Brief Report

Laparoscopic transgastric esophageal mucosal resection: 4-year minimum follow-up


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Abstract

BACKGROUND: The management of high-grade esophageal dysplasia has included surveillance, endoscopic ablative techniques, and esophagectomy. Herein we describe an alternative treatment, laparoscopic transgastric esophageal mucosal resection.

METHODS: Laparoscopic transgastric esophageal mucosal resection was accomplished through an anterior gastrotomy. The mucosa was stripped from the Z-line to the proximal extent of the abnormal epithelium. The gastrotomy then was closed with a linear stapler, and a Nissen fundoplication was performed.

RESULTS: Six patients with high-grade dysplasia of the distal esophagus underwent mucosal resection. After 4 to 7 years of endoscopic surveillance, all patients have regenerated squamous epithelium. One patient developed nondysplastic Barrett’s esophagus after 2 years and was treated medically. Two strictures were treated successfully with dilatation.

CONCLUSIONS: Laparoscopic transgastric esophageal mucosal resection was a reasonable treatment for high-grade dysplasia in this small sample of patients. This technique is a potential alternative treatment for high-grade dysplasia of the esophagus.
scopic transgastric mucosal resection has 3 main components: (1) en bloc resection of the complete segment of abnormal esophageal mucosa (limited to the lower 5 cm of esophagus); (2) repair of any coexisting hiatal hernia; and (3) concomitant performance of an antireflux procedure. The first component is possible with some endoscopic resection methods, but the second and third components are not possible with present technology. Laparoscopic transgastric mucosal resection yields an intact segment of esophageal mucosa, which can be oriented anatomically for pathologic examination (although the need for an en bloc specimen has not been shown).

Laparoscopic transgastric mucosal resection treats 2 underlying conditions associated with high-grade dysplasia: hiatal hernia and gastroesophageal reflux. Endoscopic ablative therapies, however, are not intended to reduce reflux. Endoscopically treated patients will need to stay on lifelong acid suppression. Reflex of gastroduodenal contents (including bile in some patients) presumably will continue. The hiatal herniorrhaphy and the Nissen wrap that is performed with laparoscopic transgastric mucosal resection address the primary problem that these patients have: reflux of gastroduodenal contents.

A drawback of this procedure is that laparoscopic resection can reach only about 5 cm proximal to the Z-line. With current laparoscopic instrumentation, the patient with a longer segment of Barrett’s might not be resected completely with this technique. Laparoscopic transgastric mucosal resection requires general anesthesia, port insertion, mediastinal dissection, fundal mobilization, and a gastrotomy. Two of 6 patients (33%) in our series developed strictures after laparoscopic transgastric mucosal resection. The rate of stricture formation with endoscopic ablation has ranged up to 30%, depending on the energy type and quantity. Stricture formation after mucosal ablation (both in the present report and historically) has been amenable to endoscopic dilatation.

Laparoscopic transgastric esophageal mucosal resection was completed in 6 patients with no progression of disease and one limited recurrence. Morbidity was limited to 2 strictures, both dilated. Further study will be required for determination of the comparative efficacy and safety of laparoscopic transgastric mucosal resection for treatment of high-grade dysplasia. Given its minimally invasive approach to treating both the pathology and the underlying cause of high-grade dysplasia, laparoscopic transgastric mucosal resection might be a reasonable treatment to evaluate in future trials of dysplasia therapy.

References


