

SURGICAL APPROACHES TO GLAUCOMA IN AFRICA



Enormous challenges exist, but pragmatic advances are being made.

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Africa has a high prevalence of glaucoma, with the most common type being primary open-angle glaucoma. Surveys of Africa's population of patients older than 40 years suggest that the prevalence of glaucoma averages from 4% to 5% in Southern and Eastern Africa and 6% to 8% in West African countries.¹ Africans are approximately 4% to 5% more prone to glaucoma development than Caucasians.²⁻⁴ In these studies, primary open-angle glaucoma has been reported to have a prevalence of 70% to 75%.¹⁻⁴ According to population-based studies in Africa—primarily in Ethiopia and Nigeria—the prevalence of pseudoexfoliative glaucoma ranges from 5.1% to 7.7% in patients older than 40 years,⁵⁻⁷ a value that is considerably higher than that reported in African Americans.

Most countries in Africa have low literacy levels and low standards of living, which may contribute to patients' late presentation, poor compliance, and erratic attendance at follow-up. Additionally, Africa has a shortage of ophthalmologists, especially in rural areas where most of the population lives. The few ophthalmologists who are available are not well supported with the infrastructure to appropriately manage glaucoma. Other groups of eye care workers are engaged in the diagnosis and treatment of eye diseases, including glaucoma. Because appropriate referral

systems are not functional in most places, these providers end up managing risky forms of glaucoma that, in normal situations, would be managed by glaucoma specialists. Cataract blindness, which is usually fully treatable by simple surgery, has yet to be tackled, and the cataract surgical rate for most African countries is still far below 1,000 surgeries per 1 million residents per year.

GLAUCOMA SURGERIES

Over the past decade, several African countries have experienced a sharp increase in the number of well-trained glaucoma specialists; these individuals have championed the improvement of surgical techniques.

Trabeculectomy. Trabeculectomy has remained the primary surgical approach due to its markedly low cost and high efficacy. The best-

practice technique of trabeculectomy with antimetabolites and releasable sutures has been standardized and taught to residents and other ophthalmologists in many settings in Africa. This approach is encouraged as a first-line treatment in many cases, as availability, affordability, and patient compliance with medical treatment is not guaranteed. Additionally, the management of postoperative complications is well understood and practiced.

Drainage devices. Most centers with glaucoma specialists have become referral sources for the relatively rare cases of pediatric glaucoma, which are managed with goniotomy or trabeculotomy. Glaucoma drainage devices are frequently used in cases in which trabeculectomy has failed or is likely to fail. The most frequently used drainage device is the Ahmed Glaucoma

AT A GLANCE

- ▶ Africa has a high prevalence of glaucoma, with the most common type being primary open-angle glaucoma.
- ▶ Glaucoma management remains a major challenge in Africa due to the high prevalence of the disease, poverty, a shortage of ophthalmologists, and insufficient infrastructure.
- ▶ A growing number of African glaucoma specialists are working to champion appropriate and practical methods of glaucoma surgery.

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Valve (New World Medical). However, widespread use of drainage devices is hampered by their cost. One promising low-cost alternative is the non-valved Aurolab Aqueous Drainage Implant (Aurolab), but this device has not yet been introduced in Africa.

Cataract and glaucoma surgery. In Africa, it is common to encounter patients with concomitant cataract and glaucoma. Phacoemulsification is rare in Africa, so, when combined cataract and glaucoma surgery is indicated, small-incision cataract surgery plus trabeculectomy is the preferred approach. I have observed many African colleagues who possess excellent methods for performing this procedure. However, good

microscopes with cameras and video capability are hard to find in Africa, and this hinders the large-scale teaching and sharing of surgical techniques and modifications.

SLT. The use of selective laser trabeculoplasty (SLT) is growing in Africa, and the initial reports are encouraging. Several studies are under way to determine the indications and efficacy of SLT in this setting. In my opinion, even if the SLT lasers can be accessed and maintained, we still face the challenge of whether the procedure will be singularly effective in the majority of relatively young glaucoma patients who present late and with very high

IOP. This is assuming that one procedure is preferred for patients with unreliable follow-up. The method can still gain popularity as an addition to medication (to reduce the number of drops) or to filtration surgery, as is happening in other parts of the world.

MIGS. The introduction of micro-invasive glaucoma surgery (MIGS) in Africa has had minimal impact, regardless of its advantages over trabeculectomy. This is due first and foremost to the cost of MIGS procedures. A few ophthalmologists in large cities have reported some limited experience with MIGS, but its use has not been embraced in Africa as a whole.

CONCLUSION

Glaucoma management remains a major challenge in Africa due to the high prevalence of the disease, poverty, a shortage of ophthalmologists, and insufficient infrastructure. A growing number of African glaucoma specialists appear to be pragmatic in championing the most appropriate and practical methods of glaucoma surgery. Trabeculectomy remains the preferred approach in most instances, other than cases in which it has previously failed or is likely to fail and in pediatric glaucoma. ■

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