Old habits die hard

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In this issue of the *Journal*, Fernandez and colleagues¹ present an article evaluating the utility (or lack thereof) of routine mediastinoscopy for early stage non-small cell lung cancer. In a multicenter prospective study of 90 patients with clinical stage T2N0 and T1N0 with tumor standard uptake value less than 10, they found that the negative predictive value of combined positron emission tomography and computed tomography for mediastinal lymph node metastases was 94.2%. When routine mediastinoscopy was performed for this population, only 1% of patients were upstaged to N2 disease, providing a very small increment in the negative predictive value of mediastinal staging to 95.3%.

The study question is of important relevance at a time when thoracic surgeons in North America are moving away from routine mediastinoscopy before lung cancer resection. A recent report demonstrated that the use of mediastinoscopy for eligible cases can be as low as 11.4%.² Certain guidelines now omit the requirement for invasive mediastinal staging altogether when clinical stage T1N0 is confirmed on both computed tomographic scan of the thorax and by positron emission tomography with computed tomography.³ In this study, only 9 patients with clinical stage T1N0 underwent mediastinoscopy, possibly indicating such a migration away from mediastinoscopy at the institutions represented by Fernandez and colleagues.¹ This is also highlighted by the fact that it took 5 years to enroll 90 patients in this trial, even at high-volume centers for lung surgery.

In this study, 4.6% of patients had upstaging to N2 disease at the time of lung resection, with the nodal involvement missed by mediastinoscopy. Two of those patients underwent pneumonectomy for N2 disease. Although Fernandez and colleagues¹ describe their standardized technique for mediastinoscopy, they chose to include patients who had fewer than 3 lymph node stations sampled.

Perhaps this raises questions about the rigor of quality control in this trial, but it is likely reflective of the general reality of mediastinoscopy. A commonly quoted article by Little and coworkers⁴ showed that only 46% of samples collected at mediastinoscopy actually yield any lymph node material. The population of this study also includes patients who had positron emission tomography with computed tomography imaging performed at institutions outside the study centers, where experience in thoracic radiology is not necessarily present. This may have affected the quality and consistency of preoperative clinical staging, but is also likely to be representative of common real-world situations.

The very limited incremental value of mediastinoscopy, as demonstrated by this trial, is of added significance in light of the development and rapid adoption of minimally invasive techniques for mediastinal staging. There is level I evidence to suggest that endobronchial ultrasonographically guided transbronchial needle aspiration has a diagnostic performance equivalent to mediastinoscopy when performed at centers of excellence.⁵ By means of combined ultrasonography, with both endoscopic ultrasonography and endobronchial ultrasonography, lymph nodes that are not accessible to mediastinoscopy, such as the inferior subcarinal, inferior pulmonary ligament, and paraesophageal stations, can be successfully sampled.⁶ Fernandez and colleagues¹ try to address less invasive staging by commenting that endosonography is unlikely to have a role in early lung cancer, and I agree. One wonders, however, whether the 2 patients who underwent pneumonectomy with station 7 nodal involvement could have been spared resection if they had undergone staging with combined ultrasonography.

Old habits die hard. Mediastinoscopy will always be the criterion standard for mediastinal staging, particularly in clinically advanced disease. This article, however, adds to the growing body of evidence that it is expensive and probably unnecessary for patients with clinical stage I non-small cell lung cancer.^{7,8} Although this study evaluates mediastinoscopy specifically, I believe that Fernandez and colleagues¹ have tried to address an even broader question: Is any form of invasive mediastinal staging indicated for patients with clinical stage I non-small cell lung cancer?

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