The author reported no conflicts of interest.

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When looking at the target lesion across a large vessel, an endosonographer should ask 3 questions.

- Do I really need to go there? In the case described, a 10-mm left upper lobe lesion was associated with a mildly hypermetabolic and relatively small-sized station 5 lymph node. All other sampled mediastinal lymph nodes were negative for metastasis. Was a biopsy of station 5 going to change management? Most tumor boards will support upfront resection of a left upper lobe lung cancer with an isolated metastasis to station 5 because the prognosis is very close to that of N1 disease.
- Am I well equipped to get there? In the article by Molina and colleagues² the authors describe performing the echo-endoscopic procedures using a linear ultrasound array scope. These scopes are designed to be used in the esophagus by virtue of large balloons, multiple degrees of freedom on the articulating tip, the ability to lock the position of the scope in place before threading the needle, and the ability to use a long needle (8 cm) to reach distant targets. This equipment not only allows superior assessment of the biopsy window, but also allows for a safe and well-controlled sampling. Soumagne and Fortin do not describe the equipment they used, but one can infer that it was an endobronchial ultrasound positioned in the esophagus, as has become routine practice in the realm of interventional pulmonology. Transaortic transesophageal biopsies should not be attempted with equipment that is not designed to work in the esophagus.
- Can I cross there and back safely? Most authors will agree that aortic calcifications visible on computed tomography and/or endosonography are an absolute contraindication to transaortic biopsy due to the risk of aneurysm or stroke. I am in complete agreement with Soumagne and Fortin that such a biopsy should not be attempted, and strong caution should be advised.

Crossing the aorta is akin to crossing a busy street. Endosonographers must ask if they really need to go there, whether they are equipped to do so, and whether they can get back safely. If so, then when there is a will, there is a way.

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REPLY: TRANSAORTIC TREPIDATION

Reply to the Editor:

Drs Soumagne and Fortin from the Université Laval in Québec submitted a Letter to the Editor that enhances our understanding of the caveats regarding transvascular ultrasound-guided needle puncture for the biopsy of mediastinal and pulmonary lesions.¹ This is a response to an original manuscript written by Molina and colleagues² from the group at Centre Hospitalier de l'Université de Montréal exploring the feasibility and safety of this procedure.

This letter provides additional color to illustrate a feared complication of transaortic needle puncture. Molina and colleagues cautioned endoscopists in the original manuscript regarding traversing a calcified, aneurysmal, or atherosclerotic aorta, although they did not specify a clear algorithm. Therefore, repercussions were only theoretical. Soumagne and Fortin describe a case in which a level V lymph node was accessed through a transaortic approach with a 22-gauge needle in 3 passes. The aorta was noted to be calcified and atherosclerotic. Diagnostic tissue was achieved with no immediate complications, yet the patient subsequently developed a penetrating ulcer of the aortic arch with a mediastinal hematoma requiring endovascular repair. She recovered and went on to receive definitive chemoradiation for non-small cell lung cancer.

We are thankful that Drs Soumagne and Fortin elected to share their experience. It illustrates 2 points. First, a strong sense of foreboding should precede transaortic puncture through 2 walls of a diseased vessel. Of course, this singular case can only be considered anecdotal. However, cardiothoracic surgeons have intimate experience with the consistency of a diseased aortic wall and understand the potential consequences of disrupting its fragile layers. Not all cases will be straightforward, and good clinical judgment regarding consequences of completing or aborting a procedure will be required for any specific scenario. We also do not understand how long to observe a patient in recovery or how to recognize a vascular complication early. Fortunately, this particular patient presented with dysphagia and pain.

Second, this case allows us to reflect on any purely diagnostic procedure that entails risk. It is critical to ensure that

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a result will meaningfully affect management. In this case, if the patient were physiologically fit for resection, the aortopulmonary window node may determine the difference between neoadjuvant therapy and primary surgery. Alternatively, the node could be addressed intraoperatively with a safe minimally invasive procedure. A negative node may justify proceeding with resection, and a positive node may present a choice depending on additional factors. For a frail patient considered inoperable, few medical or radiation oncologists would ignore a hypermetabolic pathologically enlarged regional lymph node even with a negative needle aspirate. The pretest probability of malignancy is just too high. Cases such as this are best discussed prospectively at a multidisciplinary conference.

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REPLY: FURTHER STUDIES ARE REQUIRED

Reply to the Editor:

Experienced journal editors and reviewers tend to roll their eyes when reading submitted articles whose concluding sentences begin with, “Further studies are required to...” These vacuous

words often suggest that authors are hedging their bets by offering hesitant qualifications to their study’s findings instead of delivering an unambiguous take-home message for readers. However, there are times in surgery when these words are truly necessary.

In 2020, Molina and colleagues¹ published a report of 100 patients for whom they performed transvascular endosonographic-guided biopsies of mediastinal, hilar, and lung lesions. This bold technique involves passing the needle through vascular structures, including the aorta. Although they reported a low rate of morbidity, the potential for catastrophic vascular complications cannot be excluded. In a Commentary accompanying the article, I noted that an ultrasound evaluation to rule out a hematoma formation was only performed immediately after the procedure, and cautioned that the risk of delayed vascular sequelae remains unknown.² The Commentary suggested to readers that whether or not this aggressive technique should be emulated in their own centers must be carefully considered. To the credit of Molina and colleagues,¹ they conclude their article by stating, “Until further experience is available, this approach should be restricted to high-volume centers and undertaken only as a last resort.” A prime example of when the use of “further studies are required to...” is not only justified, but morally responsible.

Proof of this point is delivered in the letter by Soumagne and Fortin.³ These authors report a case where a penetrating atherosclerotic ulcer of the aortic arch developed 3 weeks following a transaortic endosonographic-guided lymph node biopsy. Endovascular stent-graft repair was required, and the patient recovered. Notably, no hematoma formation was detected on ultrasound immediately after the initial procedure per the protocol of Molina and colleagues.¹ This case clearly illustrates why further studies are crucial in defining the safety and role of any new surgical technique, even when initial results appear promising.

What this case should not represent to readers is that the procedure of transvascular endosonographic-guided biopsy is flawed or should not be performed. On the contrary, surgeons should be encouraged to constantly develop and safely research bold innovations to advance patient care. Nonetheless, the process of accumulating clinical data to validate any new surgical procedure is a slow process. For example, it took around 2 decades of data accumulation before lung cancer surgery by video-assisted thoracoscopic surgery became established as preferred clinical practice.⁴ In internal medicine, any new pharmaceutical therapy undergoes multiple phases of clinical trials before it can be endorsed for general clinical use. The same level of rigorous testing is sadly not used when evaluating most new surgical techniques.⁵ For now, pioneering surgeons must patiently cultivate the evidence for each new technique through research under strict regulatory oversight.

As the evidence for transvascular endosonographic-guided biopsy matures, future case series and reports will inevitably be published. Readers should not take any individual retrospective case series as a guarantee that they