Guest Editorial

Cataract surgery training during ophthalmology residency in India: Challenges and how to overcome them?

Cataract surgery is by far the most commonly performed surgery in ophthalmology, and it is imperative that all residents should be reasonably proficient in this surgery at the end of their training. While the patient expectations and demands from surgery have increased tremendously in the past few years, sadly, the surgical training of residents has not kept pace with the rapid advances in the techniques of cataract surgery. Most of our medical colleges are still focused exclusively on small incision cataract surgery (SICS) and even traditional Extracapsular Cataract Extraction (ECCE). SICS certainly has a role, especially in a country like India, but we must also make sure that our residents are well versed with the latest techniques. The need for better curriculum and uniformly applied, well-structured goals for surgical training during residency training cannot be overemphasized.[1-5] As someone who has trained in ophthalmology from a routine Indian medical college, followed by one of the top institutions of the country and finally training in a first world teaching hospital, I can only say that cataract surgery training standards in India are hugely variable and need to be made more uniform.

When we talk about phacoemulsification training of residents, the first question we need to ask is whether all residents in India are getting any phacoemulsification training at all during their ophthalmology residency? While some well-funded institutions in both the government and the nongovernment sector have excellent surgical training programs, in the vast majority of our state medical colleges, there is little to no "hands-on" training in phacoemulsification surgery. This was eloquently brought out in a landmark study on general residency training standards in India published in this journal in 2008.[1] Another study focused on surgical training was published in 2017 in IJO and found that the cataract surgical training revolved around SICS.[4]

Where the residents do get to learn "hands-on" phacoemulsification surgery, there are various procedural and administrative issues that hamper their learning. In many colleges, the hierarchal system of case allocation is such that the residents get the cases at the end of the operating theatre list, and also get sub-optimal surgical instruments, microscopes, phacoemulsification systems, assistants, support staff etc. There is a need to change these processes so that the Residents have a better atmosphere to learn.

Several authors have suggested an urgent need to improve ophthalmology residency training in medical colleges of India.[3-5] This improvement in training requires funds to buy new equipment(s), and funds to maintain the equipment, "training the trainers", standardized and monitored residency curriculum including surgical log books etc., but most importantly -the desire and the drive to make resident training the focus of all activities in training institutes. The residents themselves also need to become more proactive to achieve the best possible training utilizing all available resources. Wet Labs can be a very helpful option for learning various steps of phacoemulsification before proceeding for "hands-on" microincision cataract surgery and intraocular lens (IOL) implantation. Wet Labs training will allow residents to get familiar with phacodynamics/phacomachine settings, operating microscope, and ophthalmic microsurgical instruments and definitely help to minimize the learning curve. Animal eyes, postmortem human eyes (Miyake-Apple View), simulators, devices, and teaching tools such as Kitaro Dry Lab and Wet Lab system Kit (FCI Ophthalmics, Pembroke, MA, USA) are currently available to learn and practice phacoemulsification surgery in a stress-free environment.[6-8] The All India Ophthalmological Society and few other state ophthalmological societies, etc., are doing excellent job in skills transfer courses where many residents and fellows get exposure to excellent surgical skill transfer course by the experts in the field.

It is high time for medical college heads to put top emphasis on cataract surgery training by providing tools, technology, and trained team to help achieve the goal. The availability of operating microscope with assistant tube, facility for video recording of the surgical procedure (surgical media center), good phacoemulsification machine, sets of microsurgical instruments for training, ophthalmic viscoelastic devices (OVDs), and surgical adjuncts for difficult cases (capsular dyes, triamcinolone, iris hook, and capsular tension ring) will all go a long way in achieving this goal. The teachers should take pride in skill transfer as also the Residents themselves should show eagerness and keenness to learn. We also need to think of out of the box solutions and adopt them on a trial basis, for example, better collaboration between medical colleges and perhaps allowing honorary teaching in colleges by private practitioners.

Common pitfalls while learning phacoemulsification include poor incision construction, inability to achieve complete capsulorhexis, inability to perform adequate hydrodissection, inability to crack the nucleus, iatrogenic zonular dialysis or posterior capsule rent (with or without nucleus drop), and difficulty to load and implant IOL in the capsular bag. These challenges can be avoided using good-quality OVD, new blades for creating incision, Wet Lab training to minimize the learning curve and frequent use of chondroitin sulfate-based dispersive OVD to minimize postoperative corneal edema.

