

Bevel tip position and corneal damage during phacoemulsification

Recently, Faramarzi et al.¹ reported on bevel-up versus bevel-down phaco tip during phacoemulsification. We disagree with the authors that it was the first study to consider this subject. Other authors have published studies considering the consequences of phaco needle bevel position on corneal endothelial cells during phacoemulsification^{2,3} and the effects of bevel position and ultrasound waves on corneal endothelium, using an artificial model.⁴ No differences based on bevel position were detected in these studies.

We published an article about tip position during phacoemulsification⁵ that involved a randomized paired eye and showed a significantly greater endothelial corneal cell (ECC) loss in phacoemulsification with the conventional bevel-up tip position than with the bevel-down tip position. Three months after surgery, the mean corneal endothelium cell loss was 6.9% in the bevel-up group and 3.6% in the bevel-down group. At 6 months, the difference between the groups was essentially the same. The mean cell loss was 10.8% in the bevel-up group and 7.6% in the bevel-down group (Figure 1). Comparison of ECC by the Tukey studentized range test showed a statistically significant difference between the groups during the postoperative period (Table 1).

Using the stop-and-chop technique, Faramarzi et al.¹ concluded that better occlusion of the phaco tip with the bevel-down position and fear of posterior capsule damage may force placement of the phaco tip close to the posterior surface of the cornea, leading to endothelial cell damage. We used the phaco chop technique⁵ and concluded that the bevel-down tip position had fewer negative effects on the corneal

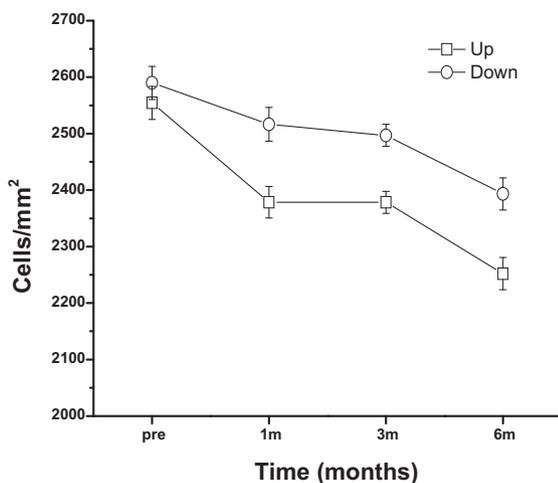


Figure 1. Mean endothelial cell count in bevel-up group and bevel-down group over time.

Table 1. Comparison of endothelial cell count at all time points studied.

Period	Group		P Value
	Bevel-up	Bevel-down	
Preoperative	2554.5 ± 385.6	2589.8 ± 385.3	.404
Postoperative (mo)			
1	2378.4 ± 461.4	2516.5 ± 421.1	.032
3	2378.4 ± 351.0	2496.9 ± 413.0	.003
6	2252.0 ± 310.7	2393.2 ± 321.5	.002
Mean ± SD			

endothelium and facilitated attachment of the lens fragments.

We hope these comments stimulate further investigations of these controversial results.

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Reply: We thank Drs. Coelho, Raskin, and Velasco de Cruz for informing us about their study published as a letter in the journal *Ophthalmology*. It was our failure not to mention the results of their study in our article. However, the methods and the results are not presented in detail, making it impossible to compare their findings with ours. Therefore, we cannot explain the paradoxical outcomes observed in their study. Conducting other studies with larger cases may clarify this issue.—*Amir Faramarzi, MD*

Here's a good tip

How ironic that 2 articles evaluating tips and bevel-down phaco appeared in the same issue of the journal and arrived at exactly opposite conclusions.^{1,2} Faramarzi et al.¹ compared bevel-up and bevel-down