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Commentary: See one, do one, teach one...not anymore

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“See one, do one, teach one” is a time-honored phrase of surgical education that is familiar to us all. This was a common approach to surgical education but is no longer relevant as technology has become more advanced, leading us to begin to perform complex operations via minimally invasive approaches. Certainly, a better approach to teaching trainees is to have them do portions of these operations, increasing as they progress and to provide opportunities for simulation in preparation for the operation. Furthermore, throughout the course of our own careers, new techniques, technology, and approaches will be introduced, ones that we had not encountered in training. As surgeons, we need to take a thoughtful, well-planned, and data-driven approach to incorporating changes into the way we conduct operations, which is exactly what Vieira and colleagues¹ did to transition to the uniportal video-assisted thoracic surgery (VATS) approach for lung resections.

The cardiothoracic surgical literature is full of articles on “How I Do It” and “How I Teach It,” but few and far between are the articles on “How I Learned It” authored by a surgeon who is already in expert in the field who is willing to provide transparency on his or her personal learning curve. That is what “The learning curve of uniportal

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CENTRAL MESSAGE

Adopting the uniportal VATS approach should be planned and data driven to achieve proficiency while maintaining safety and adherence to oncologic standards.

video-assisted thoracic surgery: an analysis of proficiency” provides to the *Journal's* readership.

The uniportal VATS technique was first described by Rocco in 2004² and, in 2011, the first uniportal VATS lobectomy was reported by Gonzalez-Rivas and colleagues.³ A systematic review and meta-analysis of uniportal versus multiportal VATS lobectomy identified a statistically significant reduction in complications, length of stay, and duration of chest tube drainage for those undergoing uniportal VATS.⁴ There was no difference in mortality, operative time, perioperative blood loss, and conversion to thoracotomy between the 2 groups.⁴ In this issue of the *Journal*, Vieira and colleagues¹ provide details on a 4-year learning curve for uniportal VATS. Highlights of their learning curve process are the following: (1) Prospective database of uniportal VATS cases including clinical and operative details as well as videos, (2) ongoing review of cases after each 20, and (3) the development of a standard approach for each lobe. The authors used rigorous statistical methods to determine the learning curve phases (initial, transition, and proficient) and

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a multivariable analysis to identify predictors of procedure time. Aside from focusing on procedure time, the authors reported less blood loss, decreased conversion to thoracotomy and use of a second incision, decreased length of stay, and improved lymphadenectomy as they gained more experience with this approach.¹ The authors followed the learning curve through to proficiency, which was achieved after 140 cases. The importance of this contribution is that surgeons interested in adopting the uniportal VATS approach may use this article as a guide to study their own learning curve.

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