CONCLUSION

Corneal transplantation in children is challenging in many ways. These challenges can be divided into preoperative, intraoperative, and postoperative. Preoperative challenges arise from the fact that, typically, both a child and his or her parents are more anxious about the procedure than would be an adult. Additionally, obtaining preoperative data on children is much more difficult than doing so on adults. Checking visual acuity may take seconds in an adult but is a more involved process in a child. Some younger children may even require assessment of visual eyoked potentials for the best evaluation.

Intraoperative challenges arise in part from the fact that children's corneas and anterior segments are smaller. This crowding effect can make the surgical procedure more complicated. Children's corneas also are thinner and more pliable than those of adults, resulting in more difficult surgery. They have decreased scleral rigidity, which can lead to intraoperative collapse of the scleral wall and a deformed globe. Proper suturing of the donor tissue might be affected, and suprachoroidal hemorrhage might ensue. A child's iris is more adhesive than is an adult's and can adhere to the posterior cornea and the wound. Patients with congenital or traumatic abnormalities may have significant anterior segment abnormalities, which will add to the difficulty of the surgical procedure. Finally, the vitreous is more tenacious in children; the lens and the iris may move forward during surgery, leading to dramatic and spontaneous extrusion of the lens.

Postoperatively, children may develop a severe inflammatory response. Fibrin can exude from the iris and make the assessment of the anterior chamber or retina difficult. A strong immune reaction in children makes them more likely to experience endothelial graft rejection or graft failure. Because wound healing is faster in children than in adults, the sutures can erode and become vascularized and then infected. To minimize both astigmatism and infection, sutures must be removed

earlier than in adults. Because examining children in the office may prove difficult, the physician may need to obtain information through multiple visits, to rely on suboptimal examination, or to perform an examination under anesthesia. Children cannot communicate such problems as pain, loss of vision, or other symptoms. They depend on their parents to "guess" their problems, take them to emergency rooms or eye appointments, and apply their medications.

Children also are more likely to traumatize their graft by simply rubbing or accidentally injuring their eyes. The wound can be easily stressed and split open. Many surgeons choose a graft that is 0.5 mm larger than the trephination site to obtain good closure.

A crucial aspect of postoperative care is amblyopia management. The operation is only the first step in a long series of interventions to treat amblyopia. However, the surgery itself can be amblyogenic in that the patient will need postoperative patch for an extended period. In addition, if the graft is edematous or a high refractive error is induced, amblyopia will develop. Refraction must be performed by retinoscopy, and the refractive error must be corrected as soon as possible. Exuberant rejection is the final factor that makes postoperative care difficult.

No matter how advanced techniques become, there are three fundamental principles will remain unchanged.

1. The parents of the child must be included in all decision making and therefore must be fully informed.
2. If the ocular tissues of the child are treated like those of an adult's, failure will always be a real possibility.
3. Visual rehabilitation after surgery cannot be ignored.