

CASE REPORT

Nonoperative management of an anastomotic leak following rectosigmoid resection and anastomosis for Stage IV endometriosis

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Abstract

Anastomotic leakage is a dreaded complication of gastrointestinal surgery. The complication is difficult to manage and is associated with prolonged hospitalizations and increased morbidity and mortality. We present the nonsurgical management and the use of a fibrin sealant for an anastomotic leak that followed rectosigmoid resection and anastomosis for Stage IV endometriosis. This approach requires a clinically stable patient who is willing to follow-up over a prolonged period of time until the leak is completely sealed. Tissue sealants can be considered when an air leak or fistulous tract persists despite drainage and antibiotics.

INTRODUCTION

We present the nonsurgical management and the use of a fibrin sealant for an anastomotic leak that followed rectosigmoid resection and anastomosis for Stage IV endometriosis.

CASE REPORT

A 43-year-old female presented to our tertiary care center with cyclic vaginal and rectal bleeding with magnetic resonance imaging that showed a 3-cm mass consistent with an endometrioma in the anterior wall of the sigmoid and upper vaginal wall. Sigmoidoscopy demonstrated normal rectal and colonic mucosa. Her past surgical history was significant for a total abdominal hysterectomy 4 years prior to presentation with pathology showing adenomyosis. She subsequently underwent an exploratory laparotomy, bilateral ovarian cystectomy of endometriomas, lysis of adhesions, bilateral salpingectomy and right para-ovarian cyst removal for cyclic pelvic pain and vaginal bleeding 1 year prior to presentation.

She underwent laparoscopic lysis of adhesions, robotic-assisted en-bloc resection of the apex of the vagina and portion of rectum with an end-to-end anastomosis 6 cm from the anal verge, left ureterolysis, bilateral salpingo-oophorectomy and pelvic drain placement. During the first attempt at anastomosis, the end-to-end anastomosis stapling device misfired. The second attempt was successful and the anastomosis was reinforced with interrupted silk sutures. Air leak test was negative. Pathology revealed extensive endometriosis of the rectum and sigmoid colon. She was discharged on postoperative Day 4 following a bowel movement and pelvic drain removal. Her white blood cell (WBC) count was 9.4.

On postoperative Day 5, she presented to the emergency department and was readmitted for subjective fever, leukocytosis (WBC 11.4) and abdominal distension. A computed tomography (CT) scan was performed (Fig. 1) that showed a large amount of pneumoperitoneum and multiple fluid gas collections. The patient was afebrile on admission, her vital signs were within normal limits and the patient declined operative

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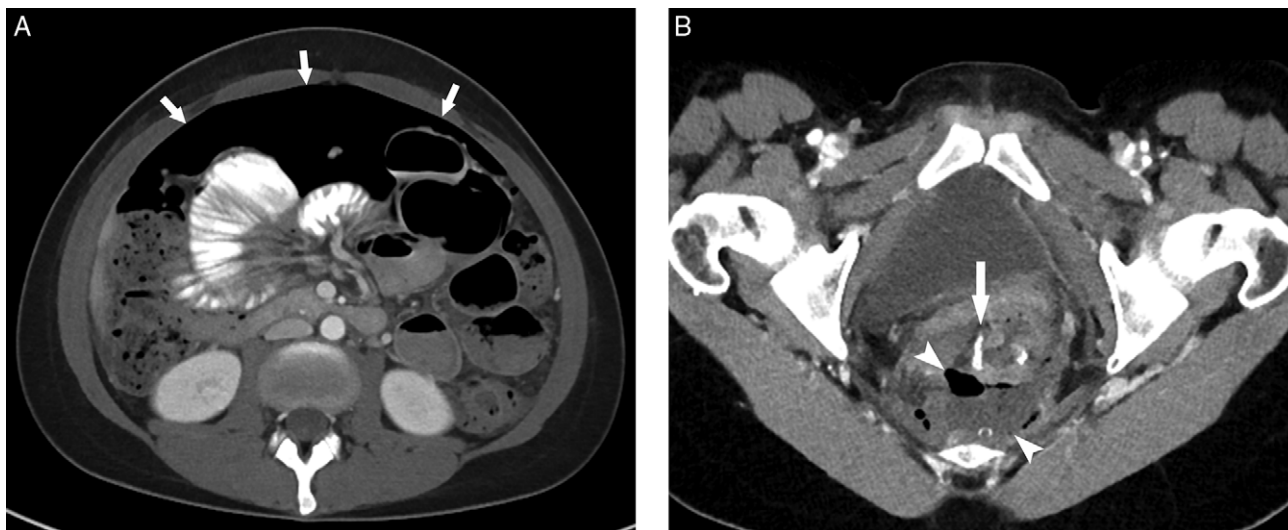


