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Strut perforation of the duodenum by a WallFlex duodenal stent: detection using multi-detector CT

To the Editor:

We read with interest the excellent article "Efficacy and safety of the new WallFlex enteral stent in palliative treatment of malignant gastric outlet obstruction (DUOFLEX study): a prospective multicenter study," by van Hooft et al.¹ We have had a similar experience at our institution (unpublished data), achieving significant palliation in many of these patients who otherwise have limited life expectancy. We would like, however, to highlight a case of delayed stent-strut perforation of the duodenal wall that led to lethal peritonitis. This case highlights both the need for clinical vigilance in the post-deployment period and the role that multi-detector CT can play in assessing potential stent-related complications in the acute setting.

A 79-year-old woman with metastatic gastric adenocarcinoma underwent transoral fluoroscopic-guided gastroduodenal stent insertion (Wallflex duodenal stent [20 mm × 7 cm], Boston Scientific, Natick, Mass) for palliation of gastric outlet obstruction. The procedure was uncomplicated; the stenosis was first crossed with a 6F angled catheter over a 0.035-inch Terumo guidewire (Terumo Corp, Tokyo, Japan), and the stent was deployed over a 0.035-inch super-stiff Amplatz guidewire (Cook Medical, Inc., Bloomington, IN). She did well and was discharged 2 days later, after resumption of a soft diet; however, she presented to the emergency department 10 days after discharge with acute abdominal pain and vomiting. Physical examination revealed severe epigastric guarding, rebound, and hypotension. Urgent multi-detector CT scan, after administration of oral and intravenous contrast, showed features of bowel perforation with pneumoperitoneum, hyperdense free fluid, and some extraluminal contrast. Multiplanar reconstruction of the CT data set (Leonardo 3D Workstation, Siemens, Malvern, Pa) in the oblique plane at the distal landing site of the stent confirmed perforation of the wall of the duodenum by the stent strut (Fig. 1, arrow) with direct extravasation of oral contrast from the bowel lumen into the peritoneal cavity. Despite aggressive resuscitative efforts, the patient died 2 hours after the scan.

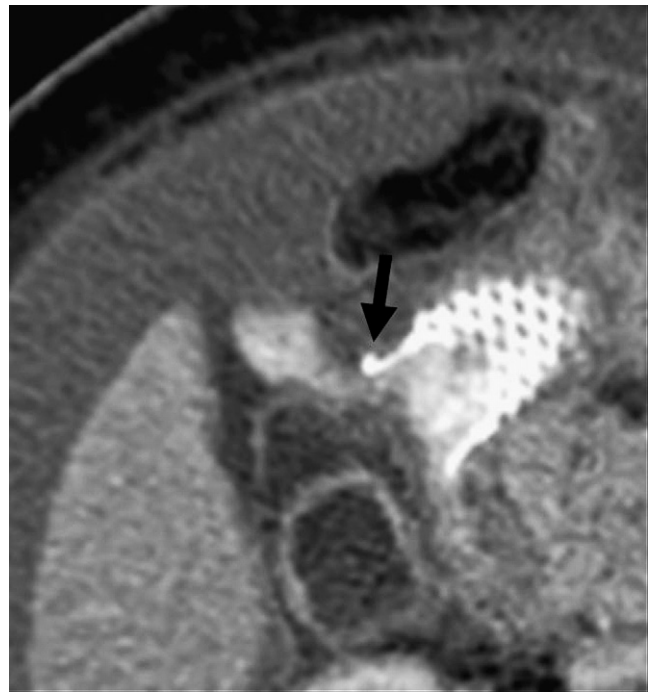


Figure 1. Multiplanar reconstruction from the CT data set in the oblique plane at the distal landing site of the stent confirmed perforation of the wall of the duodenum by the stent strut (arrow), with direct extravasation of oral contrast from the bowel lumen into the peritoneal cavity.

Antro-pyloric stent placement via the endoscopic or transoral fluoroscopic route is commonly used for palliation of malignant gastric outlet obstruction and can be safe and effective in alleviating obstructive symptoms.¹⁻⁵ Strut perforation of the bowel wall is an extremely rare complication, with few reported cases.^{4,6} Stent-related dysfunction with the WallFlex duodenal stent is even rarer,¹ and the current body of literature on post-deployment stent surveillance has been largely limited to the use of plain radiography.

