Commentary: Still not enough data yet—Sublobar resection versus lobectomy for lung cancer

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Disclosures: Author has nothing to disclose with regard to commercial support.

Received for publication Feb 6, 2019; accepted for publication Feb 7, 2019; available ahead of print March 11, 2019.

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J Thorac Cardiovasc Surg 2019;157:2466-7

0022-5223/\$36.00

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<https://doi.org/10.1016/j.jtcvs.2019.02.028>

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Central Message

A new database analysis examines the role of lymph node dissection in sublobar resections for non-small lung cancer.

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Ever since the Lung Cancer Study Group published the results of trial 801 in 1995,¹ demonstrating an increased rate of local recurrence and a lower survival rate when comparing limited resection with lobectomy for T1N0 disease, lobectomy has been considered the standard oncologic operation for non-small cell lung cancer. More recently, as national databases such as the Surveillance, Epidemiology, and End Results (SEER) database have matured to the point of having long-term follow-up for thousands of patients, groups have begun harnessing this data to reexamine this question. Once again, retrospective analyses have demonstrated that lobectomies are superior to sublobar resections.^{2,3} With such a large group of patients to examine, however, subgroup analyses become possible that may elucidate a group for whom a sublobar resection may be oncologically equivalent.

In this issue of the *Journal*, Stiles and colleagues⁴ take a relatively new approach to this problem in using the SEER database.⁴ From data that demonstrated that patients who undergo sublobar resection typically have fewer lymph nodes removed than those who undergo lobectomy, they hypothesized that this poorer lymph node dissection was responsible for the poorer oncologic outcome. To assess this, they queried the SEER database for patients with stage I (≤ 2 cm in size) non-small cell lung cancer, grouped them by lobectomy versus sublobar resection, and then did propensity matching to control for number of lymph nodes removed. They found that in the full data set, those with sublobar resections did worse, but after matching for an adequate lymph node dissection, they no longer found a difference in survival.

Although this is a novel use of this data set, and the findings reinforce the importance of lymph node dissection in oncologic resections, the conclusions of the article of Stiles and colleagues⁴ are limited by 2 fundamental problems. The first is inherent in the database that is being

examined, which is that the staging reported in SEER is pathologic staging. As demonstrated by Stiles and colleagues,⁴ many of the patients undergoing sublobar resection had minimal lymph node dissections, and so some of the patients with reported stage I disease are likely actually to have stage II or III disease. When compared with a lobectomy group in whom the disease is more accurately staged, the sublobar resection group have an expected lower survival. This concept is known as stage purification; Stiles and colleagues⁴ describe it well in their article, but it remains an inevitable asterisk for interpretation of their results.

The other issue is simply one of power. Their propensity matching is an excellent statistical method for trying to control for the first limitation described, because by matching for similar dissections, the issue of stage purification is eliminated. The propensity matching severely limited the number of patients that were included in the analysis, however, from an initial total of nearly 4000 patients to only 103 in the final matched group. With such a small group, the failure to find a statistical difference is not a good argument for equivalence. This analysis is certainly underpowered to find a difference.

This analysis is well done, but database studies unfortunately have some limits that cannot be easily overcome. It is to be hoped that the upcoming randomized trials^{5,6} will provide some solid modern data about the utility of sublobar resections.

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