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Commentary: Cardiac surgical quality and/or education—a false choice?

Keshava Rajagopal, MD, PhD

“Poor is the pupil who does not surpass his master.”

—Leonardo da Vinci

“There are no paradoxes, only apparent paradoxes.”

—Robert J. Lefkowitz, MD, to the author when a postdoctoral fellow in Dr Lefkowitz’s laboratory

Lin and colleagues¹ present us with a dilemma that those of us in teaching positions face commonly. How do we educate surgeons at various levels of training (ie, beginning, intermediate, and senior resident physicians, and even early-career attending surgeons) in the performance of operations, and also achieve high cardiac surgery quality? The authors, who are from an academic institution on Taiwan, found that in their institution, early-career cardiac surgeons were able to achieve equivalent outcomes to senior cardiac surgeons for the surgical treatment of acute type A aortic dissection.

That we must train surgeons is not only a desirable, virtuous activity in which we engage, it is literally a necessity. If it is not done, future patients definitely will pay the price because future generations of trained surgeons simply will not exist. Moreover, simply doing an operation does not necessarily mean running or controlling/guiding an operation; that is, executing a plan upon instruction is not the same as formulating, executing, and appropriately adapting operative plans when necessary, and training must accomplish the latter, and not only the former. Being able to

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CENTRAL MESSAGE

Cardiac surgical quality and operative education both must be achieved.

perform the steps of an operation is necessary, but not sufficient with respect to becoming a high-quality cardiac surgeon.

Conversely, with respect to quality, we must clearly define what constitutes it. Patient survival (both short- and long-term), freedom from morbid complications, and procedure-related success (ie, technical operative success), all are contributors to cardiac surgical quality. Whether that is causally related to (as a result, specifically) to shorter operative, cardiopulmonary bypass, and myocardial ischemic/aortic crossclamp times, is not necessarily clear in individual cases, or even in aggregate. That is to say, whereas early-in-experience surgeons may take a longer time to perform cardiac operations, particularly complex operations, with high-quality and state-of-the-art extracorporeal circulation and myocardial protection strategies, these temporal delays should not translate to adverse outcomes. Moreover, until operative independence is achieved, guidance can be, is, and should be provided by mentoring surgeons.

The effort and time taken to educate a surgeon intraoperatively must be viewed as acceptable. Otherwise, it is an inescapable conclusion that surgery will die, and most importantly, future patients will. Although it is heartening to see studies such as these, other studies have shown that senior surgeons achieve superior outcomes in comparison to junior surgeons. However, those studies cannot be interpreted as giving license to the view that resident physician, fellow, and junior surgeon operative experience and progression to autonomy ought to be curtailed. To the contrary, studies that demonstrate superior outcomes of senior surgeons mean that all surgeons have much work to do. Different responsibilities lie with senior versus junior surgeons. Junior surgeons need to seek out knowledge and

work with dedication and humility; they need to maximize effort. Senior surgeons need to impart knowledge and technique, and consciously promote autonomy. Put simply, they need to maximize selflessness.

Reference

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