Endoscopic Surveillance of Duodenal Polyposis After Total Gastrectomy in Familial Adenomatous Polyposis

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ABSTRACT

The lifetime incidence of duodenal polyposis in familial adenomatous polyposis (FAP) approaches 100%, and duodenal cancer is the most common malignancy once colectomy is performed. The incidence of gastric cancer is increasing in patients with FAP, and when gastric polyps with high-grade dysplasia or cancer are present, a total gastrectomy with Roux-en-Y esophagojejunostomy is indicated. The altered anatomy after surgery and presence of adhesions from a previous colectomy make endoscopic surveillance of the duodenum with standard equipment difficult. This case report highlights an approach to duodenal polyposis surveillance in FAP after total gastrectomy with Roux-en-Y esophagojejunostomy.

INTRODUCTION

Duodenal cancer is the second most common malignancy in familial adenomatous polyposis (FAP). Upper endoscopic surveillance with visualization of the ampulla, and removal of duodenal polyps >10 mm, is recommended starting at the age of age 20–25 years.1 The Spigelman stage of duodenal polyposis guides the frequency of endoscopic surveillance and need for duodenectomy. Although more uncommon than duodenal cancer, the incidence of gastric adenocarcinoma is increasing in FAP. Gastric cancer occurs in the proximal stomach usually in the setting of massive, proximal gastric polyposis.2 A thoughtful surgical approach is prudent for patients with FAP.
found to have curative gastric adenocarcinoma or gastric polyposis with high-grade dysplasia. Total gastrectomy is the preferred approach for the management of advanced gastric neoplasia, provided that mesenteric desmoids do not negatively affect restoring gastrointestinal continuity. A standard 50–60 cm Roux limb, with or without an aboral jejunal pouch, is performed after gastrectomy, making subsequent endoscopic surveillance of the duodenum difficult. There is a lack of data on duodenal surveillance in patients who have undergone gastrectomy. We report the utility of anterograde balloon enteroscopy in a patient with FAP after total gastrectomy. The identification and resection of large duodenal polyps with this approach highlights the technical feasibility and importance of continued duodenal surveillance after gastrectomy in FAP.

**DISCUSSION**

This case highlights the importance and challenges of duodenal surveillance in patients with FAP who require total gastrectomy. Although it was possible to reach the duodenum with balloon enteroscopy in our patient, this might not be possible in similar cases after gastrectomy and Roux-en-Y esophagojejunostomy reconstruction because adhesions with fixed segments of bowel, or desmoids, can limit deep insertion of balloon enteroscopes. In addition, endoscopic interventions can be difficult through a deeply inserted balloon enteroscope because both the passage of devices through the accessory channel and scope maneuverability can be limited, making complex endoscopic mucosal resection and management of its possible complications challenging to perform. In addition, if an ampullary adenoma is present, attempting an endoscopic papillectomy would be exceedingly challenging to perform through a balloon enteroscope. Surgically, performing a gastrectomy with jejunal interposition, rather than gastrectomy with Roux-en-Y esophagojejunostomy, would facilitate duodenal endoscopic access; however, this surgical approach is associated with disabling symptomatic bile reflux after the loss of the pylorus and lower esophageal sphincter. The duodenal polyposis burden must be considered when determining simultaneous management of the duodenum and stomach. A tailored surgical approach including complete duodenectomy may be considered for definitive management of severe polyposis after gastrectomy but is fortunately rarely required. Future studies are needed to evaluate the long-term risk of duodenal and ampullary malignancy in patients with FAP undergoing gastrectomy with Roux-en-Y esophagojejunostomy and to explore other surgical reconstruction techniques, enhancing the feasibility and technical success of duodenal surveillance. We recommend endoscopic removal of large or histologically advanced duodenal or ampullary lesions before gastrectomy, and if Spigelman stage IV polyposis is present, duodenectomy should be performed. After surgery, balloon enteroscopy should be standardly used for duodenal polyposis surveillance and removal of large polyps in the duodenum.

**DISCLOSURES**

Author contributions: RS Shah wrote the manuscript. N. Mehta, G. Mankaney, MR Walsh, CA Burke, and A. Bhatt revised the manuscript for intellectual content. A. Bhatt is the article guarantor.
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