



WE WOULD LIKE TO THANK SRIDHAR AND ASSOCIATES FOR their interest in our recently published article on *Nocardia* endophthalmitis.¹ We agree with the readers' observations that exogenous and endogenous *Nocardia* endophthalmitis represent 2 different clinical entities. We did not deem it appropriate to discuss that in detail in our manuscript for want of numbers in the endogenous endophthalmitis subset.

With respect to the 3 cases of endogenous *Nocardia* endophthalmitis that we reported in our series, 2 cases grew *Nocardia* from the vitreous sample only, while 1 of them grew *Nocardia* from the subretinal space requiring a subretinal biopsy (clinically presenting with a subretinal abscess). None of them had any antecedent history of systemic illness, intravenous fluid administration, or an in-patient hospitalization course. We agree with the readers' point on postinjection upright head positioning after injecting amikacin intravitreally, and we follow the same protocol. We would once again thank the readers for their positive comments on our article.

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Comparing Outcomes of Phacoemulsification With Femtosecond Laser-Assisted Cataract Surgery in Patients with Fuchs Endothelial Dystrophy



EDITOR:

IN THEIR RECENT ARTICLE, YONG AND ASSOCIATES concluded that femtosecond laser-assisted cataract surgery

was superior to conventional phacoemulsification in eyes with Fuchs endothelial corneal dystrophy (FECD) based on lower postoperative corneal endothelial cell loss, "which translates to a lower risk of corneal decompensation."¹ We have serious concerns about the methodology of this study, and therefore about the conclusions drawn. As acknowledged by the authors, the design of their study was weakened by its retrospective nature, including variable follow-up, selection bias, and multiple surgeons with varying levels of experience. Key omissions in the article were defining the severity of FECD^{2,3} and explaining why 125 of 265 eyes with FECD were excluded. Did the excluded eyes all have intraoperative complications or could preoperative endothelial cell density not be measured?

To best answer the question being asked in their study, Yong and associates should have used a more appropriate outcome measure than endothelial cell density, which cannot be accurately measured in FECD.⁴ The authors stated that the diagnosis of FECD was made clinically by slit-lamp examination and defined by the "presence of confluent central guttata with or without corneal edema." By definition, when guttae have reached central confluence, there are no discernible central endothelial cells in images of the endothelium.⁵ So how did the authors quantify endothelial cell density in these eyes? And why did eyes with corneal edema not receive endothelial keratoplasty? Even when guttae are nonconfluent and endothelial cells are visible by specular⁶ or confocal microscopy, measuring endothelial cell density in these eyes is subject to significant variation.⁴ Sampling errors are introduced because of regional variation in endothelial cell density from the center to the periphery of the cornea. Furthermore, to estimate endothelial cell density when guttae are present requires a standardized analysis method with assumptions,⁴ because endothelial cell analysis methods commonly used in corneas without guttae⁶ will yield very different cell densities from different regions of the same image.⁴

Yong and associates did not report any details about their endothelial imaging and analysis other than the type of microscope. Investigators should report the region of endothelial imaging (central vs other), image quality, the number of images analyzed, the number of cells counted, the number of observers and interobserver variation, and whether images were randomized and masked when analyzed.⁶ Most importantly, investigators should report their specific image analysis method.⁶ Better outcome measures for this and other such studies of FECD would be progression to keratoplasty and objective indicators of progressive corneal edema, such as corneal thickness.^{2,3} The issues described therefore cast significant doubt over the conclusions made by Yong and associates.

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REPLY



IN THEIR COMMENTARY, DRs PATEL AND BARATZ QUESTIONED THE CONCLUSIONS DRAWN FROM OUR ARTICLE LOOKING AT THE BENEFITS OF femtosecond laser-assisted cataract surgery (FLACS) over conventional phacoemulsification in patients with Fuchs endothelial dystrophy (FED).¹

Drs Patel and Baratz had questioned our methodology and the reasons for the large number of patients that had to be excluded. Our study excluded 125 of 265 eyes with FED. Of these, 61 patients who underwent FLACS were excluded, whereas 64 patients who underwent conventional phacoemulsification cataract surgery were excluded from the study. Owing to the retrospective nature of the study, the majority of the excluded patients were excluded because they did not have available pre- and/or postoperative specular microscopy results.

However, the number of excluded patients in both groups was comparable.

Drs Patel and Baratz further questioned the use of endothelial cell density as an outcome measurement in our study, explaining that by the time guttae have reached central confluence, there are no discernible central endothelial cells to be imaged. However, the majority of the FED patients recruited in our study had early FED with varying cataract density. In the presence of clinically significant cornea edema, these patients would have been offered combined cataract surgery with endothelial keratoplasty instead. As such, most of our patients still had measureable residual endothelial cells captured centrally with specular microscopy. The study that was referenced, by Syed and associates,² referred to patients with advanced FED (grade 3 or 4, CCT > 700 μm or central endothelial cell count [ECC] < 350) in which central ECC could not be accurately captured. As we recognize the limitations of endothelial cell density in this group of patients, central corneal thickness was also measured in all patients.

Specular microscopy was performed on the central cornea with a minimum of 20 cells counted for all patients. The images were randomized, masked, and verified by the same 2 trained cornea consultants to ensure that they were adequately captured and poor-quality images were excluded from analysis. Our study found that none of the eyes that underwent FLACS eventually required keratoplasty by the end of the last follow-up period, whereas in the phacoemulsification group 1 eye progressed to pseudophakic bullous keratopathy (PBK) and was offered keratoplasty.

We recognize the limitations in our retrospective study. However, we do believe that our study provides adequate evidence to suggest the usefulness of FLACS in a selected group of FED patients. This may potentially help delay their need for an endothelial keratoplasty, which is important, especially when corneal tissue may sometimes be difficult to obtain.

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