Commentary: Kitchen ophthalmic surgeon: Recipe for operation success in work-from-home era

Surgical specialties in the field of medicine have a unique work culture and camaraderie that are uniquely different from clinical, paraclinical, and preclinical specialties. The surgeons-to-be often know early in their medical school life that their calling is the operating room. In television shows and jokes, internal medicine doctors are typically stereotyped in the nerd spectrum, whereas the surgeons are stereotyped in the jock spectrum. However, there are a few specialties in medical school that have a perfect fusion of medicine and surgery – ophthalmology, otorhinolaryngology, and obstetrics–gynecology being a few examples.

Cataract Coach

In this modern age of technology, vast learning resources for ophthalmologists are easily available,[1] with video-assisted skill transfer being one of the methods of surgical training. There are several ophthalmic surgeons who have made it their life mission to train as many budding ophthalmologists as they can so that they can indirectly improve the vision of millions of patients through their students.[2,3] Many of them have their own YouTube channels where they demonstrate various tips and tricks of surgery that cannot be taught in textbooks. It is worthwhile for young ophthalmic surgeons to subscribe to the YouTube channels of Dr. Uday Devgan,[3] Dr. Pradip Mohanta,[2] Dr. Deepak Megur, Dr. Sourabh Patardhan, Dr. Ike Ahmed, Dr. Soosan Jacob, Dr. Ramakrishna Tadanki, Dr. Ashish Mitra, Dr. Biju Raju, Dr. John Davis,[4] AuroTube, AIOS, and Cochin Ophthalmic Club to learn and update their surgical skills.[1]

Deliberate practice over time makes perfect

Excellent surgical skills are acquired over years of practice. Malcom Gladwell, in his 2008 book *Outliers* had put forward a concept that it takes 10,000 hours of practice to become an expert in a particular field. If you consider a practice of 3 hours a day, that would be about 3,333 days or more than 9 years. This calculation was derived from a publication "The Role of Deliberate Practice in the Acquisition of Expert Performance" by Ericsson *et al*.[5] They also noted that doing more than 4 hours of practice a day gives diminishing returns. The key points were deliberate practice, guidance, feedback, and focusing on one's weaknesses. Blindly practicing without feedback is dangerous, as one may imprint the wrong technique into muscle memory, and it is difficult to relearn the correct technique. The concept that it takes 10,000 hours to become an expert is an exaggeration – deliberate practice with the correct technique drastically reduces the amount of time required.

It is important to learn hand–eye coordination, even with the nondominant hand. I being right handed, my teachers advised me to practice writing and brushing my teeth with my left hand to develop ambidexterity. Another teacher would advise using the left hand while flipping over an omelet or chapati. All these small modifications in daily life add up to developing your surgical skills.

Surgery simulation begins at home

Expensive surgical simulators for phacoemulsification (e.g., Eyesi) and for manual small-incision cataract surgery (MSICS; e.g., HelpMeSee) are available in some large eye institutes, but they are not accessible to the overwhelming majority of ophthalmic surgery trainees in developing countries. Animal eye training is often the best option available in most places. I still have the phone numbers of butchers from all the places that I have done surgical training in, from whom I used to source goat eyes to practice surgical steps. That still needs a lot of universal precautions and safe disposal of biomedical waste. In the accompanying article, the authors demonstrate various low-cost methods of practicing surgical skills at home, which they have dubbed "Low-Tech Intraocular Ophthalmic Microsurgery Simulation."[6] This was done using things easily available at home, such as lozenge blister packs, superglue, cardboard, straw, markers, grapes, potatoes, plasticine, and surgical instruments. The microscope was simulated by a smartphone with its camera turned on, showing how smartphones have contributed to frugal ophthalmic innovation.[7] In addition to availability and ease of use, working with these items reduces the risk of infection, and waste disposal becomes much easier.

Kitchen Ophthalmic Surgeon

My colleagues and I had presented a video (available on YouTube at https://www.youtube.com/watch?v = WPdIj9EBevo) about similar concepts of practicing eye surgery at home, which has special relevance during the COVID-19 (coronavirus disease 2019) pandemic when ophthalmic residents did not get adequate surgical training. Titled "Kitchen Ophthalmic Surgeon,"[4] it explores how cataract (MSICS and phaco [phacoemulsification]), trabeculectomy, keratoplasty, iridodialysis repair, and pupilloplasty surgeries can be practiced in the kitchen using grapes, potatoes, tomatoes, boiled egg, dough, LEGO blocks, and surgical instruments. The practice of iridodialysis repair and single-pass four-throw pupilloplasty techniques was extremely useful to me because these techniques are very rarely done. I recommend all young ophthalmic surgeons to watch the video and comment on their experience and ideas of surgical training at home.

