

Prof. Keith Barton: innovations brought by minimally invasive glaucoma surgery (MIGs) are beneficial to glaucoma patients

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Editor's note

On April 21 and April 22 2018, the 2nd Guangzhou Glaucoma Forum (GZGF) was held at the Zhujiang New Town Premises, Zhongshan Ophthalmic Center (ZOC), China. Many world-renowned ophthalmologists attended this forum, including Dr. Keith Barton, a consultant ophthalmologist serving at Moorfields Eye Hospital and specializing in treating glaucoma, cataract, uveitis, and so on. His speech topic for the 2nd GZGF is “New Innovations in Glaucoma Surgery”. During the speech, he introduced innovative tiny equipment used in the minimally invasive glaucoma surgery (MIGs) such as iStent, CyPass, Hydrus Microstent, XEN Gel Implant. Science Editors of *Annals of Eye Science* had the honor to have an exclusive interview with Dr. Keith Barton (Figure 1) to know more about his expertise in treating glaucoma and the central concept of MIGs.

Expert introduction

Dr. Keith Barton is a world-famous glaucoma specialist whose practice is confined to the management of glaucoma and cataract. His subspecialist interests include the surgical management of glaucoma, specifically secondary glaucomas, the use of aqueous shunt devices and MIGs, as well as the management of cataract in glaucoma. To promote MIGs, he and Dr. Nathan Kerr, a glaucoma specialist, founded a website about MIGs to provide quality and trustworthy information about minimally MIGS to assist patients in making an informed choice.

Interview

AES: *Why did you choose to specialize in glaucoma and cataract?*

Dr. Keith Barton: Cataract is a common disease for the aged people. For ophthalmologists, naturally, the first thing



Figure 1 Photo with Dr. Keith Barton after the interview.

to learn is cataract surgery. Nowadays, cataract surgery is very innovative and interesting. On the other hand, the challenges brought by glaucoma surgery are unique and different from cataract surgery because of the conflicting priorities. Treating cataract could let patients restore vision in a short period of time. However, if ophthalmologists do not deal with glaucoma first, it will lead to irreversible vision loss. It has always been a challenge to control glaucoma and also fix patient's cataract. This has been a very interesting but also challenging issue for a long time.

AES: *Could you share the highlights of your today's speech?*

Dr. Keith Barton: My today's topic is about the innovations of glaucoma surgery. There are many innovations. Apparently, MIGs, which stands for minimally invasive glaucoma surgery, is the highlight of my today's speech, though this is not the only innovation of glaucoma surgery. The highlight of my speech is diverse MIGs procedures that could be used in anterior segment of eye for a surgeon. Secondly, patients were separated into

2 groups in one experiment (<https://www.ncbi.nlm.nih.gov/pubmed/20828829>). A group of patients' eye pressure could be reduced by medication after cataract surgery. The other group of patients experienced MIGs to have their glaucoma controlled. The conclusion of this experiment is pressure reduction on fewer medications was clinically and statistically significantly better 1 year after stent plus cataract surgery versus cataract surgery alone, with an overall safety profile similar to that of cataract surgery alone.

If you have high pressure and uncontrolled glaucoma, Xen Gel Stent and InnFocus Microshunt could be given to lower the eye pressure. On the other hand, if glaucoma patients simply undergo cataract surgery, their eye pressure could be well controlled by using such as, iStent, Hydrus Microstent, CyPass. Nowadays, CyPass is now considered as a similar type of procedure used for controlling the eye pressure, which could also reduce the medication use. Although there are wide options for minimally invasive surgery procedure, they are divided into slightly different indications.

AES: *Could you talk about the website of MIGs (migs.org) for ophthalmologists you mentioned in your speech?*

Dr. Keith Barton: The information available on the website is mostly for companies. Generally, it is very informative for them; however, for patients, it is very commercial. What we are trying to do now is producing independent information for patients. Hopefully, patients could rely on and won't feel being sold a commercial product. Besides, there are some implantation videos on YouTube or other video platforms where surgeons could register and upload their glaucoma surgical data. And this website is going to be adopted by European Glaucoma Society.

AES: *Are the outcomes of the innovative surgery more predictable?*

Dr. Keith Barton: They are much more predictable than traditional glaucoma surgery. But the most predictable ones still have modest pressure. What we really need is something very effective and predictable. We hope the new innovations could bring a highly effective and predictable result. For instance, modern cataract surgery which is very effective and very predictable. Glaucoma surgery is either effective but not predictable or not effective but predictable.

AES: *What is the biggest benefit brought by innovative surgery?*

Dr. Keith Barton: We are not sure yet. The promise is that many patients with cataract surgery could control glaucoma well. Medication might be reduced and could have few medication-related problems. Besides, we also hope that patients with uncontrolled glaucoma could have better predictable pressure control. One last thing I mentioned in my speech is that CyPass is also a quite interesting device because it could be applied when other procedures do not work. CyPass could be used independently after other procedures are used, which is innovative.

AES: *Do you have any words to medical school students who would like to specialize in ophthalmology?*

Dr. Keith Barton: Ophthalmology has always been very exciting because it is a combination of medicine and fine surgery. It comprises lot of interesting technologies. In my opinion, if a medical school student is interested in technology, ophthalmology would be highly attractive to him/her. Besides, ophthalmologists will be essential to patients because sight loss is very serious to patients.

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