



ELSEVIER

Contents lists available at [ScienceDirect](#)

## Best Practice & Research Clinical Gastroenterology



13

### The role of surgery in the treatment of endoscopic complications<sup>☆</sup>



Peter Dixon, MD, Resident, General Surgery,  
Gopal C. Kowdley, MD, PhD, FACS, Program Director,  
General Surgery Residency,  
Steven Clark Cunningham, MD, FACS, Director of Pancreatic  
and Hepatobiliary Surgery, Director of Research<sup>\*</sup>

*Department of Surgery, Saint Agnes Hospital Center and Cancer Institute, Baltimore, MD, USA*

#### A B S T R A C T

#### Keywords:

Endoscopy  
Complications  
Repair  
Resection  
Drainage  
Surgery  
Operation

As the number, diversity, and complexity of endoscopic complications has increased, so too has the number, diversity, and complexity of operative interventions required to treat them. The most common complications of endoscopy in general are bleeding and perforation, but each endoscopic modality has specific nuances of these and other complications. Accordingly, this review considers the surgical complications of endoscopy by location within the gastrointestinal tract, as opposed to by complication types, since there are many complication types that are specific for only one or few locations, such as buried-bumper syndrome after percutaneous endoscopic gastrostomy and pancreatitis after endoscopic retrograde cholangiopancreatography, and since the management of a given complication, such as perforation, may be vastly different in one area than in another area, such as perforations of the esophagus versus the retroperitoneal duodenum versus the intraperitoneal duodenum. It is hoped that this review will provide guidance for gastroenterologists considering a particular procedure, either to assess the risks for surgical complications in preparation for patient counseling, or assist in assessing a patient who seems to be having a severe complication, or to learn what operation might be required to treat a given complication and how that operation might be performed. As

<sup>☆</sup> Prepared for: *Best Practice & Research Clinical Gastroenterology* as an invited contribution to “Complications in Endoscopy”, Guest Editors: Tomas Hucl, Mário Dinis-Ribeiro, Ian Gralnek & Nageshwar Reddy.

<sup>\*</sup> Corresponding author. Saint Agnes Hospital, 900 Caton Avenue, MB 207, Baltimore, MD 21229, USA. Fax: +1 410 719 0094. E-mail address: [Steven.Cunningham@stagnes.org](mailto:Steven.Cunningham@stagnes.org) (S.C. Cunningham).

with many operations, those for the treatment of endoscopic complications are typically performed only when less invasive, nonoperative strategies fail.

© 2016 Elsevier Ltd. All rights reserved.

---

## Introduction

Endoscopic procedures have evolved from diagnostic screening tools in otherwise healthy patients to now include a much broader spectrum of increasingly complex procedures in patients who may be increasingly ill. As these procedures become more complex and more common, complications are expected to follow accordingly. According to a 2012 Medicare study of the burden of gastrointestinal disease in the United States, there were nearly 19 million endoscopic procedures performed in 2009, with a significantly increasing trend among Medicare recipients over the last decade [1]. While one of the most effective measures to avoid complications is to avoid unnecessary procedures, complications do arise even in the best and most experienced hands, and when they do, rapid identification and early intervention are essential.

Although the definition of endoscopic complications is addressed elsewhere in this issue, suffice it to say that here we will consider complications to be, as defined by Cotton et al., an adverse event preventing completion of the planned procedure (excluding technical failure), resulting in admission or prolongation of admission to the hospital, or additional procedures or consultations [2], a definition that is very similar to one of the standard definition used for a surgical complication: any deviation from the ideal postoperative course that is not inherent in the procedure and does not comprise a failure to cure [3–6].

Complications that arise independent of instrumentation, such as those related to the effects of sedation, including cardiac arrest and myocardial infarction, and pulmonary events including hypoxia, aspiration events, and pulmonary embolisms are discussed elsewhere, as is the essential topic of prevention. Here we shall focus on the surgical sequelae of endoscopic complications, viz., those requiring operation, and shall briefly describe the operative treatment of these complications. Although some complications can occur with any endoscopic modality, such as bleeding and perforations, each endoscopic modality is associated with a specific set of risks and unique complications and therefore this review is organized by location of the endoscopic procedures within the gastrointestinal (GI) tract, from the esophagus to the colorectum.

## Esophagogastroduodenoscopy (EGD)

Upper GI endoscopy is associated with a low complication rate of 0.13–0.5% and a mortality of 0.004–0.05% [7,8]. Although these rates are very low, nearly three million EGDs are performed annually, in United States Medicare patients alone, such that 3,900–15,000 clinically significant complications may be expected annually in this population.

### *Perforation*

While perforations are rare (0.009–0.04%) during diagnostic EGD, therapeutic upper endoscopy has a much higher risk of perforation, although these rates vary widely in the literature (0.4–10%) [7]. EGD-associated perforations levy an especially heavy burden when the perforation is esophageal, and mortality rates in these cases may be as high as 25% [7]. Not surprisingly, rates of perforation and severity of complications tend to increase with worse pathology, more complicated procedures, and more aggressive treatment. Risk factors associated with perforation include Zenker diverticulum, stenosis or achalasia, duodenal diverticula, neoplastic lesions, and anterior cervical osteophytes [8–10]. Perforation of the esophagus may manifest as pneumomediastinum, mediastinitis, respiratory distress, and respiratory failure, pain, dysphagia, fever, and subcutaneous emphysema, and, when

Download English Version:

<https://daneshyari.com/en/article/5654535>

Download Persian Version:

<https://daneshyari.com/article/5654535>

[Daneshyari.com](https://daneshyari.com)