



Endoscopic identification and clipping of an anastomotic leak after colorectal surgery by use of methylene blue dye and over-the-scope clipping system

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A 56-year-old woman with high-grade serous ovarian carcinoma who had undergone extensive surgical debulking and rectosigmoid and cecal resection with side-to-side anastomosis presented on postoperative day 14 with sepsis in the setting of a pelvic collection (Fig. 1). An ileocecal leak was identified by a sinogram (Fig. 2) performed with the use of pelvic drains placed by the interventional radiology service, suggesting a postsurgical ileocecal anastomotic leak. After multidisciplinary discussions involving the surgery and interventional radiology services, endoscopic intervention was deemed to be the best minimally invasive approach for closure of this anastomotic leak

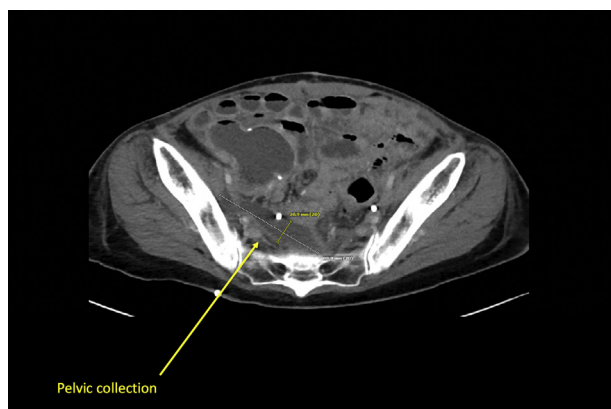


Figure 1. CT view of the abdomen and pelvis showing a pelvic collection.

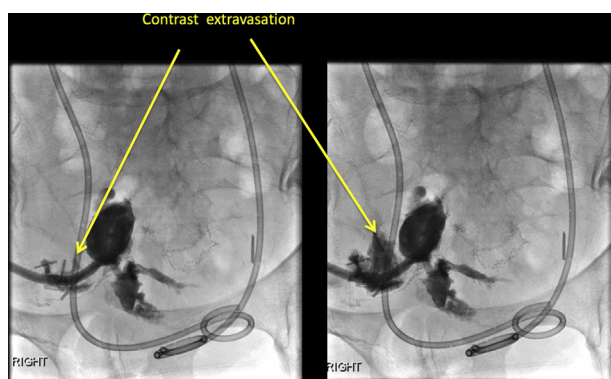


Figure 2. Sinogram suggesting an ileocecal leak.

so the patient could proceed with chemotherapy and radiation afterward.

Colonoscopy revealed a patent side-to-side ileocolonic anastomosis with an intact staple line in the proximal ascending colon, 80 cm above the anal verge. Despite using a distal clear cap attached to the colonoscope tip, we were not able to localize the leaking site. Methylene blue was then injected through the external pelvic drains (Fig. 3), with successful identification of the site of the anastomotic leak (Fig. 4) and a fistulous communication with the pelvic cavity. The mucosal opening of the fistula was ablated with argon plasma coagulation (Fig. 5), and the anastomotic leak site was closed with an over-the-scope clipping system (OTSC; Ovesco Endoscopy, Tübingen, Germany). On



Figure 3. External pelvic drain through which the methylene blue dye is injected.



Figure 4. Methylene blue intravasation identifying the anastomotic leak site.



Figure 5. Ablation of the mucosal opening of the fistula by argon plasma coagulation.

subsequent instillation of more than 20 mL of methylene blue to the external right pelvic drain, there was no intravasation of the dye. A repeated CT scan 5 days after the procedure confirmed interval resolution of the pelvic collection with evidence of the clip in place (Fig. 6).

Anastomotic leak is one of the most serious adverse events after colorectal surgery, with reported rates ranging from 3% to 26% and mortality rates of 6% to 22%.¹ Traditionally, the treatment of choice is surgical correction; however, data for the use of less-invasive endoscopic interventions have been promising, including placement of endosponges, stents, or clips.² The advantage of OTSCs over conventional clips is that they can capture larger amounts of tissue, offering a serosa-to-serosa tissue approximation.³ The use of OTSCs in treating anastomotic leaks has been described in similar case scenarios.⁴ Locating the anastomotic leaks



Figure 6. Postprocedural CT view showing interval resolution of the pelvic collection and evidence of the clip in place.

endoscopically can be quite challenging, extending the time, and limiting the value, of the procedure. Methylene blue administration has been described to successfully locate anastomotic leaks intraoperatively.⁵ Given the anticipation of this technique to be more frequently used in clinical practice, we aimed to demonstrate it (Video 1, available online at www.VideoGIE.org) and to display the value of methylene blue in the localization of anastomotic leaks if an external drain is available.

DISCLOSURE

All authors disclosed no financial relationships relevant to this publication.

Abbreviation: OTSC, over-the-scope clip.

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