Commentary: I saw, therefore I coiled—Solving the small nodule problem

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In the era of routine lung screening, surgeons will be more frequently confronted with the challenge of dealing with small, indeterminate pulmonary nodules not amenable to percutaneous or bronchoscopic diagnostic techniques. Although excisional biopsy by means of minimally invasive wedge resection can be straightforward, intraoperative failure to localize nodules is a real concern. Conversion to thoracotomy can be an option, but surgeons may still encounter situations in which manual palpation is not helpful for locating ground glass opacities or semisolid nodules. Adjunct localization techniques can be of use in these situations to avoid intraoperative conversions to thoracotomy and guarantee diagnostic success.

In their retrospective review of 92 patients published in this issue of the *Journal*, McGuire and colleagues¹ describe their experience with preoperative computed tomographically guided platinum microcoil placement as a durable solution to localizing difficult-to-locate pulmonary nodules requiring pathologic diagnosis. This work comes 5 years after the publication of the same group's small, randomized, controlled trial of this technique, which demonstrated high diagnostic efficacy in localizing challenging nodules.² In their current publication, McGuire and colleagues¹ show promising results; they report a 100% localization rate in all patients, with no intraoperative conversions. In addition, no patient sustained a procedure-related complication requiring intervention. Even taking into account the vast experience that this group has with this technique, it is evident that computed tomographically guided microcoil lung surgery can be a high-yield tool that surgeons can adopt into their practice.

Although McGuire and colleagues¹ demonstrate clinical and diagnostic efficacy, do they provide sufficient evidence that widespread adoption of microcoil technology is feasible? The microcoil technique has been in existence for more than 2 decades.³ For reasons that remain unclear, however, this technique has not been implemented across the majority of thoracic surgery

Melanie P. Subramanian, MD (left), and Varun Puri, MD, MSCI (right)

Central Message

Computed tomographically guided platinum microcoil lung surgery can be an effective strategy for patients with difficult-to-locate pulmonary nodules requiring pathologic diagnosis.

See Article page 594.

programs.⁴ For an adjunct diagnostic procedure to be widely incorporated into standard practice, the strategy must (1) provide high diagnostic utility, (2) be cost-effective, (3) avoid impinging on workflow, (4) provide a satisfactory risk-benefit ratio, and (5) be used in a large enough patient population to make it worthwhile to adopt. Similar parallels can be seen in patients undergoing wire localization for breast lumpectomy; this procedure is relatively cost-effective, applies to a sizable proportion of patients with breast lesions detected through imaging, and can provide high diagnostic utility and reduce operative times. McGuire and colleagues¹ have demonstrated the diagnostic utility, cost-savings, and safety associated with microcoil lung surgery. They also describe how a good working relationship with radiology colleagues is essential for establishing an efficient workflow. In addition, McGuire and colleagues¹ suggest expanding the clinical indications for the technique—their cohort included patients who were older, had greater comorbidity burden, had more centrally located nodules (≥ 30 mm from the pleura), or had multifocal nodules. As more institutions report positive clinical outcomes and ease of implementation, microcoil technology may provide a durable and necessary adjunct to the clinical algorithm of diagnosis in patients with indeterminate pulmonary nodules.

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