

Combined Laparoscopic Resection of an Extraesophageal Leiomyoma and a Traction Diverticulum

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ABSTRACT

We report the laparoscopic resection of an extraesophageal leiomyoma and an epiphrenic traction diverticulum; in addition, myotomy and fundoplication were performed. This has not been reported previously as a laparoscopic combination. No complications were encountered.

Key Words: Laparoscopic surgery, Diverticulum, Esophageal, Leiomyoma.

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INTRODUCTION

A 64-year-old woman was referred to the surgical outpatient clinic with reported esophageal reflux. Gastroscopy revealed Barrett's esophagus, a lower esophageal diverticulum, and a possible hiatal hernia. Previous medical history included obesity, hypertension, and depression. She had no symptoms of dysphagia, weight loss, or vomiting.

Further investigations were performed including a barium swallow that showed "unusual images which could show a paraesophageal hernia or possibly an esophageal diverticulum" (**Figure 1**). A computed tomography scan was performed to further delineate the anatomy of the gastroesophageal junction and esophageal hiatus (**Figure 2**). This was suggestive of a rolling hiatal hernia.

The patient's worsening symptoms, namely epigastric and retrosternal burning pain exacerbated by particular foods and certain postures, prompted surgery. She had no symptoms of regurgitation. At this stage, she was taking pantoprazole and ranitidine with no beneficial effects.

Case Description

The patient underwent laparoscopic hiatal dissection with excision of the epiphrenic diverticulum and an overlying esophageal mass, which extended 10 cm into the mediastinum, causing disruption of the right crus (**Figure 3**). Ports were placed as follows: 1 × 12-mm port 15 cm from the costal margin, ventrally; 1 × 12-mm port in the left midclavicular region, subcostal;

1 × 5-mm port left anterior axillary line; and 1 × 5-mm port to the right midclavicular region. A Nathanson liver retractor was used (Cook Medical, Bloomington, Indiana). The hiatal dissection was done, and then the esophagus was mobilized and a sling placed around it. The tumor was mobilized and dissected from the diverticulum. This esophageal tumor was completely excised macroscopically (**Figure 4**). The diverticulum required excision with a 60-mm Echelon Endopath stapler with a vascular cartridge (Ethicon, Somerville, New Jersey). The esophageal muscle was closed over this with 2/0 polysorb sutures (Covidien, Mansfield, Massachusetts) and an anterior myotomy was performed onto the gastric cardia with a posterior 180-degree fundoplication. Two 24-Fr Robinson drains (Smiths Medical, Dublin, Ohio) were inserted before closure.

Postoperatively, the patient recovered well. A nonionic swallow test on day 5 showed no evidence of a leak (**Figure 5**). The patient tolerated a sloppy diet and was discharged home on postoperative day 7. No complications were encountered.

Pathological examination demonstrated an esophageal leiomyoma (6 × 2 × 3 cm). No overt features of leiomyosarcoma were present. The esophageal diverticulum was chronically inflamed, with no evidence of dysplasia or malignancy.

The patient was seen in the outpatient clinic at 1 month postoperatively, and her symptoms had completely resolved.

