of early lung cancer will increase markedly.¹¹ The impact of lymphadenectomy on patients with early NSCLC after sublobar resection is a critical clinical problem. We propose the following model for LN sampling in patients with NSCLC during sublobar resection: complete systematic LN sampling for invasive carcinomas confirmed by frozen section or uncertain cases, with a threshold of 16 or more LNs being found during postoperative pathologic diagnosis as an indication of sampling sufficiency, but no or limited LN sampling for patients with AIS/MIA when these cancers are intraoperatively confirmed.

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LYMPH NODE ASSESSMENT ADEQUACY AND FIRST AMENDMENT JURISPRUDENCE: CAN WE DO BETTER THAN JUST "KNOWING IT

WHEN WE SEE IT"?

Reply to the Editor:

In their letter to the Editor, Liu, Liang, and He highlight an important issue in how we study surgical quality. How do we consistently count lymph nodes, and how to we determine adequacy? To paraphrase Supreme Court Justice Potter Stewart and his ability to recognize obscenity,¹ we know it when we see it, but we have a very hard time actually quantifying it. This is due in part to (1) fragmentation of lymph nodes during surgery and (2) variation in lymph nodes found within the resected parenchymal specimen.^{2,3} Lymph node count thus becomes an imperfect tool to assess the adequacy of lymph node harvesting. Unfortunately, within large national databases, as of now at least, it is the only tool we have.

The potential benefits of lymph node assessment are both the therapeutic benefit of resecting cancerous nodes and adequately staging disease, especially disease deemed pN0. From the standpoint of staging, adequacy can be determined by assessing the degree of upstaging for a given lymph node strategy (counts, anatomic dissection, number of stations, etc). Liu, Liang, and He describe their method of using hypergeometric distribution and Bayes theorem, by which they identified 16 nodes as a sufficient number. In our group's assessment of the National Cancer Database,⁴ we used a receiver operator curve and sensitivity analysis and found that assessing 14 nodes was sufficient for patients with clinical stage I disease undergoing lobectomy. Several other studies have done similar analyses, and for patients undergoing lobectomy, there seems to be a consensus around 14 to 18 nodes, notwithstanding the concerns already discussed, as sufficient for proper staging.

Patients undergoing sublobar resection are different. As noted in the letter, a large percentage of these patients do not have any lymph nodes assessed. In a study by Yendamuri and colleagues,⁵ only 8% of patients had more than 9 nodes assessed. In our group's analysis of the National Cancer Database,⁶ only 17% of patients undergoing wedge resection had more than 5 nodes examined. Neither article specifically said that those were the optimal number of nodes assessed; in fact, given the small number of patients with any nodes assessed, these articles serve to highlight the importance of any node assessment in patients undergoing sublobar resection. Clearly, the lymphadenectomy was

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substandard in all these populations, in part because of the smaller parenchymal resections. What all of these studies have shown, however, is that improved lymph node assessment is associated with improved survival. Compared with patients with no nodes assessed, patients with at least 1 node assessed have better survival, and the more nodes assessed, the more significant the improvement.

Development of a better method of assessing the adequacy of lymph node assessment and a more rigorous statistical approach for comparing lymph node assessment between groups will undoubtedly improve our field and our ability to care for patients with lung cancer. While that work continues, all these articles serve as reminders that a thoughtful and deliberate lymph node assessment is an essential part of good cancer surgery. What is “thoughtful and deliberate”? For now, like Justice Stewart, we may just have to know it when we see it.

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