

LETTER TO THE EDITOR

Mindfulness for Cataract Surgeons

With advances in techniques and technology, cataract surgery outcomes improve. As Robert H. Osher, MD, recently pointed out, however, surgeons' attention to detail remains crucial to achieving excellent technical outcomes predictably on the first postoperative day.¹ Today's phaco machines are far more advanced than the original units, and both ultrasound delivery and fluidics are therefore much more efficient. Once a major problem, surge is no longer routine. If, however, we surgeons fail to understand phaco parameters and titrate them to match the eye and type of cataract on which we are operating, then surge, endothelial and iris damage, postoperative IOP spikes, and corneal edema may result.

Dividing the cataract procedure into phases such as trenching, nuclear division, and cortical removal allows us to vary our phaco parameters for each stage. Trenching, for instance, requires adequate ultrasound energy but not a high vacuum level or aspiration flow rate (AFR). Nuclear fragment removal, in contrast, may demand high vacuum but a modest AFR and infusion rate. As exposure of the posterior capsule increases, the risk of its aspiration does as well, particularly if the AFR and vacuum level are high. We can consider employing a step-down technique, where the AFR and vacuum level are lowered during removal of the last nuclear piece.

Our use of interrupted ultrasound energy also merits consideration. We must use only as much of the preset amplitude of longitudinal or torsional ultrasound as necessary and employ burst or pulse mode judiciously. Doing so can prevent thermal damage, allow the AFR to work in between bursts of energy, and help keep nuclear material at the phaco tip. This, in turn, makes lower fluidic parameters more effective irrespective of the phaco machine.

A growing number of us are paying more attention to intraoperative IOP. The higher the infusion pressure (bottle height/IOP) in the eye, the greater the IOP. This can be especially deleterious to eyes with preexisting glaucoma, high myopia, or other retinal vascular conditions.

To summarize, we always must evaluate closely what we are doing, even when performing as established and safe a procedure as cataract surgery.

1. Osher RH. Thinking through the phaco. *J Cataract Refract Surg*. 2023;49(6):553-555.

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