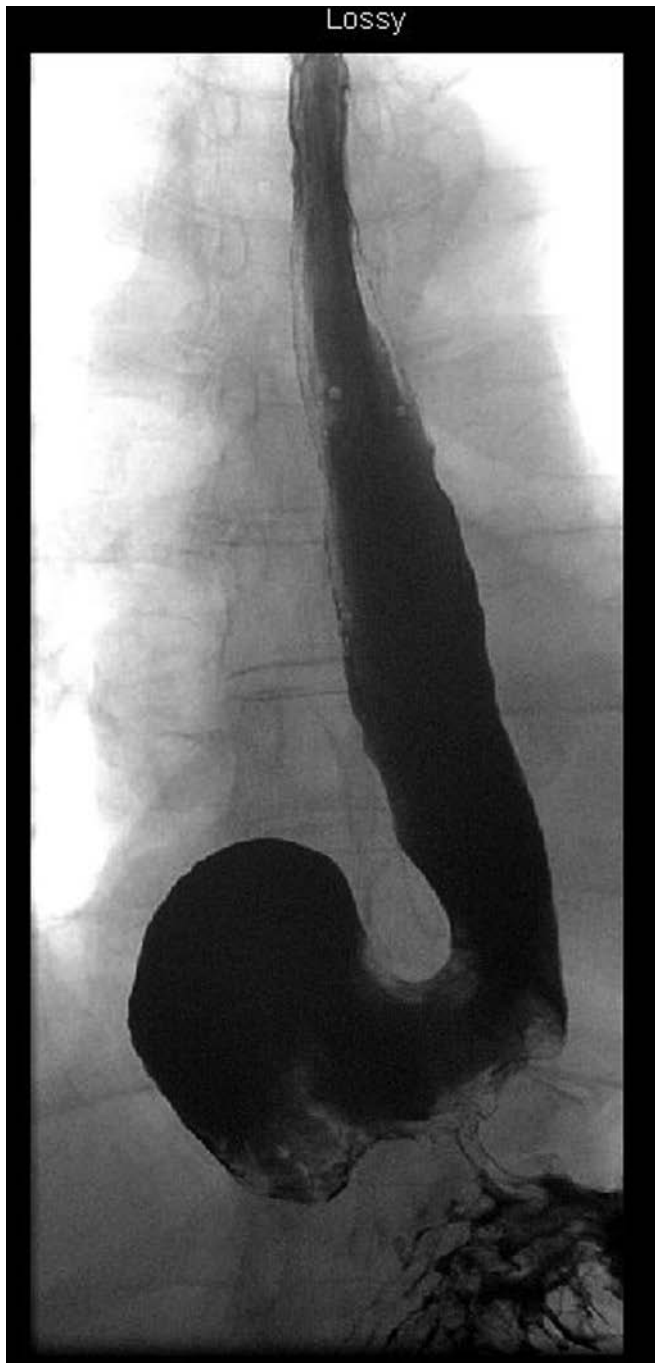


Figure 1. Pre-operative barium swallow.

DISCUSSION

Leiomyomas are rare benign tumors of the esophagus, most of which are intramural and located in the distal region. Only 2% are extraesophageal and in 50% of cases, patients are asymptomatic and the masses are found incidentally.¹ Laparoscopic



Figure 2. Pre-operative CT Scan.



Figure 3. Laparoscopic view of esophageal tumor, sling placed around esophagus.

resection of an extraesophageal leiomyoma in which the mass was found previously on imaging before surgery has been described.¹ Laparoscopic and thoracoscopic approaches for leiomyoma enucleation are becoming the standard now because of the reduced trauma, fewer postoperative complications, and shorter hospital stays.^{1,2}

Epiphrenic esophageal diverticula are mucosal outpouchings in the distal 10 cm of the esophagus and are also rare.³ Nearly all are pulsion diverticula and are associated with motility disorders such as achalasia and diffuse esophageal spasm.⁴ Traction diverticula are true diverticula, most commonly found in the midesophagus, and occur as a result of a pulling force or contracture from chronic inflammation involving mediastinal structures near the esophageal wall.⁵



Figure 4. Laparoscopic view of esophagus post tumor removal and oversewing of the removed and stapled diverticulum.

Thoracoscopic, laparoscopic, and combined surgical approaches of symptomatic pulsion epiphrenic esophageal diverticulum have been described.^{3,4,6}

Procedures to resect esophageal diverticula are not without significant risk of morbidity, namely from esophageal leak, pneumonia, and empyema. Leaks, most of which occur early, are the most commonly reported complication, with rates between 0% and 33% and a cumulative leak rate of approximately 14%.³

One case of thoracoscopic resection of both a midesophageal leiomyoma and diverticulum has been described previously.² Myotomy and fundoplication were not performed. We believe this to be the first laparoscopic resection of an extraesophageal leiomyoma in combination with a distal traction diverticulum. The technique provides for safe resection of a tumor and diverticulum.

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Figure 5. Post operative swallow study.

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