Published in final edited form as:

Gastrointest Endosc. 2016 March ; 83(3): 661–662. doi:10.1016/j.gie.2015.09.006.

Acute and Chronic Duodenal Perforations: Endoscopic Suturing for Primary Closure and Pyloric Exclusion

Alexander Lee, MD¹, Marvin Ryou, MD¹, and Christopher C. Thompson, MD, MSc^{1,**}

¹Division of Gastroenterology, Brigham & Women's Hospital, Harvard Medical School, Boston, MA, USA

Management of duodenal perforation can be challenging for the GI endoscopist. Traditionally, surgical management is required, but operative intervention may not be viable in patients with acute illness, significant comorbidities, or poor tissue quality at the perforation site.

In this video, we use different methods of endoscopic suturing in a case of acute duodenal perforation (defect created at the same endoscopic session) as well as a case of chronic duodenal perforation (defect created during surgery 3 months prior) (Video). A key factor differentiating the 2 types of perforation is tissue quality at the defect's margins (Figure 1). Acute perforations typically have mildly inflamed and minimally macerated margins amenable to primary closure, but chronic perforations generally have significant mucosal inflammation at the margins which may lead to poor healing after primary closure.

For the acute perforation, we perform primary repair using endoscopic suturing; the defect's size and orientation were optimal for this intervention. For the chronic perforation, we use endoscopic suturing to reduce the exposure of the tissue margins to gastric secretions by endoscopic pyloric exclusion and to biliopancreatic secretions by placement of a percutaneous suction catheter; this facilitates decreased inflammation at the tissue margins and healing by secondary intention.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

^{**}Corresponding Author cthompson@hms.harvard.edu, Brigham & Women's Hospital, Division of Gastroenterology, 75 Francis St, Boston, MA 02115, (617) 525-8266.

Publisher's Disclaimer: This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Figure 1. Acute versus chronic duodenal perforations. Tissue margins of acute perforation (A) are noted to be less inflamed and less edematous than those of chronic perforation (B).