



**DO NOT GO TOO FAR
WHEN CHOOSING
INTENTIONAL
SEGMENTECTOMY**



FOR SMALL-SIZED LUNG CANCERS

To the Editor:

Although lobectomy is still the standard surgical treatment for cT1N0M0 non-small cell lung cancer (NSCLC), an increasing number of studies suggest that segmentectomy may provide equivalent oncologic outcomes in selected patients while better preserving pulmonary parenchyma and function. Surgeons will still likely encounter the clinical issue of unexpected nodal involvement. Under such circumstances, should a segmentectomy be converted to a lobectomy or a completion lobectomy be performed during the patient's recovery? This is a dilemma for both surgeons and the patients. Fortunately, an interesting study by Razi and colleagues¹ provided evidence that survival was not significantly different between patients who underwent lobectomy and those who underwent segmentectomy among those with unexpected nodal disease (pathologic N1 or N2 diseases). However, while congratulating these authors for their great efforts in addressing this clinical scenario, we would like to share our insight.

Studies analyzing data from the same database (National Cancer Database) during almost the same period found that segmentectomy was associated with significantly reduced overall survival compared with that of lobectomy even in cases of cT1aN0M0 NSCLC.^{2,3} These results may be explained by the following reasons. First, segmentectomy may have been used too frequently in patients with solid nodules. Second, a greater incidence of positive tumor margins would have certainly affected the survival. Third, insufficient assessment of lymph nodes in the segmentectomy group might lead to a large number of patients being understaged and thus undertreated. Finally, tumor spread through air spaces might have contributed to the compromised outcomes of segmentectomy compared with those of lobectomy.

Therefore, the most important concern may not necessarily be whether completion lobectomy should be performed when unexpected nodal involvement is encountered but to avoid such a dilemma. Selection of

appropriate candidates for intentional segmentectomy is the most important concern. Accumulating evidence suggests that the consolidation/tumor ratio is a reliable parameter for predicting invasive histology, spread through air spaces, lymph node involvement, and indeed the prognosis in patients with small NSCLC.⁴ Consolidation/tumor ratio ≤ 0.5 remains standard criteria before the final results of 2 ongoing randomized controlled trials (CALGB1405035 and JCOG0802/WJOG4607L) are reported. Another concern is the quality of resection, which should follow the proper oncologic principles. Segmentectomy is most likely technically challenging for some surgeons, and it may be tempting to perform a lobectomy and not take the time to complete a defective segmentectomy, which will comprise patient outcomes. In many cases, the tumor may be located near the intersegmental border, and an extended or combined segmentectomy should be performed to ensure an adequate margin. In addition, no matter what type of resection be performed, thorough lymph node dissection and evaluation should be mandatory because the extension of lymph node assessment does influence the prognosis.⁵ Intraoperative frozen section examination of stations 10 to 13, if possible, is strongly recommended. In conclusion, we should be careful when interpreting the results of this study and not go too far when performing intentional segmentectomy.

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**REPLY FROM
AUTHORS: POSITIVE
NODES AFTER
SEGMENTECTOMY:
TAKE A DEEP BREATH
AND GIVE ADJUVANT
TREATMENT**



Reply to the Editor:

Intentional segmentectomy is gaining acceptance as the procedure of choice for small (<2 cm) clinical N0 non-small cell lung cancer (NSCLC). Controversy about the oncologic equivalence of both operations will continue until results from the randomized controlled trials CALGB1405035 and JCOG0802/WJOG4607L are reported. It is not surprising that our findings generate expressions of caution among thoracic surgeons, who may believe in significant oncologic benefits of lobectomy over segmentectomy in regards to obtaining larger negative margins and greater lymph node counts. There is no doubt that the presence of unsuspected nodal disease is significantly associated with lower survival; however, our findings indicate that lobectomy does not offer better survival than segmentectomy in this population.¹

Liu and colleagues² argue that applying more-stringent selection criteria for segmentectomy might avoid the dilemma of having to decide on completion lobectomy, if unsuspected lymph node disease is found. Quite the contrary, we embrace those findings. A positive nodal disease implies successful nodal dissection irrespective of lobectomy or segmentectomy. Substantial evidence exists that lymph node disease compounds many (if not most) of the local histopathologic tumor characteristics as being the supreme prognostic marker.³ And, as our results show, adjuvant systemic treatment improves survival in patients with unsuspected lymph node disease irrespective of the extent of lung resection. Moreover, our study does not serve as a general comparison between segmentectomy and lobectomy for cT1aN0 NSCLC, as we only studied subset of

patients who were pathologically upstaged with regional lymph node metastases (pN1/N2). Therefore, it should not be construed with comparative analysis between lobectomy and segmentectomy for stage I NSCLC, as shown by Khullar and colleagues⁴ and Speicher and colleagues.⁵

We agree with Liu and colleagues that intentional segmentectomy should follow proper oncologic principles, including negative margins equal to at least the diameter of the tumor and a thorough lymph node dissection to avoid false understaging. As asserted by the authors, more work is also needed to study the significance of spread through air spaces when selecting patients for segmentectomy. However, we believe that using a strict inclusion criteria for segmentectomy based on consolidation/tumor ratio of ≤ 0.5 might be unnecessary, as similar survival have also been shown between sublobar resection and lobectomy for pure solid stage IA NSCLC by the International Early Lung Cancer Action Program (I-ELCAP) investigators.⁶ Similarly, we are not convinced that frozen section at stations 10 to 13 should be mandated for cT1N0 NSCLC, as we have shown that completion lobectomy may not offer any additional survival benefit in patients with unsuspected lymph node metastases.

In summary, we believe that selection criteria for segmentectomy should include several variables not completely defined yet, and caution should be exercised about the inappropriate use of segmentectomy in good surgical candidates for lobectomy. However, when unsuspected lymph node disease is found on final pathology, adjuvant chemotherapy appears to have a greater impact on overall survival than the type of anatomic resection.

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