The preference of surgeons for a combination of manual and vitrector capsulorhexis techniques is due to the elastic nature of the infant anterior capsule and the high risk for peripheral extension, especially in cases of mature cataracts. In 2002, Nischal suggested a 2-incision push-pull capsulorhexis for pediatric cataract surgery. Later, Hamada et al. introduced their 5-year experience with the 2-incision push-pull technique of anterior and posterior capsulorhexes for pediatric cataract surgery. Although it was a great success for capsulorhexis in children, the shape and size of the capsulorhexis was not always as predicted by the surgeon. Recently, I described a technique for anterior and posterior continuous curvilinear capsulorhexes in pediatric cataract surgery making 4 small arcuate incisions in the boundaries of the intended capsulorhexis and then grasping the center of each incision and pulling it to the center. In this way, a well-centered, ideal-sized, round capsulorhexis can be performed even in infants with hypermature cataracts. This technique is simple, safe, and reliable, and the surgeon has minimal emotional stress over the extension of the capsulorhexis.

As the authors mentioned, a survey of pediatric anterior capsulotomy preferences of cataract surgeons worldwide might be more informative for the readers of this popular journal if it contained these recent developments in pediatric capsulorhexis techniques.

Mehrdad Mohammadpour, MD
Tehran, Iran

REFERENCES

REPLY: We appreciate Mohammadpour’s interest in our article and congratulate him on his report of 10 eyes in 10 children using a modified manual continuous curvilinear capsulorhexis (CCC) technique. In our survey, we included international as well as domestic members of the American Society of Cataract and Refractive Surgery and the American Association for Pediatric Ophthalmology and Strabismus. We hope that in the future we can present a truer worldwide snapshot of surgeon preferences by reaching more international ophthalmologists.
Mohammadpour mentions that surgeons used a combination of the vitrectorhexis and manual CCC techniques. The surgeons actually used one or the other depending on the age of the patient. The vitrectorhexis is the most common capsulotomy technique for us when operating on children in the first 3 or 4 years of life. After that, the manual CCC is preferred by most respondents and by us. All manual CCC techniques are included when a surgeon chooses the CCC preference answer in our surveys. We have recently reported our results comparing manual CCC and vitrectorhexis in 339 pediatric eyes.1

As correctly pointed out, it is the fact that the pediatric anterior capsule has twice the extensibility and 5 times the tensile strength of the elderly adult capsule that has made alternatives to the standard CCC technique necessary.2 The 2-incision push-pull (TIPP) capsulorhexis, popularized by Nischal,3 should be credited to Auffarth et al.4 who first reported it in 1994 while working in Dr. David Apple’s laboratory at the Storm Eye Institute. They used it in rabbits in the laboratory and recognized that the elasticity of the rabbit capsule resembled that in the pediatric human capsule. Their article stated that this technique was a “model for pediatric capsulotomy.” One of us (M.E.W.) has used the TIPP capsulorhexis since being introduced to it by Auffarth 13 years ago. We do not use it often, however, for the reasons mentioned by Mohhammadpour. We will definitely try the 4-incision capsulorhexis. Any innovation that can make the pediatric manual CCC easier and more controlled is welcomed.—M. Edward Wilson, MD, Rupal H. Trivedi, MD, MSCR, Luanna R. Barthomew, PhD

REFERENCES

Combined microphakonit and 25-gauge transconjunctival sutureless vitrectomy

We congratulate Hwang et al.1 on their excellent article regarding combined phacoemulsification and 25-gauge transconjunctival sutureless vitrectomy (TSV25). We would like to report our experience with TSV25 combined with 700 μm microphakonit.

For cataract removal, we modified the instruments used in conventional bimanual phacoemulsification or phakonit.2,3,4 In this technique, we first perform microphakonit using 700 μm instruments. Two clear corneal incisions are made with customized knives. A capsulorhexis is made with a 26-gauge needle, followed by gentle hydrodissection and nucleus rotation. The nucleus is then emulsified using the 700 μm microphakonit irrigating chopper connected to the infusion line of the phaco machine and the 700 μm sleeveless microphakonit tip connected to the aspiration line. Cortical cleanup is done with the 700 μm bimanual irrigation/aspiration set. Gas-forced infusion with an air pump is used during the entire procedure.5

At the end of surgery, the incisions, which are small and stable, are self-sealing and able to withstand high intravitreal pressures during vitrectomy without leakage, chamber shallowing, or iris prolapse (Figure 1). The problem of reduced globe resistance and wound instability during infusion cannula insertion, which Hwang et al. mentioned, is not encountered with this technique. Therefore, unlike the earlier TSV25 technique, in which the infusion cannula is inserted before phacoemulsification, we can insert the infusion cannula after the completion of surgery. The main-port cataract incision also does not have to be sutured, unlike in conventionally performed combined coaxial phacoemulsification with vitrectomy.

Thus, this combination of microphakonit with TSV25 makes the combined procedure more rapid and minimally invasive and may be a very useful

Figure 1. Self-sealing microphakonit cataract incisions withstand high intravitreal pressure during vitrectomy without leakage, chamber shallowing, or iris prolapse.