

BORIS MD, PhD MALYUGIN

Dr. Malyugin, Professor of Ophthalmology and Deputy Director General at the S. Fyodorov Eye Microsurgery Federal State Institution in Moscow, Russia, is an internationally recognized expert in advanced cataract and corneal surgeries. In this interview, he explains how he pioneered the Malyugin Ring, a device for pupil expansion, and shares why it's best to keep your eyes and your mind open to the possibilities around you.

INTERVIEWED BY LAURA STRAUB, EDITOR-IN-CHIEF, *CRST/CRST EUROPE*



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BMC: Who or what drew you to ophthalmology?

BORIS MALYUGIN, MD, PHD: I'm from a medical family. My grandmother, grandfather, father, and mother are all doctors. So from the beginning, I was pretty sure that I would be a doctor. The biggest challenge for me was not the choice of whether to be a doctor, but rather which medical profession I would pursue. When I met Svyatoslav Fyodorov, MD, he was chairman of the ophthalmology department in my university. I was impressed by his lecture during the introduction to the ophthalmology course, and subsequently I was able to visit his clinic and was attracted to the specialty. You could say I was first attracted to the profession by Professor Fyodorov's personality and, second, by ophthalmology itself.

BMC: How did you come to design the Malyugin Ring (MicroSurgical Technology; MST), and what was the process you went through working

with the manufacturer to make it available on a wide scale?

MALYUGIN: There are many things around us, and we must keep our eyes wide open to see them. The idea for the device came from the IOLs that we routinely use in the clinic. They have smooth looped haptic elements that, you might say, look more or less like the corners of a Malyugin Ring. Sometimes you catch the iris or the capsule with the haptic loop. This gave me the idea that I could use a similar mechanism or principle for other purposes.

First, I designed an IOL that can be fixated on the lens anterior capsulorhexis. Then I came up with the idea of designing the device that is now known as the Malyugin Ring. For some time I did my best to find a partner in industry to develop the product, and one of my well-known colleagues introduced me to MST. The company proved to be a reliable partner fully committed to innovative and quality products. Larry Laks was

the chief of the company at that time; we found common ground, and we began our cooperation at that point. That was, I believe, in 2006—more than 12 years ago.

BMC: Was any part of the initial design changed during the process of working with MST?

MALYUGIN: There were several initial designs, and we carefully evaluated different models, playing with the sizes, the material, and also with the injectors and holders. A lot of engineering went into it, and a lot of artwork. MST made multiple prototypes in order to arrive at the best solution, and I tried them all. It was quite a long way between the concept and the final product you see now.

BMC: Ultimately, do you think that collaborating with MST helped to make the product stronger?

MALYUGIN: It's important for the innovator to find a good partner

“To be a good doctor—a good surgeon—you have to be at the leading edge of progress.”

in industry. It's a privilege, actually, to be able to achieve a successful partnership like this.

As a surgeon, you can help a certain number of people—maybe hundreds or thousands. But when you work on a technology, then this technology can become available all over the world, so you help many more people—hundreds of thousands or even millions. That is extremely rewarding. I have a very good feeling about the partnerships I have participated in.

I also have partnerships with other doctors who have their own ideas, and I enjoy trying to help them develop these ideas into products. It is important to do this for the future of our profession.

BMC: Did anything about the device not work out as planned?

MALYUGIN: The primary challenge was finding the right material. Despite the size, the width, and the dimensions being similar, different materials can behave biomechanically in different and unpredictable manners. It was interesting for me to see how the materials acted and how we chose the right material that we ended up using in the device.

It was great to witness, when other surgeons started using the device, how many came up with technical and innovative ideas for how to use it better and for how to modify techniques, the injection system, and so forth. It was like having this collective mind to help me improve the project and make it even better.

BMC: What motivates you to keep innovating?

MALYUGIN: Ophthalmic surgery itself is a challenge. It's challenging because you deal with a certain number of routine cases, and then suddenly a routine case unexpectedly becomes an unusual case. But there is another scenario, when at the beginning of the case you see that it is going to be challenging. And, as a surgeon, you must react to the surgical environment, right?

That feeling of change and challenge engages me. It gives me the source and the motivation for innovation. I actually want to be able to flow with challenges, and I want to overcome them. That is a big motivator for me.

The other motivator is that I always want to do my best to help the patient. I want to do whatever is needed to make the surgery perfect. That drives me to create something to help me accomplish that. I believe this is a challenge to the profession, and it is what keeps me innovating in the surgical world to help make challenging procedures more manageable.

BMC: What is one thing you'd like to accomplish in your personal life in the next 5 years?

MALYUGIN: I love my profession. I love being involved in everything I am now doing. My professional field will continue to be interesting as I make and maintain contacts with people all over the world, to teach, to learn, and to innovate. These are all exciting aspects of my personal and professional life.

Regarding my personal life, I would like to find more time to be with my

family, especially my kids. I regret having to take so much time away from my family due to work and travel commitments. My family is one of the passions in my life. I want my kids to be proud of me, and I want to show them the world. I want to show them how diverse the world is and provide a broad view of what is going on all over the globe. When you see the diversity of the world and of countries, the conditions under which people live and how people work, it gives you a very open mind—a bold mind. I believe that if you try to absorb the best of everything, and keep your eyes always open, you will never be tired of your life.

BMC: If you had to nominate one creative mind in ophthalmology, whom would it be and why?

MALYUGIN: This is a hard question because I know so many bright people who I admire and from whom I am still learning. To choose just one from among them is probably almost impossible. From among my US friends, I would have to mention David F. Chang, MD, whom I love very much and whose personality I admire. Robert H. Osher, MD, is another person I greatly admire. Of my European colleagues, there are also too many to choose just one. Marie-José Tassignon, MD, PhD, and Beatrice Cochener, MD, PhD, aren't just nice women and active surgeons, but also brilliant and sharp minds.

For me, it's hard to identify just one person. There are so many people I admire and hope to be involved with for years to come. ■

Editor's Note: This is an abridged version of Dr. Malyugin's interview. To read the entire interview, log onto www.glaucomatoday.com/issues/ and click on the May/June issue.

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