



# Defining extent of sublobar resection: less may be more

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*Comment on:* Altorki NK, Kamel MK, Narula N, *et al.* Anatomical Segmentectomy and Wedge Resections Are Associated with Comparable Outcomes for Patients with Small cT1N0 Non-Small Cell Lung Cancer. *J Thorac Oncol* 2016. [Epub ahead of print].

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In this very interesting article, Altorki and colleagues address the very important question of whether sublobar resection with wedge resection for cT1N0 nonsmall cell lung carcinoma is equivalent to anatomic segmentectomy. Thoracic surgeons routinely face this dilemma when considering surgical resection in patients who are clearly not safe candidates for lobectomy, with the premise that segmentectomy is the “better” cancer operation (1).

Though retrospective in nature, it is a carefully done examination with interesting findings that contradict a great deal of historical data that favor segmentectomy over wedge resection. As expected, patients who underwent anatomic segmentectomy had more lymph nodes resected, but nodal upstaging was not different between the two groups. Wedge resections had a much higher likelihood of being completed by VATS, but patients undergoing segmentectomy had slightly larger tumors. Most importantly, long term and disease free survival for both groups were similar.

The thoroughness of staging and lymph node assessment for patients in both treatment groups is well documented in this study, and is strictly controlled in the ongoing randomized trials examining sublobar versus lobar resection for small peripheral lung cancers (CALGB 140503 and JCOG0802) (2,3). Not surprisingly, this may be the critical component in treating this population of patients. Maybe the time spent in accurately staging the patient, not the time performing a more technically challenging operation for resection, is what ultimately affects outcomes for those with the earliest of stage disease. Given that time is money, when approaching surgical resection for small peripheral lung tumors, the money may be in the process of accurate

staging as opposed to the extent of the resection.

Another interesting possibility for explaining similar outcomes between these two groups is the higher proportion of wedge resection patients who were completed by VATS (74% *vs.* 46% for segmentectomy group). The effect of surgical stress on this already frail, high risk patient population should not be overlooked, and may indeed factor into long term outcomes. Is the benefit of the anatomic resection lost when it has to be performed open? Segmentectomy patients also had higher SUVmax on PET/CT imaging which may be a reflection of tumor biology. Tumor biology, which can't be controlled for, may ultimately be king, and minimizing the challenge to a patient's immune response through a minimally invasive approach may be beneficial.

Yet another possibility for the lack of difference seen in this study is that it may simply be underpowered. For example, if the difference in local recurrence between the two populations is 5% (i.e., the recurrence increases from 15% to 20%), a 95% confidence interval and a modest power of 80% would require a population of 900 patients to study. In addition, the follow up time in this study is modest (~36 months), which limits the power of the survival analyses.

The real answer to whether segmentectomy is better than a wedge resection or not, is found at a confluence of changing tumor biology, increasingly accurate lymph node staging, increasing use of minimally invasive surgery, and further definition of prognosis using histology and molecular markers. In this scenario, it seems unlikely that a randomized trial to answer this question is possible.

Until then, case series such as these should help create a framework for decision making, imperfect as it may be.

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