

# Letters

## Thoughts on Big-Bubble DALK

In response to “Big-Bubble DALK: Is It Right for Your Practice?” (*Clinical Update*, October), EyeNet received this letter.

In 2007, after 17 years of dealing with the myriad of problems associated with penetrating keratoplasty (PK), I converted to deep anterior lamellar keratoplasty (DALK) after attending a two-day course with Drs. Enrique Malbran, Donald Tan, and Frank Price. This was a watershed moment for me and led to a paradigm shift in my treatment of keratoconus, pellucid marginal

degeneration, LASIK- or RK-induced ectasia, corneal dystrophy, and scars.<sup>1</sup>

My partner, Daryl Kaswinkel, MD, and I currently perform large diameter (8.5 to 10 mm) DALK for these conditions. For astigmatism control, we utilize a 24-bite running suture adjusted under a Mastel intraoperative keratometer. We attempt a big bubble and, when required, convert to a pre-Descemet’s dissection technique, leaving little residual stroma. We’re now able to successfully manage micro- and even macroporations. Our conversion rate to PK is less than 5 percent.

Yes, the learning curve is long and challenging. Yes, each procedure is time-consuming and requires a dedicated team. Yes, like all tissue and organ transplantation, DALK is very poorly reimbursed.

Despite these barriers, the benefits of DALK, such as faster optical rehabilitation, are undeniable. Suture-out astigmatism is generally less, more regular, and easier to manage; and if it is of large magnitude, a wedge resection in the graft-host interface located far outside the optical zone can yield dramatic results. The occasional instances of stromal rejection are far easier to reverse; endothelial rejection is impossible; and, since recipient endothelial cells are retained, there no

longer is the inevitable median 70 percent endothelial cell loss at five years when using donor endothelium.<sup>2</sup> There is also less comorbidity from steroid-induced glaucoma and cataract.

This adds up to enhanced DALK graft longevity, easier postop graft maintenance, and a dramatic reduction in patients with clear grafts who cannot wear contacts and are not refractable due to irregular astigmatism. Another bonus—if the surgeon is both DALK and DMEK capable—is that one donor can be used for two recipients, further increasing the donor pool.<sup>3</sup>

There were 46,684 corneal transplants performed in the United States in 2012.<sup>4</sup> Endothelial keratoplasty (DSAEK, DMEK) made up 23,049 transplants, and PK comprised 21,422. Despite all the benefits of DALK, only 751 of these were performed in 2012—up only slightly from 2011, when 648 were reported. Many of the PKs done will not last a lifetime, will be associated with additional ocular comorbidity, and will be repeated at significant cost to the patient and society.<sup>5</sup>

We passionately believe that with education, com-



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mitment, and more appropriate reimbursement, the conversion to DALK, like the conversion to Descemet’s stripping automated endothelial keratoplasty (DSAEK), will occur.

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1 Sutphin JE et al. *Am J Ophthalmol*. 2009;148(5):630-631.

2 Cornea Donor Study Investigator Group. *Ophthalmology*. 2008;115(4):627-632.

3 Heindl LM et al. *Ophthalmology*. 2011;118(2):294-301.

4 2012 Eye Banking Statistical Report. Washington, D.C.: Eye Bank Association of America; 2013:67.

5 Tan DT et al. *Ophthalmology*. 2008;115(6):975-982.

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