Although phacoemulsification is a suture-less cataract surgery, the practice of suturing with 10-0 monofilament nylon under the surgical microscope is helpful so that residents are ready when some leaky incisions need suturing. Residents should also try to use their nondominant (left) hand for suturing as well as activities of daily living such as brushing the teeth and writing to become ambidextrous.

Finally, remember that the best of surgeons have made mistakes while learning. However, since we are dealing with human eyes, we cannot afford to make too many mistakes. Whenever a mistake is made, read up and discuss about it, so that it is not repeated. It is alright to make a few mistakes, but it is unacceptable not to learn from them. It may be helpful to record each and

every step of surgery and review surgical videos in case of complication. Last but not the least, always examine all operated patients in postoperative period so that the operating surgeon can see the direct effect of phacoemulsification surgery (corneal clarity, etc.) and their healing response. Finally, do not worry about the time taken during initial surgeries; speed is never as important as safety.

Suresh K Pandey, Vidushi Sharma

SuVi Eye Institute and Lasik Laser Center, Kota, Rajasthan, India

E-mail: suresh.pandey@gmail.com

References

1. Thomas R, Dogra M. An evaluation of medical college departments of ophthalmology in India and change following provision of modern instrumentation and training. Indian J Ophthalmol 2008;56:9-16.
2. Ajay K, Krishnaprasad R, Divya DS. Ophthalmic surgical training in Karnataka and Southern India: Present status and future interests from a survey of final-year residents. Indian J Ophthalmol 2015;63:306-11.
3. Grover AK. Postgraduate ophthalmic education in India: Are we on the right track? Indian J Ophthalmol 2008;56:3-4.
4. Gogate P, Biswas P, Natarajan S, Ramamurthy D, Bhattacharya D, Golnik K, *et al*. Residency evaluation and adherence design study: Young ophthalmologists' perception of their residency programs – Clinical and surgical skills. Indian J Ophthalmol 2017;65:452-60.
5. Gupta A. Ophthalmology postgraduate training in India: Stirring up a hornet's nest. Indian J Ophthalmol 2017;65:433-4.
6. Pandey SK, Werner L, Escobar-Gomez M, Roig-Melo EA, Apple DJ. Dye-enhanced cataract surgery. Part 1: Anterior capsule staining for capsulorhexis in advanced/white cataract. J Cataract Refract Surg 2000;26:1052-9.
7. Pandey SK, Werner L, Vasavada AR, Apple DJ. Induction of cataracts of varying degrees of hardness in human eyes obtained postmortem for cataract surgeon training. Am J Ophthalmol 2000;129:557-8.
8. Pandey SK, Werner L, Escobar-Gomez M, Visessook N, Peng Q, Apple DJ, *et al*. Creating cataracts of varying hardness to practice extracapsular cataract extraction and phacoemulsification (2). J Cataract Refract Surg 2000;26:322-9.

Access this article online

Quick Response Code:

Website: www.ijo.in

DOI: 10.4103/ijo.IJO_1032_17

Cite this article as: Pandey SK, Sharma V. Cataract surgery training during ophthalmology residency in India: Challenges and how to overcome them?. Indian J Ophthalmol 2017;65:1279-80.

About the author

Dr. Suresh K. Pandey is Director, SuVi Eye Hospital & Lasik Laser Centre, Kota (RAJ.), and President, Kota Division Ophthalmological Society. He completed ophthalmology residency from Post Graduate Institute of Medical Education & Research, Chandigarh and pursued anterior segment fellowship from Storm Eye Institute, USA & Sydney Eye Hospital, University of Sydney, Australia. Dr. Pandey has presented more than 100 papers at Ophthalmic Conferences, has 102 indexed papers published in various journals, authored 40 textbook chapters and edited 8 ophthalmic textbooks. He has also performed Live Surgery at various National & International conferences and has received awards including Achievement Award (American Academy of Ophthalmology), Best-of-Show Video Award, Best Poster Award, Best-Paper-of-the-Session Award etc. at AAO, ASCRS, APACRS, ESCRS International Conferences and was awarded Gold Medal by Indian Intraocular Implant and Refractive Surgery Society.