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## Commentary: Anatomic segmentectomy: The exception, not the rule

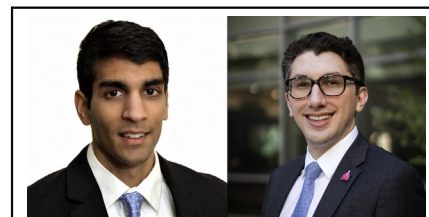
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Minimally invasive sublobar resection for early-stage tumors is the next step in the evolution of surgical lung cancer treatment. The questions that have guided our surgical progression remain the same, and recent evidence does not provide a consensus response: Can we achieve equivalent oncologic outcomes with sublobar resection? Is a sublobar resection less morbid than a lobectomy?

Randomized, prospective data remain elusive, although trials are in progress.<sup>1,2</sup> Sesma and colleagues<sup>3</sup> add to the growing body of literature that advocates the use of anatomic segmentectomy for the curative resection of early-stage non-small cell lung cancer (NSCLC).

In this publication, Sesma and colleagues<sup>3</sup> imply that sublobar resections in the form of anatomic segmentectomies may be oncologically equivalent operations to lobectomies for resectable NSCLC with fewer postoperative prolonged air leaks. The authors drew from a cohort of 2250 patients with early-stage NSCLC from 33 centers in Spain over a 15-month period, of whom 2070 received lobectomy and 180 segmentectomy. The authors performed propensity score matching of 97 patients in each treatment group and showed no statistically significant difference in censored overall and recurrence-free survival data for 3 years postoperatively.

With the current available evidence, we must be cautious in efforts to equate sublobar resection with lobectomy. The success of sublobar resection in early-stage NSCLC can be attributed to careful patient selection. Potentially, the most



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### CENTRAL MESSAGE

Lobectomy remains the standard of care for patients with early-stage non-small cell lung cancer, but our understanding of predictors of success in parenchymal-sparing operations continues to evolve.

important predictor of success in patients with stage IA NSCLC undergoing sublobar resection is a wide resection margin. These data are notoriously absent from many institutional and population-based databases, including the analyzed database in this study. In addition, we have learned from previous studies that sublobar resections, most notably nonanatomic resections, are commonly associated with lesser degrees of lymph node sampling. This tendency is again evident in this study from Sesma and colleagues.<sup>3</sup> Adequate lymph node sampling, at a minimum, is vital to informing decisions in postoperative therapy.

We currently await the long-term oncologic data from CALGB 140503 and JCOG0802 comparing lobar and sublobar resection in early-stage NSCLC. With regards to perioperative morbidity, however, we have already seen from early analyses of JCOG0802 that the rate of postoperative air leak and recurrent chest drainage is greater in the complex segmentectomy cohort.<sup>4</sup> This is not terribly surprising, based on the differences in surgical technique creating the fissure; however, it does contradict the results from this study by Sesma and colleagues.<sup>3</sup>

Apart from medically comorbid patients and those with marginal lung function, segmentectomy should be reserved for patients with node-negative, small tumors with favorable radiographic characteristics in cases in which an adequate resection margin is attainable. For the time being, segmentectomy remains the exception rather than the rule.

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## References

1. Altorki NK, Wang X, Wigle D, Gu L, Darling G, Ashrafi AS, et al. Perioperative mortality and morbidity after sublobar versus lobar resection for early-stage non-small-cell lung cancer: post-hoc analysis of an international, randomised, phase 3 trial (CALGB/Alliance 140503). *Lancet Respir Med*. 2018; 6:915-24. [https://doi.org/10.1016/S2213-2600\(18\)30411-9](https://doi.org/10.1016/S2213-2600(18)30411-9)
2. Nakamura K, Saji H, Nakajima R, Okada M, Asamura H, Shibata T, et al. A phase III randomized trial of lobectomy versus limited resection for small-sized peripheral non-small cell lung cancer (JCOG0802/WJOG4607L). *Jpn J Clin Oncol*. 2009;40:271-4. <https://doi.org/10.1093/jjco/hyp156>
3. Sesma J, Bolufer S, Garcia-Valentin A, et al. Thoracoscopic segmentectomy versus lobectomy: A propensity score-matched analysis. *J Thorac Cardiovasc Surg Open*. 2022;9:268-78.
4. Suzuki K, Saji H, Aokage K, Watanabe SI, Okada M, Mizusawa J, et al. Comparison of pulmonary segmentectomy and lobectomy: safety results of a randomized trial. *J Thorac Cardiovasc Surg*. 2019;158:895-907. <https://doi.org/10.1016/j.jtcvs.2019.03.090>