Figure 1: CT scan of the abdomen with i.v. and oral contrast from postoperative Day 5. (A) Large pneumoperitoneum found between bowel and abdominal wall (arrows). Gas- and fluid-filled loops of small bowel indicate ileus. (B) The radiopaque anastomotic staple line (arrow) and presacral extraluminal fluid and gas collection (arrowheads) are clearly shown.

management. She was started on broad-spectrum antibiotics, and interventional radiology placed a right upper abdomen drain. Cultures of the drain fluid were positive for enterococcus faecalis and *Escherichia Coli*. After 5 days, repeat CT showed the improvement of the pneumoperitoneum and no extraluminal contrast. The patient followed up for a repeat CT scan on postoperative Day 13, which showed an air/fluid collection in the presacral space suspicious for an anastomotic leak. Interventional radiology placed a left lower quadrant drain anterior to the anastomosis and a left transgluteal drain into a recurrent presacral collection (Fig. 2).

On postoperative Day 21, there was peripheral enhancement of the presacral collection, and the transgluteal drain was upsized. On postoperative Day 28, the left lower quadrant drain was removed due to minimal output and resolution of the fluid collection on imaging. The presacral drain was kept in place. On postoperative Day 32, a CT scan showed interval decrease in the presacral collection size. A tube sinogram showed that contrast immediately leaked from the presacral space into the rectum through a focal anastomotic dehiscence. During this time, the patient remained asymptomatic with a WBC of 6. The presacral drain was left in place and she returned to her home country on postoperative Day 46 with a plan for a repeat sinogram.

The patient returned to the USA for a sinogram on postoperative Day 86, which showed a persistent communication with the rectosigmoid at the surgical anastomosis. There was no residual cavity or fluid collection. The decision was made to attempt closure of the fistula with a fibrin sealant.

The fibrin sealant administration procedure was performed with the patient in the prone position for easy access to the transgluteal drain, and with local anesthetic. The drain was injected with contrast, fluoroscopic and radiographic evaluation confirmed persistence of the anastomotic leak (Fig. 3). The contrast flowed easily and immediately into the rectum. The tract was well defined, and there was no purulence. The existing catheter was removed over a guidewire and a catheter of smaller caliber was advanced into the tract. TISSEEL® fibrin sealant (Baxter Healthcare Corporation, Deerfield, IL) was injected into the catheter in sufficient quantity to fill abundantly across the anastomotic opening and was given until some of it refluxed

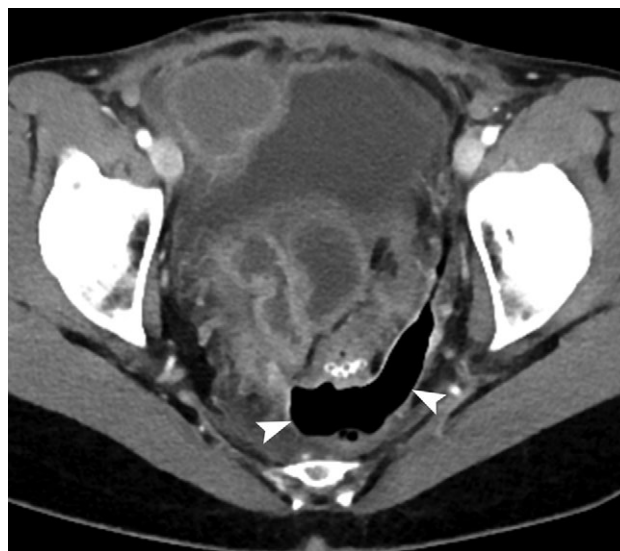


Figure 2: CT scan of pelvis from postoperative Day 13. Extraluminal gas in the presacral space suggested a persistent anastomotic leak (arrowheads).

back to the skin entry site. Two days following fibrin sealant injection, the patient was asymptomatic and the drain was removed as it had no output. The patient has been contacted three times over the last 4 months, has no complaints, returned to work and restarted her hormone replacement.

