Correspondence

Outcomes of Air Injection Within 2 mm Inside a Deep Trephination for Deep Anterior Lamellar Keratoplasty in Eyes With Keratoconus

EDITOR:

WE WOULD LIKE TO CONGRATULATE BUSIN AND ASSOCIates for their attempt at standardizing deep anterior lamellar keratoplasty in their work titled "Outcomes of Air Injection Within 2 mm Inside a Deep Trephination for Deep Anterior Lamellar Keratoplasty in Eyes With Keratoconus."[1] The manuscript highlights the importance of performing pneumodissection in the deep stroma, which had already been elegantly described by the same group in a previous paper using intraoperative anterior segment optical coherence tomography.[2] The same concepts have been applied in 2 similar techniques used by Ghanem and associates[3] and our group,[4] in which a diamond blade incision set at a specified depth is used as a guide for reaching a deep stromal plane during pneumodissection, which is performed after advancing the air injection cannula toward the central cornea. These techniques rely on the assumption that as the cannula advances, the cannula remains in the deep cornea. In a section of the manuscript, the authors imply that in the techniques described by Ghanem and associates and Knutsson and associates, the pachymetric measurements for the precalibrated diamond knife incision are performed using the "use of central or paracentral pachymetric values." In our opinion, this phrase is imprecise, as the pachymetric measurements are indeed paracentral (located approximately 1 mm inside the trephination groove) but are localized in the precise area in which the precalibrated incision will be made. The main novelty of the approach described by Busin and associates is the concept of performing pneumodissection with a slight advancement of the cannula (only 2 mm) starting from a deep pachymetry-guided peripheral trephination. It would be interesting to compare the 2 different approaches in a prospective study involving only inexperienced surgeons in both a laboratory and clinical setting in order to establish which techniques can yield higher success rates of bubble formation.

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REPLY

WE THANK KNUTSSON AND ASSOCIATES FOR THEIR INTEREST in our work. In their letter they remark that "the authors [we] imply that in the techniques described by Ghanem and associates and Knutsson and associates, the pachymetric measurements for the precalibrated diamond knife incision are performed using the 'use of central or paracentral pachymetric values.'"

It is somewhat hard to understand the meaning of this remark, as "using the use" remains rather obscure. However, we can only agree with them when they state that reaching a depth as close as possible to the endothelium is the best guarantee for the success of pneumatic dissection. We also agree with them about a possible study to evaluate whether a deep trephination can prove superior, especially in terms of technical ease, to other approaches, including paracentral measurements and the use of precalibrated blades.

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SEE THE ORIGINAL ARTICLE FOR ANY DISCLOSURES OF THE authors.

The Prevalence of Hydroxychloroquine Retinopathy and Toxic Dosing, and the Role of the Ophthalmologist in Reducing Both

EDITOR:

THE RECENT EDITORIAL BY BROWNING[1] BRINGS WELCOME attention to the ophthalmologist's role in screening for hydroxychloroquine (HCQ) toxicity and the need for careful dosing. However, we are concerned that it perpetuates incorrect information and omits important new evidence.

The concept that ideal body weight should be used to guide HCQ therapy comes from animal studies of very high dosing (primarily in rats) by McChesney[2] that have been cited by Browning and others to suggest that HCQ is not stored in fat. Actually, McChesney's paper states that "…the concentrations [of HCQ] in skin and fat were just below those of muscle,"[2] indicating that the drug is stored to a similar level in all of these tissues. McChesney also reported that the distribution of chloroquine in monkeys is essentially equivalent in muscle, skin, and fat.[3] We are not aware of any published evidence that supports the notion that obesity is a risk factor for HCQ retinopathy in humans. In fact, our study of 2361 long-term users of HCQ demonstrated that obese patients have a slightly lower risk of toxicity, and that real body weight is more predictive of retinopathy than ideal weight over the full range of body mass index (BMI) from 15 (underweight) to 35 (obese).[4] Moreover, a prospective study of 300 patients showed that regular body weight, but not ideal body weight, correlates with blood levels of HCQ.[5] Using real weight is simpler than performing unnecessary ideal body weight calculations, and we strongly urge that patients stay below a daily dose of 5 mg/kg.

The editorial also fails to alert readers to key information, including the recent publication of updated 2016 American Academic of Ophthalmology (AAO) recommendations for screening HCQ retinopathy.[6] This document emphasizes the importance of daily dose by weight (<5 mg/kg real weight) and demonstrates how the risk rises dramatically with higher doses and prolonged usage of the drug. Beyond dose and duration, the only proven risk factors for toxicity are renal disease and concurrent usage of tamoxifen, so few patients are at "high risk" at the time they begin HCQ. Thus, there is little reason to ignore the recommendation that annual screening can be deferred for 5 years in most patients. Of greater importance, ophthalmologists should be informed about racial differences in the pattern of HCQ toxicity. Asian patients typically show early damage outside the central macula (near the arcades) and can develop serious toxicity before it would be recognized by tests that focus only on the parafovea (10-2 fields or central macular OCT). Wider fields and imaging studies are needed for these patients.

The AAO guidelines define a new standard of care. Routine testing should in general include both automated visual fields (most sensitive) and spectral-domain optical coherence tomography (most specific), along with other confirming modalities, where available.

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REPLY

DRS MELLES AND MARMOR CLAIM THAT HYDROXYCHLOROquine is stored in fat and that actual body weight should be used to calculate maximal safe dosing in patients. In so doing, they incorrectly quote from cited literature, fail to cite contradictory literature, and change their minds from earlier publications without explaining why. Their reading of the literature is erroneous, and their advice to clinicians on safe dosing is dangerous for the short, obese patient.