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LEARNING CURVE FOR VIDEO-ASSISTED THORACOSCOPIC LOBECTOMY

To the Editor:

Since its introduction 2 decades ago, video-assisted thoracoscopic surgery (VATS) lobectomy for non-small cell lung cancer has evolved to become a safe and effective alternative to the conventional thoracotomy approach. Contrary to suggestions that VATS is associated with an increased risk of complications compared with open operations,¹ the current literature suggests VATS may offer superior perioperative outcomes compared with open thoracotomy in propensity-matched patients, with comparable long-term oncologic and survival outcomes.^{2,3} With increasing acceptance from the thoracic community, a vast number of surgeons are learning the VATS lobectomy technique internationally.

Li and colleagues¹ presented a timely and descriptive manuscript to examine the initial learning curve of 2 thoracic surgeons for VATS lobectomy. The authors eloquently distinguished the difference between a basic level of competence, including safety and efficacy, and a higher level of proficiency, which required an additional level of efficiency and consistency. Cumulative sum analysis was performed to assess efficiency, and the authors reported that this was achieved at different intervals for different end points, such as operating duration and blood loss. Overall, the authors concluded that 100 cases

were required to develop efficiency, whereas consistency was attained after 200 or more cases.

Such statistical analyses are of great interest, but broader interpretation is limited by the inclusion of only 2 surgeons. Previous studies on VATS lobectomy have suggested that 50 cases are required to overcome the initial learning curve.⁴ However, a number of factors may contribute to this process, including the attendance of mentoring workshops and fellowships, initial supervision by experienced VATS surgeons, training of supporting staff, and optimal instrumentation. None of these factors were discussed in detail, but the authors did acknowledge that the surgeons involved in this study had no VATS mentorship available as their level of expertise developed, and the presence of mentorship may have substantially shortened the time and case load required to achieve proficiency.¹

Pioneers of the VATS lobectomy procedure varied in their technical approach and were limited by a lack of specialized instrumentation and mentoring. However, with technologic advances and clinical experience, standardized techniques have been defined and workshop programs have been developed to enhance the safety of VATS lobectomy, particularly in the hands of inexperienced surgeons. A recent Consensus Statement by international VATS lobectomy experts recommended that 50 cases are required by a surgeon to achieve technical proficiency; 50 annual resident cases are required for an institution to be recognized as a VATS lobectomy training center, and 20 cases or more should be performed annually by a surgeon to maintain VATS lobectomy operative skills. Perhaps most significant, 100% of the 50 international VATS experts recommended that surgeons should be proctored during their initial learning experience.⁵ In view of these recommendations, we believe

that contemporary VATS surgeons should have an ethical and professional responsibility to undertake specialized training in recognized VATS lobectomy institutions and be proctored by experienced surgeons before initiating a VATS program. As the authors pointed out, this crucial period of overcoming the initial learning curve may have significant medical and legal ramifications.

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