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Commentary: Uniportal medial-basal segmentectomy: Unicorn or thoroughbred?

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Huang and colleagues¹ demonstrate their approach to a uniportal medial-basal segmentectomy describing key steps, tips, and important anatomical variants. The authors provide a high-quality video, which should be watched first, with the figures and text reinforcing the steps. Although there has been an increase in segmentectomies with more small nodules found on lung cancer screening and we await the results from phase 3, randomized trials evaluating sublobar resection versus lobectomy, including the Cancer and Leukemia group B 140503 trial² and the JCOG0802 trial,³ isolated basilar segmentectomies are more technically demanding and likely have a higher learning curve. In addition, segment 7 is the smallest and deepest basilar segment, and a segment 7 segmentectomy may have limited value for invasive cancers. Ueda and colleagues⁴ estimated that an adequate 2-cm margin would only be achieved 20% of the time.

Segment 7 segmentectomy is less commonly performed because it is more technically challenging. It would be useful to know the experience level of the authors, and their thoughts on the learning curve for the uniportal approach as well as an isolated basilar segmentectomy. There are several anatomical variants, some of which they describe. Nagashima and colleagues⁵ categorized B7 branching patterns into 4 types, whereas Chujo and colleagues⁶ classified B7 and A7 branching patterns into 5 types.

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CENTRAL MESSAGE

By demonstrating their approach to a medial-basil segmentectomy, the authors help surgeons overcome the demanding learning curve, but whether this technique should be widely adopted remains unclear.

To increase the chance of success, preoperative planning is crucial, and the authors show the utility of using chest computed tomography 3-dimensional reconstructions to determine the tumor location and the relationship between the segmental bronchial, arterial, and venous branches. Xu and colleagues⁷ found that 3-dimensional reconstruction was important, especially for preoperative planning for moderate to complex segmentectomies. The authors also describe the use of the inflation–deflation method to determine the segmental plane. Another useful technique is performing a perfusion study with indocyanine green after transecting the A7 pulmonary arterial branch to delineate the ischemic segment of the lung.⁸

Uniportal approaches to lobectomy and segmentectomy have become more commonplace in Asia, yet adoption remains low in the United States. The authors have demonstrated that a uniportal approach is possible, and although there are theoretical advantages to a single incision in terms of pain control, it is unclear whether there is a sufficient advantage over multiport thoracoscopic or robotic approaches to accept compromises in stapler and instrument angles. The stapler angle appears to be challenging in their video approaching the B7 bronchus straight on toward the lung parenchyma, whereas a multiport approach would provide a lower posterior stapler

angle. The authors should consider using a curved-tip stapler that may be beneficial in passing the stapler around the bronchus.

Demonstrating their approach to a medial-basal segmentectomy may help surgeons overcome the demanding learning curve. However, it remains unclear whether this uniportal approach should continue to be a rare unicorn, with theoretical benefits in a limited subgroup of patients, or become a reliable thoroughbred that should be widely adopted as part of our armamentarium.

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