A novel glaucoma drainage device that utilises an ab interno approach is delivering promising early results in terms of increasing outflow and decreasing IOP, according to a study presented at the World Ophthalmology Congress.

"Although we do need further studies with longer follow-up, my first impression of the CyPass device (Transcend Medical) is that it works very well at enhancing the aqueous outflow through the supraciliary space and avoids many of the complications associated with an ab externo approach," said Marco Nardi MD.

Dr Nardi described the CyPass as a micro-implantable device about 6.5mm in length with a small lumen of 300 microns that is designed to improve uveoscleral outflow by providing access and drainage of the aqueous from the anterior chamber to the suprachoroidal space. The implant is inserted with a special inserter that enables it to be easily placed into the suprachoroidal space, he said.

Dr Nardi added that in his clinical experience the CyPass offers a clear advance on an ab externo approach using gold shunt devices.

"The gold shunt has taught us a lot about the suprachoroidal space. When the gold shunt works properly, it really does function well. In our experience, however, we have had a lot of failures and complications of the gold shunts (Figure 1) that seem to increase over time. So when we had the possibility of using an ab interno approach we were happy to give it a try," he said.

Implanting the device is very straightforward and entails no learning curve for less experienced glaucoma surgeons. The device is implanted ab interno in a minimally invasive way into the supraciliary and suprachoroidal space to increase uveoscleral outflow. Using the special delivery system, the surgeon inserts the implant below the scleral spur at the iris root, through a clear corneal incision or through the primary phacoemulsification incision in combined cataract procedures (Figure 2). The distal end of the device penetrates into the suprachoroidal space, while the proximal collar remains in the anterior chamber (Figure 3), said Dr Nardi.

There are also many advantages associated with gonioscopic surgery compared to other approaches, added Dr Nardi.

"It is minimally invasive, atraumatic surgery and it usually leaves us with all future surgical options still open," he said.

Looking to the future, Dr Nardi said that surgeons now have some exciting options to try to help their glaucoma patients.

"First I think it is wise to try a gonioscopic procedure (reopening the Schlemm channel or diverting aqueous in the suprachoroidal space); this is because gonioscopic procedures are really atraumatic, practically free of complications, do not need postoperative manoeuvres, making the follow-up of these patients very easy. Moreover, if these devices do not function as expected, superior conjunctiva is untouched (if not better than before because of the withdrawal of anti-glaucoma drops and the use of topical steroids after surgery) so it is easy to proceed to a filtering procedure, eventually followed by a drainage device if necessary," he concluded.