

ON A MISSION



A surgical approach helps provide consistent glaucoma results in challenging settings.

BY CATHLEEN M. McCABE, MD

Cataract surgeons have the ability to significantly improve quality of life for patients and their families with a relatively quick, minimally invasive surgery that has a rapid and predictable recovery. One of the most rewarding aspects of my career has been my participation in medical missions providing cataract surgery in less developed countries.

In the short-term mission setting, it is a greater challenge to address chronic diseases such as glaucoma. Although we often are able to bring glaucoma medications with us on these trips, the benefits of these IOP-lowering medications are limited by the ongoing need and limited donated supply.

SURGICAL GLAUCOMA CARE

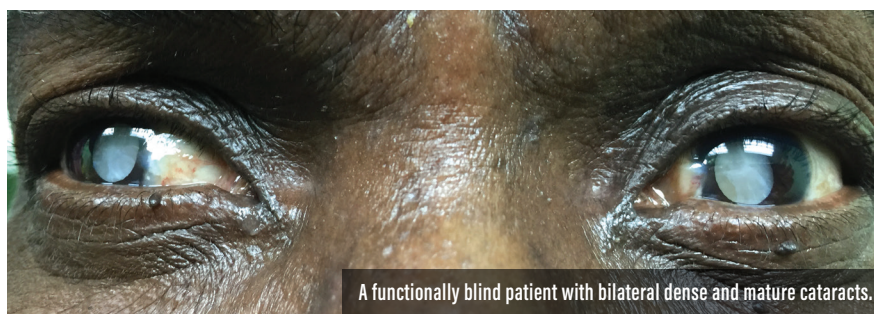
Because limited information is available regarding the staging of disease for patients in the mission setting, the ideal glaucoma intervention would be safe, have minimal postoperative management considerations, and be effective over a wide range of disease severity.

Surgery in a less developed country often means adapting to limited and unfamiliar equipment and resources. The microscope may be older and can have less-than-ideal optics and illumination. A language barrier can make patient compliance with positioning during surgery more challenging. Under these circumstances, an intuitive and elegant procedure is more likely to be successful for the patient and less stressful for the surgeon.

Over the past year, I have had the opportunity to perform such



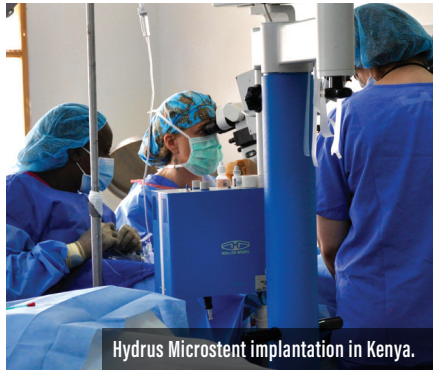
Patients waiting for postoperative day 1 exams after cataract surgery in Kenya.



A functionally blind patient with bilateral dense and mature cataracts.



Casey and Max McCabe assisting a young patient immediately after removal of a cataract.



Hydrus Microstent implantation in Kenya.



Congenital cataract in St. Vincent.



Traumatic cataract removal with battery-powered, handheld vitrector in Kenya.



Intraoperative photo of extraction of a mature cataract.

BY THE NUMBERS

15%

Percentage of cases of avoidable blindness caused by glaucoma in the least developed countries¹

1:10,000

Ratio of ophthalmologists to people in Europe²

12.3%

1:1 million

Ratio of ophthalmologists to people in Africa²

1:400,000

Ratio of ophthalmologists to people in India²

Percentage of cases of avoidable blindness caused by glaucoma worldwide¹

Number of people expected to have glaucoma in a population of 1 million²

10,000 to 20,000

1. World Health Organization. Causes of blindness and visual impairment. <http://www.who.int/blindness/causes/en/>. Accessed January 9, 2018.
2. World Health Organization. Glaucoma is second leading cause of blindness globally. <http://www.who.int/bulletin/volumes/82/11/feature1104/en/index1.html>. Accessed January 9, 2018.

an intervention. I have successfully implanted the Hydrus Microstent (Ivantis), a microinvasive glaucoma surgery (MIGS) device, in patients with glaucoma in two countries, St. Vincent and the Grenadines and Kenya. One-day postoperative IOP control in these cases has been encouraging, and analysis of a company registry of data on all Hydrus devices implanted worldwide suggests that the device can provide benefit in a wide spectrum of severity of disease.

HOW IT WORKS

The Hydrus has a trimodal mechanism of action: It provides a port through the trabecular meshwork, expands Schlemm canal, and allows

improved flow through the windows in the stent to the collector channels and distal venous system. It is loaded in an insertion device with a gentle curve that mimics the curve of the stent.

After scoring the trabecular meshwork with the tip of the stent, the surgeon rotates a wheel on the body of the inserter to deliver the device. This is a smooth and intuitive procedure that enables viewing of the entire length of the stent as it passes through Schlemm canal, ensuring proper placement of the device. There is no guesswork as to whether or not the surgery resulted in successful implantation. With 3 clock hours of the canal scaffolded, the likelihood of spanning an area containing multiple collector channels is high.

CONCLUSION

Mission trips can improve the lives of patients with limited resources and access to care. That in itself is rewarding for those involved as volunteers. These trips also provide opportunities for surgeons to learn new skills and improve their flexibility and adaptability under less-than-ideal circumstances. I always feel that I have gained as much as I have given during these trips. ■

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