The newer generation WallFlex duodenal stent, which was designed specifically for the antro-pyloric region, is safe and, based on our experience, superior to nonduodenal-specific Wallstents for deployment in this region in terms of long-term stent patency and migration rates. However, as is the case with all enteric stent insertions, delayed strut perforation can still occur with these devices, and we would like to caution all operators to bear this potentially fatal complication in mind when patients present with acute symptoms; even in cases in which the immediate post-stenting period is uneventful. Although conventional radiography will suffice in most cases (it is able to detect migration, strut fractures, etc), we recommend the use of multi-detector CT with administration of oral contrast in suspected cases of stent-strut bowel perforation.

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The Boston bowel preparation scale: reliable not only for colonoscopy-oriented research but clinical practice also

To the Editor:

We appreciate the study by Lai et al¹ entitled "The Boston bowel preparation score: a valid and reliable instrument for colonoscopy-oriented research," and we have been using their concept in recording the quality of the preparation after washing, suctioning, and cleaning out the colon instead of the appearance on first look to evaluate the quality of colon preparation. Initially, we evaluated the quality of the colon preparation on the basis of the cecal photographs, based on the fact that the cecum appears to be the last to get cleaned out and is often obscured by stool despite excellent cleansing of the rest of the colon.² We later devised a scale³ in which the final score is given by assessing the quality of preparation in each colon segment rather than scoring the colon as a whole, as suggested by Lai et al.¹ We have observed a correlation between the quality of the colon preparation and polyp detection rate.

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Mucosal scars in collagenous colitis

To the Editor:

I read with interest the report by Couto et al¹ on the endoscopic findings in collagenous colitis, describing unique spontaneous linear-type scars in the left colon.² In fact, collagenous colitis causes impressive scars (Fig. 1).

We previously hypothesized that tears can occur spontaneously in microscopic colitis after only gentle insufflation of the colon.³ It is plausible that the increased intracolonic pressure in the left colon leads to spontaneous mucosal tears with defecation. When submucosal collagen is abundant, as in microscopic colitis, these tears will then heal to scarlike ridges (chronic changes). It is attractive to speculate that the lesions reported by Couto et al are indeed a continuum of lesions and might even be observed in the same

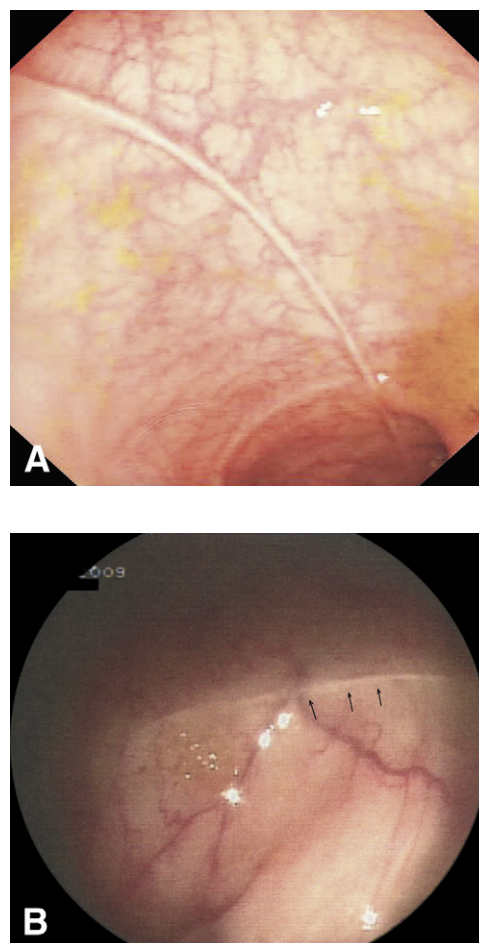


Figure 1. A and B, Left colon scars, close to the splenic flexure, both diagnosed as collagenous colitis on biopsy.