



TECHNICAL TALK

MICROSTENT REVISION SURGERY SIMPLIFIED



My key considerations and preferred surgical approach.

BY IQBAL IKE K. AHMED, MD, FRCSC

In August 2018, Alcon voluntarily recalled the CyPass Micro-Stent from the market due to safety issues based on 5-year data from the post-approval COMPASS XT study. The study results indicated a higher rate of endothelial cell loss (ECL) in patients who underwent cataract extraction plus CyPass implantation compared with cataract extraction alone.¹ The findings suggested a correlation between CyPass implant depth and ECL: Stents positioned too far forward into the anterior chamber and near the cornea were associated with ECL.

When the CyPass device was withdrawn, surgeons were left questioning how to manage patients with existing CyPass implants. In response, the ASCRS CyPass Withdrawal Task Force issued a report on how best to manage these patients. Recommendations included regular monitoring of these patients and repositioning, removal, or proximal end trimming in patients with corneal decompensation. The CyPass device can be repositioned or trimmed to allow shorter anterior chamber exposure, thus preventing further ECL. Trimming the implant requires a cutter with increased precision and control, and this was the



Figure 1. The 19-gauge Ahmed Micro Stent Cutter.

basis for the development of the MST Ahmed Micro Stent Cutter (Figure 1).

KEY CONSIDERATIONS FOR CYPASS REVISION SURGERY

Although some CyPass devices have been removed, this approach may be traumatic to surrounding tissue and introduces the risk of iridodialysis, cyclodialysis, and bleeding. Thus, my preferred approach is to trim the implant. Trimming retains the functions of the implant: fluid drainage and IOP lowering.



Courtesy of MicroSurgical Technology

Gonioscopy should be performed on patients with an indwelling CyPass device, with attention to device position and the following parameters: presence or absence of contact between the corneal endothelium and the CyPass device, position of the device lumen anterior to Schwalbe line, and number of retention rings visible in the anterior chamber.

Intervention to protect the corneal endothelium may be considered if there is intermittent or persistent contact between the CyPass and the

Courtesy of Iqbal Ike K. Ahmed, MD, FRCSC, and Georges Durr, MD, FRCSC

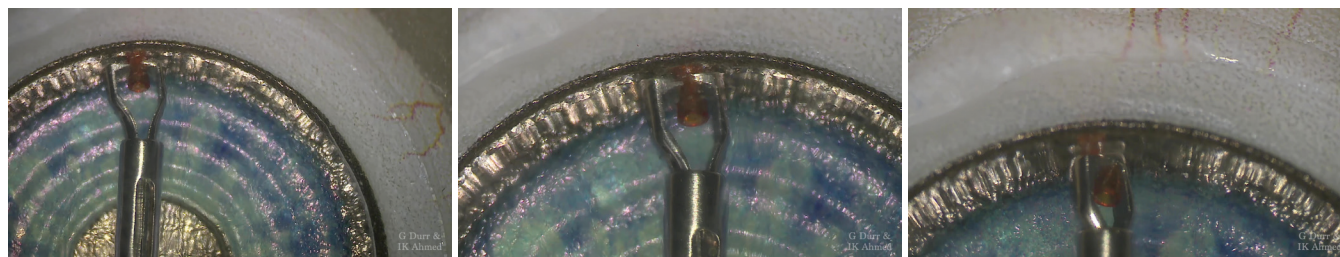


Figure 2. The Ahmed Micro Stent Cutter in use in a model eye.

corneal endothelium, resulting in localized endothelial opacification and/or edema or a significant progressive decrease in endothelial cell density that appears related to CyPass positioning or stability.

CASE STUDY AND SURGICAL STEPS

Recently, a 75-year-old patient who was 10 years post CyPass implantation presented to me with a normal IOP of 11 mm Hg. The patient was medication-free at the time and had 20/25 vision. On examination, I observed localized edema around the implant.

The CyPass was positioned anterior to Schwalbe line. Two rings were visible by gonioscopy. The implant was positioned more anteriorly than preferred, and there was clinical evidence of localized corneal decompensation. This met the ASCRS Task Force's recommendations for intervention because of the presence of clinical corneal changes. Had there been no clinically significant evidence of corneal decompensation, I would have just monitored the case.

To prevent progression, I trimmed the CyPass implant at the proximal end, following the steps below.

- First, I made a small corneal incision. I like to make my incision temporally so that I can come straight through the wound and not at an angle. I prefer smaller incisions, as they minimize the trauma that can be associated with larger wounds.
- I injected a dispersive OVD to create space and protect the cornea.
- I visualized the implant's angle

using a gonio-prism. The angle of approach is important to avoid moving the CyPass stent to the side and causing unnecessary trauma.

- I placed the 19-gauge Micro Stent Cutter into the anterior chamber through the corneal incision. In terms of incision placement, the approach is similar to when the implant is initially placed in situ.
- I placed the semi-circular piece of the inline cutter between the implant and the cornea, with the blade under the implant.
- I pushed forward to the right position to line up the blade with a level that is posterior to Schwalbe line or posterior to the cornea.
- I actuated the handle and achieved a nice, clean cut (Figure 2).
- As the cutter is designed to hold the cut fragment, I withdrew the cutter from the eye (Figure 3) without needing an additional instrument such as forceps.

These steps can be repeated if further trimming is required.

CONCLUSION

The MST Ahmed Micro Stent cutter has allowed me to better manage

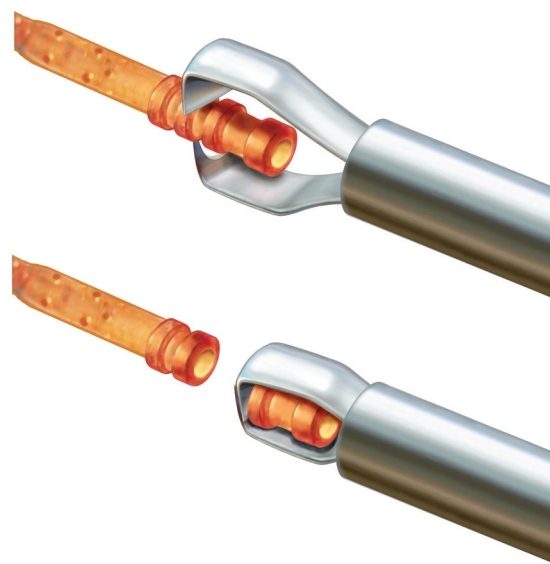


Figure 3. Illustration of the Ahmed Micro Stent Cutter grasping and trimming the stent fragment at two rings.

Courtesy of MicroSurgical Technology

my CyPass patients by providing the option to safely trim the stent rather than removing it. In this manner, the stent can continue to serve its purpose. Regardless of preferred approach, it is important that all glaucoma surgeons have a plan for managing patients implanted with the CyPass device. ■

1. Preliminary ASCRS CyPass withdrawal consensus statement. ASCRS. https://ascrs.org/CyPass_Statement. Accessed August 15, 2019.

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