**CASE REPORT**

A 68-year-old asymptomatic woman was involved in an ongoing research study evaluating the performance of a circulating tumor DNA-based blood test for early cancer identification (DETECT study). An abnormal result led to positron emission tomography–CT, which showed focal radiotracer uptake at the gastroesophageal junction (Fig. 1). This was followed by upper endoscopy, which revealed a small subepithelial lesion (SEL) at the esophagogastric junction/gastric cardia (Fig. 2). EUS showed a well-defined 22-mm × 14-mm hypoechoic lesion arising from the muscularis propria layer of the esophagus (Fig. 3).

FNA revealed a spindle-cell neoplasm positive for smooth muscle actin and negative for DOG-1 and CD 117, consistent with leiomyoma. Although the results of pathologic examination were consistent with a benign process, resection was recommended by the surgical oncologist, given the tracer uptake on positron emission tomography–CT.

Surgical and endoscopic options were considered, and the submucosal tunneling with endoscopic resection (STER) technique was selected as the modality of choice based on the location of the lesion crossing the gastroesophageal junction. A surgical approach to this lesion likely would have required disruption of the lower-esophageal sphincter and predisposed the patient to significant reflux. STER preserves the lower-esophageal sphincter and allows the gastric and esophageal attachments at the hiatus to be maintained.

A Dual Knife J (Olympus, Center Valley, Pa, USA) was used to create a mucosotomy entry point 5 cm proximal to the lesion and then create a submucosal tunnel. Although the tunnel was taken down to the expected location of the SEL, the lesion could not be seen. Therefore, a 20-MHz EUS miniprobe was inserted through the working channel of the endoscope while it was in the tunnel, and the tunnel was filled with water. EUS imaging showed the hypoechoic mass, slightly deeper than the depth of the tunneling dissection. Cutting a little deeper in the predicted location revealed the outer capsule of the SEL. Complete resection was then completed with both the Dual Knife and an IT Nano Knife (Olympus, Center Valley, Pa, USA) (Video 1, available online at www.VideoGIE.org).

The intact lesion was 2.7 cm × 1.7 cm × 1.4 cm and was removed from the tunnel with an endoscopic net (Fig. 4). The mucosotomy was closed with clips. A routine esophagram (Fig. 5) with kidneys, uterus, and bladder

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**Figure 1.** Positron emission tomography–CT with focal uptake at the gastroesophageal junction.

**Figure 2.** Upper endoscopic view showing subepithelial lesion.
(Fig. 6) was done postprocedurally. No esophageal leak was seen; however, a small amount of free air was seen on the kidneys, uterus, and bladder view. The patient experienced nausea postprocedurally and was observed overnight in the hospital. She was discharged the next day and was followed up in clinic 3 weeks after STER, with no complaints or adverse events from the procedure. The final pathologic diagnosis was leiomyoma, with an immunohistochemical profile identical to that of the previous FNA biopsy specimen.

**DISCUSSION**

The STER technique is inspired by both endoscopic submucosal dissection and peroral endoscopic myotomy. The procedure begins with a mucosotomy to create an entry point for the endoscope similar to that for peroral endoscopic myotomy; then, endoscopic submucosal dissection knives and principles are used for creation of the submucosal tunnel. Finally, resection of the tumor is performed.

STER for submucosal lesions at the esophagogastric junction can be technically challenging because of a narrow
lumen and sharp angulations if the lesion extends into the cardia. In addition, if the SEL is exophytic and points away from the mucosa, its location may not be readily apparent in the tunnel. In our case, we faced these challenges and found that use of the 20-MHz EUS miniprobe was essential to accurately guide deeper dissection and resection. For the management of subepithelial lesions in the digestive tract, miniprobe EUS imaging may be a useful adjunctive technique for precise localization of the lesion.

DISCLOSURE

Dr Diehl is a consultant for Olympus and Boston Scientific. All other authors disclosed no financial relationships relevant to this publication.

Abbreviations: SEL, subepithelial lesion; STER, submucosal tunneling with endoscopic resection.

REFERENCES

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