OSCAR score goes to young ophthalmologists

The International Council of Ophthalmology's – "Ophthalmology Surgical Competency Assessment Rubric" (ICO-OSCAR)[8] is a standardized, internationally valid tool to teach and assess an ophthalmologist's competence in performing surgery, which is translated into a few different languages as well. It is available for various ophthalmic surgeries such as extracapsular cataract extraction (ECCE), small-incision cataract surgery (SICS), phacoemulsification, pediatric cataract surgery, trabeculectomy, vitrectomy, strabismus, and lateral tarsal strip surgery. This can also be done via the ICO-OSCAR app,[9] which is an innovative smartphone app for ophthalmic surgeons.[10]

Final Thoughts

Surgical training is very important in ophthalmology residency, but the number of surgeries and the skill level vary between different teaching institutes. Simulated learning in the wet lab and dry lab as demonstrated in the various articles[6] and videos[4] are very helpful to climb the learning curve faster and become an expert surgeon. All young ophthalmologists can

literally take their surgical training into their own hands by practicing at home and in the kitchen.

John Davis Akkara[1,2], Anju Kuriakose[3,4]

[1]Department of Ophthalmology, Sri Ramachandra Institute of Higher Education and Research, Chennai, Tamil Nadu, [2]Department of Glaucoma, Westend Eye Hospital, Cochin, Kerala, [3]Department of Retina, Aravind Eye Hospital, Chennai, Tamil Nadu, [4]Department of Retina, Westend Eye Hospital, Cochin, Kerala, India

Correspondence to: Dr. John Davis Akkara, Department of Ophthalmology, Sri Ramachandra Medical College and Research Institute, Sri Ramachandra Institute of Higher Education and Research, Chennai, Tamil Nadu, India. E-mail: JohnDavisAkkara@gmail.com

References

1. Akkara J, Kuriakose A, Raju B. e-Learning resources for ophthalmologists. Kerala J Ophthalmol 2020;32:191-8.
2. Mohanta P. YouTube channel of Dr Pradip Mohanta [Internet]. Pradip Mohanta-YouTube [cited 2021 Mar 30]; Available from: https://www.youtube.com/channel/UCiCkQ2Mj2S7G7IUBpv9FzWA/videos.
3. Devgan U. Cataract Coach-Prof Uday Devgan [Internet]. Cataract Coach [cited 2021 Mar 30]; Available from: https://cataractcoach.com.
4. Akkara JD. Kitchen Ophthalmic Surgeon [Internet]. 2021 [cited 2021 Mar 30]. Available from: https://www.youtube.com/ watch?v=WPdIj9EBevo.
5. Ericsson KA, Krampe RT, Tesch-Römer C. The role of deliberate practice in the acquisition of expert performance. Psychol Rev 1993;100:363-406.
6. Golash V, Kaur S, Naveed H, Nanavaty MA. Low-tech intraocular ophthalmic microsurgery simulation: A low-cost model for home use. Indian J Ophthalmol 2021;69:2846-50.
7. Akkara JD. Commentary: Dawn of smartphones in frugal ophthalmic innovation. Indian J Ophthalmol 2018;66:1619.
8. International Council of Ophthalmology: Resources: Surgical Assessment Tool: ICO-OSCAR In English, Mandarin Chinese, Portuguese, Russian, Spanish, Thai, Vietnamese, And French [Internet]. [cited 2021 Mar 30]; Available from: http://www.icoph.org/resources/230/Surgical-Assessment-Tool-ICO-OSCAR-in-English-and-Spanish.html.
9. International Council of Ophthalmology: Resources: ICO-OSCAR App [Internet]. [cited 2021 Mar 30]; Available from: http://www.icoph.org/resources/435/ICO-OSCAR-App.html.
10. Akkara JD, Kuriakose A. Innovative smartphone apps for ophthalmologists. Kerala J Ophthalmol 2018;30:138-44.

Access this article online

Quick Response Code:

Website: www.ijo.in

DOI: 10.4103/ijo.IJO_721_21

Cite this article as: Akkara JD, Kuriakose A. Commentary: Kitchen ophthalmic surgeon: Recipe for operation success in work-from-home era. Indian J Ophthalmol 2021;69:2851-2.