

## Small Bowel Obstruction due to Tubo-Ovarian Abscess

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Small bowel obstruction in a patient without a previous history of abdominal surgery is uncommon and usually will not resolve without surgery. We report the case of a woman without previous abdominal surgery who was admitted for small bowel obstruction and in whom laparotomy revealed a tubo-ovarian abscess entrapping a small bowel segment.

### Patient Description

A 35 year old woman presented to the emergency department because of abdominal pain, recurrent bile-stained emesis, obstipation and constipation for several hours. She had had diarrhea during the preceding 2 days. She had been previously healthy with no abdominal complaints and had never had surgery. Her past medical history was unremarkable except for recurrent pelvic inflammatory disease. She had normal regular menses and an intrauterine device had been inserted 2 years previously.

On physical examination the patient was in pain, afebrile, with a regular pulse of 90/minute and blood pressure 115/75 mmHg. The abdomen was slightly distended and soft, and generalized tenderness was noted without signs of peritoneal irritation. Rectal examination was normal. A complete blood count and blood chemistry were within normal limits. Plain abdominal X-ray films revealed slightly dilated small bowel loops (up to 3.5 cm diameter) with air-fluid levels, a minimal amount of air in the colon and rectum and no free air. This pattern was consistent with small bowel obstruction.

A nasogastric tube was inserted and drained approximately 250 ml of bile-stained fluid. The patient was admitted to the general surgery department for exploratory laparoscopy. A laparoscopic

camera was introduced via a 5 mm sub-umbilical port and revealed a mass adhering a small bowel loop to the left lower abdominal wall. The mass was not amenable for laparoscopic manipulation. A lower median laparotomy was performed. On dissection, a large amount of pus was drained from the mass and revealed an abscess on the left which entrapped a segment of the small bowel. Manual evaluation showed the bowel wall to be intact with no intrinsic pathology. There were no signs of malignancy on frozen section examination of the necrotic left salpings. Further exploration revealed a pyosalpings on the right with adhesion to a loop of small bowel. A left salpingectomy and right salpingotomy were performed and a drain was inserted.

The postoperative course was uneventful. The patient's intrauterine device was extracted. A transvaginal ultrasound performed on the seventh postoperative day demonstrated signs consistent with a mildly inflamed right salpings. The patient was discharged on the eighth postoperative day with normal bowel function. Cultures of blood and pus taken at the time of surgery and during her hospitalization were sterile. A transvaginal ultrasound and pelvic examination performed 2 months after discharge revealed no sign of residual infection or pelvic fluid collection.

### Comment

The most common cause of small bowel obstruction is postoperative adhesions. Other extraluminal pathologies include hernias, volvulus, intraabdominal masses, endometriosis and peritoneal carcinomatosis. Intraluminal pathologies are less common and include bezoars and gallstone. Intramural pathologies include

Crohn's disease, radiation enteritis, and primary or secondary neoplasms. When small bowel obstruction occurs in a patient without a previous history of abdominal surgery it is not likely to be due to peritoneal adhesions, and regardless of the underlying cause such obstruction will not usually resolve without surgery [1].

In our case, we opted to perform surgical exploration because the patient had not undergone previous abdominal surgery and the diagnosis of small bowel obstruction had been made. Although the patient had a previous history of pelvic inflammatory disease, there was no clinical evidence of active infection and therefore the finding of a tubo-ovarian abscess was unexpected.

Small bowel obstruction has been attributed to intraabdominal abscesses in a few cases [2,3]. Harris and Rudolph [2] reported 10 cases of acute appendicitis causing a mechanical small bowel obstruction. All were treated surgically; one case revealed peri-appendicular abscess as the cause of the obstruction. Kim et al. [3] reported 16 cases of small bowel obstruction secondary to acute sigmoid diverticulitis. All cases were diagnosed by computed tomography scan and all were treated eventually with surgical resection and proximal colostomy. Surgery was performed in eight patients immediately after CT, which revealed changes consistent with small bowel obstruction and abscesses in six patients and free intraperitoneal air in the other two. Surgery was later performed in the other eight patients for intractable abdominal pain, persistent small bowel obstruction due to intraperitoneal adhesions, increasing fluid collections, or new pneumoperitoneum.

Pelvic inflammatory disease has been

previously described as a cause of small bowel obstruction in a few cases [4,5]. These reports describe abdominal dissemination of chlamydial infection with the organism disseminated directly from the fallopian tubes into the peritoneum by lymphatic or hematogenous spread or by diagnostic procedures [2]. Elazary and team [5] reported the case of a 48 year old woman who had undergone laparotomy due to complete small bowel obstruction and a mass in the ascending colon. Exploration revealed a tubo-ovarian abscess entrapping a small bowel segment and a mass in the ascending colon. The small bowel loop was freed from the abscess and a right hemicolectomy was performed. The findings were related to *Actinomyces* spp. infection. Harez et al. [4] reported a 19 year old girl with pelvic inflammatory disease related to *Chlamydia trachomatis* who developed small bowel obstruction and was treated conservatively. In contrast to previous cases [4,5], our patient did not have clinical findings

suggestive of salpingitis or tubo-ovarian abscess.

This unusual case of small bowel obstruction secondary to a tubo-ovarian abscess in the absence of signs of peritoneal or pelvic infection called for a primary surgical approach. Although the treatment of tubo-ovarian abscess does not usually require a laparotomy and can often be managed conservatively with antibiotics and minimally invasive drainage, surgery would have been required in this setting. However, had signs of active pelvic infection been present, further non-invasive imaging may have been helpful in directing surgical management for abscess drainage.

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