

Video-assisted thoracoscopic surgery (VATS) anatomic lung resection

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Video-assisted thoracoscopic surgery (VATS) anatomic lung resections are rapidly gaining popularity around the world due to the minimally invasive nature of the procedure when compared to the traditional thoracotomy incision. Nevertheless, only 5-20% of anatomic lung resections performed in the U.S. are done via the VATS approach (1,2). Numerous publications, similar to the current study by Dr. Wang and colleagues (3), have demonstrated the feasibility of VATS lobectomy (4,5). There are many single institution retrospective studies demonstrating superiority of VATS lobectomy over the standard thoracotomy approach (6-8).

If VATS lobectomy is so much better than open thoracotomy, why are there still an overwhelming majority of lung resections being performed through the standard open thoracotomy approach? Why hasn't VATS lobectomy procedure reached the same status as laparoscopic cholecystectomy? The answer may be simple. Currently, there is no level I evidence that VATS lobectomy is better than open thoracotomy approach. However, at the same time, there has never been a prospective randomized trial comparing laparoscopic cholecystectomy versus open cholecystectomy either.

To be fair, the analogy between lung resection and gallbladder resection may not be completely accurate. As oppose to cholecystectomy, the risk of life-threatening intraoperative hemorrhage from lung resection is much higher due to its anatomic proximity to great vessels such as pulmonary arteries and veins. When these bleeding complications occur, patients decompensate quickly. Our group has recently showed that VATS lobectomy incurred a higher intraoperative complication rate than open thoracotomy approach (1). Unlike cholecystectomy, intraoperative complications during VATS lobectomy are often immediately life-threatening. This may be the real reason why VATS has not been as rapidly adopted as other minimally invasive procedures.

The size of the incision may not be the main cause of postoperative pain in open thoracotomy if one minimizes rib spreading and avoid compressing the intercostals nerve bundles. The major determinant of postoperative length of stay for lobectomy patients is usually the duration of air leak. In light of the aforementioned points and the potential deadly bleeding complications from VATS, most thoracic surgeons have not adopted this technique widely. There is no doubt that in centers of excellence, VATS lobectomy can be performed with more superior outcomes than the standard thoracotomy approach. However, as competent and ethical surgeons, we must inform our patients of potential benefits and risks of both VATS and thoracotomy approach prior to proceeding with the operation.

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