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Commentary: The sky's the limit, but where's the ground?

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Surgical outcomes of acute type A aortic dissection (aTAAD) repair have improved over the past several decades,¹ but it remains an operation with significant morbidity and mortality due to preoperative physiologic compromise and the complexity of operative repair. Factors such as shock or malperfusion syndrome may lead to extremely poor outcomes.² Optimizing surgical outcomes requires expedient, prudent decisions about operative conduct, including cannulation, cerebral perfusion, hypothermia, and extent of repair, as well as efficiency of such conduct. Accordingly, there may be concern about how early-career surgeons may gain these skills without compromising patient care. Objective data are important, given that subjective perceptions of a surgeon's readiness for operative independence differ between senior and junior surgeons.³

Lin and colleagues⁴ examine the learning curve of aTAAD operations performed by early-career cardiovascular surgeons. The study raises a number of questions around training philosophy in cardiac surgery. First, what is an early-career surgeon? Traditional views define this according to the number of years posttraining. By contrast, the current paradigm of medical education is based on competency rather than time. Lin and colleagues⁴ apply this concept by use of cumulative sum failure analysis, defining a threshold number of aTAAD operations derived from average institutional outcomes. Outcomes were excellent, with 30-day mortality of 11.7%. Their principal finding was that mortality and morbidity outcomes were similar between early-career and senior surgeons, both overall and in the subgroup of patients with predictors of poor outcomes.

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Disclosures: The author reported no conflicts of interest.

The *Journal* policy requires editors and reviewers to disclose conflicts of interest and to decline handling or reviewing manuscripts for which they may have a conflict of interest. The editors and reviewers of this article have no conflicts of interest.

Received for publication April 15, 2021; revisions received April 15, 2021; accepted for publication April 19, 2021; available ahead of print May 21, 2021.

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JTCVS Open 2021;6:11-2
2666-2736

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<https://doi.org/10.1016/j.jtc.2021.04.010>

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CENTRAL MESSAGE

A study of early-career surgeons' outcomes for acute type A aortic dissection demonstrates excellent results in an optimized setting; data are needed for myriad real-world circumstances.

However, the generalizability of the findings is limited by the unique circumstances of their study cohort. Their early-career surgeons were those who stayed on as faculty at their institution of training. Their familiarity with the institution, its resources, personnel, and protocols gained during training was immediately applicable in their new faculty position, which may have facilitated more effective deployment of nontechnical skills, which are known to play an important role in technical performance.⁵ Average annual aTAAD volume per surgeon was 13, and training annual volumes were 200 cases, of which 25% were aortic. Although the authors and their junior surgeons should be commended on excellent outcomes, it remains an open question whether these results can be replicated by early-career surgeons who start their career in less optimal conditions; that is, in centers of lower volume or experience, with more limited resources, and of differing levels of operational efficiencies. Centralization of care into high-volume centers and aortic teams are concepts that have been proposed, but they may not be realistic as a prompt treatment option for patients living far from such centers or in rural areas.⁶ It remains important for our programs to prepare trainees for myriad circumstances. This study may represent the upper end of how we can expect early career surgeons to perform, but it does not define the lower end of the spectrum.

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