TEACHING GLAUCOMA SURGERY TO RESIDENTS

Perspectives from a new attending surgeon.

BY JASDEEP SABHARWAL, MD, PHD

Over this past academic year, I have had the great opportunity to work closely with the ophthalmology residents at the Wilmer Eye Institute in Baltimore as an attending surgeon. In this multifaceted role, one area of focus for me has been teaching glaucoma surgery to third-year residents. The experience so far has given me a wealth of valuable insights. This article reviews some pearls for teaching glaucoma surgery to residents from the perspective of a new attending surgeon.

BEFORE THE DAY OF SURGERY

For Wilmer residents, the third-year glaucoma rotation is their final dedicated glaucoma rotation. During this rotation, the residents primarily carry out filtering surgeries and, with faculty guidance, are responsible for all aspects of patient care. This includes the surgical evaluation, explanation of surgery and risks, case posting, and postoperative care. The beginning of the rotation is always nerve-wracking for trainees because, in addition to becoming proficient in learning surgical techniques, they are also learning how to discuss surgery and manage the logistics of scheduling. One benefit to being a more junior attending is that I can still distinctly remember all these stress points and preempt them; this leads to my first two tips.

1 Understand Nonsurgical Stressors

It is helpful for attending surgeons to be aware of the major nonsurgical stressors that can affect residents. These include tasks such as ensuring patients who need surgical evaluation come to their appointments, learning how to discuss surgery with patients and caregivers, and managing schedules to determine days for surgery that are compatible with the urgency of the case. If you are an attending surgeon who is new to an institution, make the effort to talk with senior residents to identify the pressure points of this process. Ensure that the residents know there will be challenges at the start. Although this does not solve any problems, it helps residents to anticipate them and shows them that you are invested in their education. It is important to check in with trainees more frequently early in their residency to ensure that they are on track and to address any challenges that arise as quickly as possible.

2 Anticipate Surgical Stressors

Attendings should also be prepared for the major surgical stressors that residents face and find meaningful ways to address them before the day of surgery. Beyond the general surgical skills that residents must practice on their own, such as suturing and microscope control, each surgery has unique steps that can be especially stressful for a novice surgeon. A major goal of mine is to ensure that the resident performing the procedure knows and understands these steps before the case.

There are two methods that I find best to address this. First, before the resident's first primary tube shunt or trabeculectomy case, I instruct them to watch full-length, normal-speed videos of these procedures, expertly narrated by one of our established glaucoma attendings. In these videos, each nuance of the surgery (eg, holding forceps for peritomy, managing sutures, etc.) is explained. Second, the residents spend time in the wet lab, where they can perform a complete tube shunt implantation and trabeculectomy on a pig eye with a glaucoma attending or fellow. The major benefit of this approach is that the setting allows the resident not only to practice good technique but also to see how poor technique can lead to complications. For example, after the resident correctly sutures the plate of a tube shunt to the eye wall, they can see why holding the tip of the needle at an angle could lead one side of the tip to go too deep (despite an appropriate pass) and cause a puncture. Additionally, once a resident successfully carries out their first case, they can return to those videos and gain even more insight from them.

DURING AND AFTER THE DAY OF SURGERY

The aforementioned points highlight the importance of anticipation and planning. It is especially important for new attendings to prepare, as we do not have a wealth of experience to draw on regarding all the issues that

each trainee could encounter. The following tips relate to the intraoperative and postoperative settings.

3 Establish Your Role

Set clear and consistent expectations. It is easy for new attendings to default to the role of "super senior," because most of us have had many experiences overseeing juniors. I found it important to establish a level of formality in my relationships with residents. I made my expectations clear and emphasized their responsibility. Every attending surgeon has a preferred style for interacting with trainees, but I find it most important to be consistent and set realistic standards.

4 Expect the Unexpected

As the attending surgeon, it is critical not only to anticipate common problems that could arise (eg, sudden positive pressure) but also to be ready for unexpected issues. For example, in one instance during a trabeculectomy case, the flap was amputated because it was being pulled while a Kelly Descemet membrane punch was used to create an ostomy. The most critical first step when encountering complications, both expected and unexpected, is to remain calm and thoughtfully determine the next steps. In this case, I had the OR team bring in tissue that could be used as the flap. Since this incident, I have made it a point to emphasize to residents the importance of being mindful of inadvertent stress placed on the tissue by the nondominant hand during surgery.

5 Reconsider How You Provide Feedback

Many senior surgeons can immediately determine why a resident is having trouble and expertly guide them on moving their hands during a case. As a new attending, you will not be an expert at this, and it is important to be aware when you are not adequately helping a resident through a problem. For example, during conjunctival closure, I often find residents crossing their hands and tangling the suture, causing the suture to be ineffective in closure and requiring a redo. When I first encountered this, I could tell the resident's hands were positioned awkwardly and maneuvering incorrectly, but, in the moment, it was difficult to determine why. In some instances, it is possible to course-correct during the case, but I have found that it is often more helpful to wait until after surgery and either watch a video or recreate the situation with a model. Then, you and the resident can clearly see where the issue arises and how to address it. I try to do this immediately after the case because there is a good chance the same step will come up in a subsequent case, and the resident will have an opportunity to solidify their new knowledge.

6 Continue Your Guidance After Surgery

Residents should be guided carefully through the postoperative course. I make sure to instill in every resident that postoperative care for glaucoma is as important as the surgical interventions. Just as it is important to anticipate intraoperative issues, it is important to anticipate postoperative issues so that the resident is aware of potential problems and can convey the information to patients before surgery. Learning to do this appropriately will serve the resident throughout their career, regardless of their chosen subspecialty. Although postoperative issues are always possible, residents should be given the opportunity to discuss their frustrations if they occur. Emphasize to them that issues after glaucoma surgery sometimes occur, even when each step of the surgery is performed well.

CONCLUSION

Working with trainees during this past year has been incredibly humbling. Just as residents should reflect on their performance to improve their abilities, it is essential that educators critically assess their own performance to provide the best learning environment possible. If, for some reason, we cannot figure out how to improve, we should be willing to seek advice from our colleagues or mentors. Above all, I recommend soliciting honest feedback from trainees—they will be able to identify areas for improvement that may not always be obvious to attending surgeons. ■

JASDEEP SABHARWAL, MD, PHD
- Assistant Chief of Service and Assistant Professor of Ophthalmology, Wilmer Eye Institute, Johns Hopkins Medicine, Baltimore
- jsab@jhmi.edu
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