DISCUSSION

The development of a postoperative anastomotic leak is a feared complication due to the increased morbidity and mortality and the great amount of time, hospital resources and subsequent procedures needed for management [1]. The incidence of colorectal anastomotic leaks has been reported as between 1% and 19% [2]. However, the evidence on anastomotic leak is primarily based on studies involving patients with cancer and not

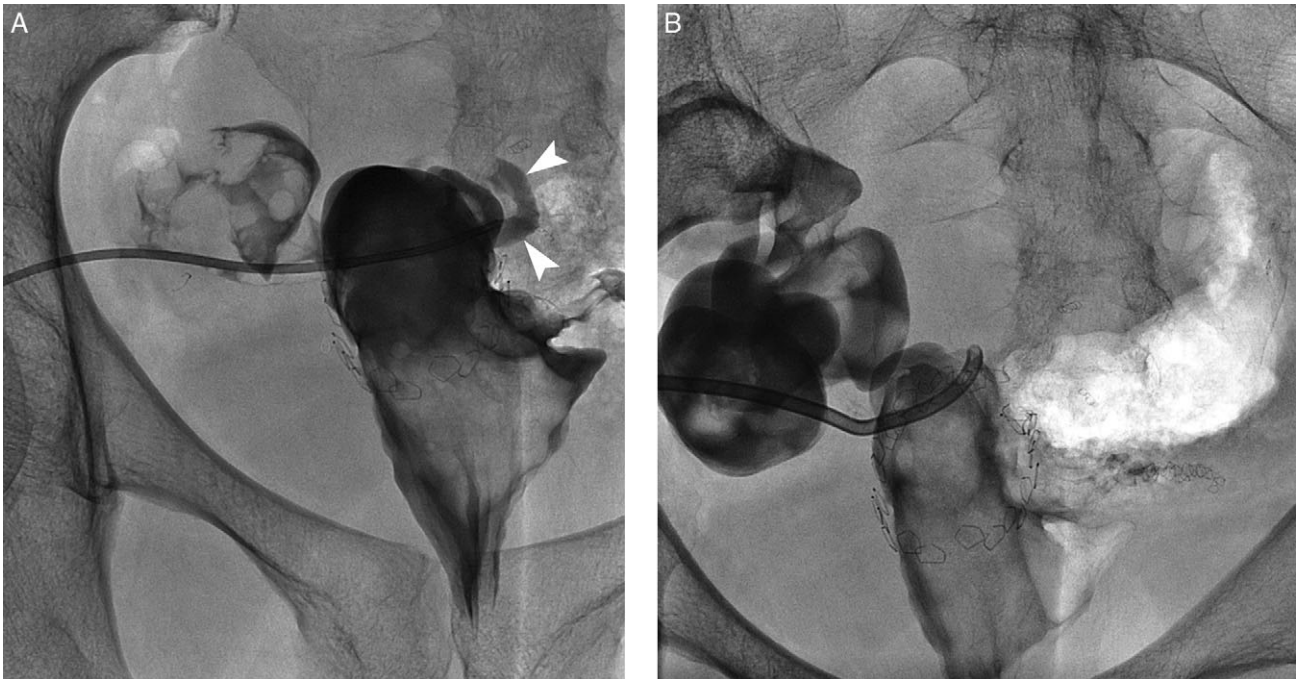


Figure 3: Radiographs of the pelvis obtained during fistulography and fibrin sealant administration. (A) Contrast injection of the fistula showed a mature thin tract (arrowheads) to the rectosigmoid without any residual abscess cavity (arrow). (B) After administration of the fibrin sealant, a drain was left in place away from the anastomosis to avoid disruption of the fibrin plug at the site of anastomotic leak. The fibrin sealant is not visible because it is radiolucent.

endometriosis. In a recent study on 41 patients who underwent laparoscopic, segmental, rectosigmoid resection for endometriosis, there was one anastomotic leak (2.4%) in a patient with an unprotected anastomosis [3].

Based on the patient's stable clinical features and the patient's desire to avoid repeat surgical intervention, we managed the patient by the expertise of our interventional radiology department. A previous study used a six-round modified Delphi research method to find consensus among a group of surgeons and interventional radiologists to determine standardized management algorithms [2]. Based on the article's algorithm, CT-guided drainage is appropriate for clinically stable patients with multiloculated collections and further research was required before further recommendations could be made regarding fibrin glue. Although the leukocytosis, pain and fluid collections improved with drain placement and antibiotics, the anastomotic connection persisted 86 days postoperatively. The connection was ultimately closed using a fibrin sealant administered into the fistulous tract. To the best of our knowledge, the use of fibrin glue has not previously been reported in the gynecologic literature following bowel resection for endometriosis. This approach requires a clinically stable patient who is willing to

follow-up over a prolonged period of time until the leak is completely sealed. Tissue sealants can be considered when an air leak or fistulous tract persists despite drainage and antibiotics.

CONFLICT OF INTEREST STATEMENT

None declared.

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