of Ophthalmology, The Mayo Clinic, Rochester, MN, USA

Correspondence to: Dr. Kapil G. Kapoor, The Mayo Clinic, 200 First Street SW, Rochester, MN. 55905, USA. E-mail: Kaps2003@gmail.com

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