

Virtual Mentor

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CLINICAL CASE

Managing Risk in Cataract Surgeries Performed by Resident Ophthalmologists

Commentary by Thomas A. Oetting, MD

Dr. Harvey, a first-year resident in ophthalmology, greets Mr. Walter, a retired veteran seeking surgery for a cataract in his right eye. After taking his seat, Mr. Walter states that the vision in his right eye has progressively worsened over the past decade, and now he cannot read, do puzzles with his grandchildren, or drive safely. Mr. Walter's best corrected visual acuity is 20/160 in the right eye, and, other than a dense cataract in that eye, the remainder of his examination is unremarkable. An attending physician also examines Mr. Walter; he recommends replacement of the lens that has the cataract and suggests that Dr. Harvey take the case.

Dr. Harvey explains the individual steps of the cataract surgery to Mr. Walter and reviews potential complications, including retinal detachment, need for further surgery, and blindness. She tells him that she is a resident physician and will be performing his surgery under the supervision of an attending physician, but she does not reveal that, although she has performed cataract surgery in animal eyes and using surgical simulators, she has never before performed cataract surgery on a human eye.

Mr. Walter does not inquire about her level of experience, and Dr. Harvey does not disclose the details of her surgery training. When Dr. Harvey asks if he has any further questions, Mr. Walter smiles, shakes her hand, and states that she seems like a kind, wonderful person, and that he trusts her with his vision.

At the conclusion of their interview, Mr. Walter is asked to give informed consent.

Commentary

This case brings up three important issues.

1. Residents should identify who they are and that they will be operating with faculty.
2. A surgery resident's early cases are attended by more patient risk than later cases.
3. Residents should make up for the increased risk that learning brings by enhancing patient care.

Identify Yourself

Most patients do not understand our system of training fully. Some may understand that being in a teaching hospital means that residents are involved in their surgery. Others may not even know the difference between residents and medical students. But whatever their level of familiarity, our patients expect to be told who is operating

on them. D.M. Wisner at Penn State conducted a survey of patients in which an overwhelming majority indicated that they should be notified if a resident were going to assist or perform their surgery [1].

My worst experience with a patient in my 20 years of medicine was when I was not clear before the procedure that a resident would be helping. After hearing me instruct the resident during surgery, the patient confronted me and asked if a resident participated in the procedure. The patient was upset and felt betrayed. That incident taught me to be clear with patients that residents will participate in their care, and I have asked our residents to do the same. The good news is that, when properly informed, patients will generally entrust residents with their care. Kenman Gan from the University of Alberta showed that over 95 percent of patients agreed to allow residents' participation in their surgery [2]. My experience at Iowa is similar, and I have found that informed patients welcome well-supervised residents.

Learning Curve

Several studies have shown that risk to patients decreases with the number of surgeries a resident performs. Brad Randleman [3] at Emory showed that in residents' first 80 cases, patients were more likely to have such complications as vitreous loss than in subsequent cases. In a study of our program at the University of Iowa, Gina Rogers [4] showed that the first 60 cases carried greater risk of sentinel complications than subsequent cases.

This data is very troubling to surgery educators. Even with very experienced surgery preceptors at Iowa and Emory, operations performed by the residents at the beginning of their learning curve are attended by complications that are not eliminated by faculty oversight. This may not be true for every resident, but there is a statistically significant difference in complications between groups of early cases and groups of later cases. The additional risk of early cases means we as educators must search for ways to hasten our students' progress along the learning curve so that they not only attain proficiency sooner (i.e., the *number* of cases with additional risk is reduced), but add less risk to *every* case (i.e., the *amount* of additional risk in even the very first case is reduced).

With some enhancements in the surgery curriculum, we at Iowa were able to reduce patient risk [4]. Rogers showed that early cases (the first 60) in the enhanced curriculum were no more risky than the subsequent cases in the old curriculum. This was exciting because it gives us hope that, with the use of formative feedback, deliberate practice, simulators, and structured wet lab work, we may be able to make early cases less risky for our patients. However, even with the enhanced curriculum in the Rogers study, the first cases still presented more risk of complication than later cases. So, despite experienced faculty at Emory and Iowa and an enhanced curriculum at Iowa, our patients are taking on extra risk with more junior surgeons.

Why should patients accept this risk? Many patients in settings where residents operate have limited options for their care, but this does not justify putting those

patients at additional risk. In other words, the fact that a patient can only afford to seek care in a public hospital doesn't give the resident or the system the right to provide higher-risk care. It is ethically imperative for the hospital, faculty, and—I think most importantly—for the resident to look for ways to limit this risk to our patients. At the same time, residents must work to add to the benefit side of the risk-benefit equation, bringing the ratio closer to care available outside of the teaching institutions.

Adding Benefit as a Resident

I think residents can add value to the care that patients receive that could offset the increased risk that comes with their status as learners. One way, outlined nicely in this case, is to have a close, positive, and supportive relationship with patients that comes from the additional time residents spend with them. An enhanced patient relationship can improve the patient's experience both before and after surgery. Increased vigilance for complications—a more attentive preoperative search for risk factors and close attention to pre- and postoperative care—could balance the increased risk of the surgery.

My experience at the University of Iowa is that our residents provide exceptional pre- and postoperative care, surpassing that afforded by most private practice clinics. I can recall numerous instances when our residents have identified and brought problems to the attention of more senior surgeons. Hence, I think that the net effect of having a resident surgeon involved in patient care can be positive.

Summary

In my experience, informed patients usually allow residents to participate in their surgery and realize the benefits that residents can bring to their care. I think it is important for residents to realize that their inexperience can add risk for patients. Doing so will encourage residents to minimize this risk and look for ways to improve patient care. Resident surgeons must make use of the resources that they have—wet labs, videos, and opportunities to assist—to speed their learning. Teaching institutions must continue to search for ways to help by investing in teachers and their equipment. Finally, residents should enhance patients' preoperative and postoperative period as much as possible, so that the risk-benefit ratio is optimized for those who are having surgery performed by residents.

References

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