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Case Report

Preperitoneal Herniation Into a Laparoscopic Port Site Without a Fascial Defect

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Background: Port site herniation is an uncommon event that usually occurs as a result of incomplete fascial closure. This allows the omentum or viscera to herniate through the incompletely closed defect. However, in laparoscopic surgery for morbid obesity, the omentum and viscera can herniate through the thick preperitoneal space even with a complete closure of the fascia.

Case Report: A 19-year-old female with BMI 55 underwent uneventful long limb laparoscopic Roux-en-Y gastric bypass. On postoperative day 1 the patient had limited pain, was ambulating well, and was tolerating sips of liquids. A limited upper GI series performed on postoperative day 2 revealed no leak or obstruction. Several hours later the patient developed abdominal pain associated with nausea, which progressed to vomiting. CT of the abdomen suggested a port site herniation into the left subcostal port. The cause of the obstruction appeared to be herniation through the left subcostal port site. At laparotomy, a segment of bowel just distal to the anastomosis was found herniated through the port site. The Richter's hernia was reduced. Careful inspection of the fascia revealed a complete fascial closure, with the strangulated portion of the bowel incarcerated in the preperitoneal space. Following repair of the preperitoneal defect, her subsequent recovery was unremarkable.

Conclusion: Laparoscopic surgery for morbid obesity presents the possibility for preperitoneal herniation. Closure, using a fascial closure device, under laparoscopic control, may offer a solution by closing both the fascia and peritoneum all at once.

Key words: Morbid obesity, bariatric surgery, laparoscopy, bowel obstruction, hernia, Richter's

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Introduction

Port site herniation is an uncommon but well described complication of laparoscopic surgery.¹ It usually results from a lack of or an incomplete closure of the fascia.²⁻⁴ This allows the omentum or viscera to herniate through the fascial defect. However, in laparoscopic surgery for morbid obesity, the omentum and viscera can herniate through the thick preperitoneal space, even with a complete closure of the fascia.⁵

Case Report

A 19-year-old female with a BMI of 55 underwent an uneventful long limb laparoscopic Roux-en-Y gastric bypass. A 3-cm left subcostal incision, through which the head of a 25-mm circular stapler (US Surgical, Norwalk, CT, USA) was inserted, was closed extracorporeally with two figure-of-eight sutures.

On the first postoperative day, the patient was ambulating well and tolerating sips of liquids. A limited upper GI series performed on the second postoperative day revealed no anastomotic leak. Twelve hours later, she developed nausea, which progressed to vomiting. A repeat contrast study was performed, which again revealed no proximal or distal anastomotic defects and no bowel obstruction. Physical examination did not reveal any evidence of an acute incisional hernia. Because of

repeated vomiting and increasing abdominal pain, a CT scan of the abdomen was performed which revealed a partial small bowel obstruction with the transition point just distal to the entero-enterostomy (Figure 1). The cause of the obstruction appeared to be a bowel herniation through the left subcostal port site.

At laparotomy, a segment of bowel 3 cm distal to the anastomosis was found herniated through the port site. The Richter's hernia was reduced, and inspection of the left subcostal port site revealed a complete fascial closure. The strangulated portion of the bowel had indeed herniated into the preperitoneal fat space (Figure 2). The preperitoneal fat space was repaired and a gastrostomy tube was inserted in the distal stomach. Her subsequent recovery was unremarkable.

Discussion

Laparoscopic port site herniation is reported to occur in 0.17% to 1.83% of patients.^{2,6} These events are attributable to a lack of or an incomplete closure of the fascial defect.^{2-4,7-10} However, in laparoscopic bariatric surgery prefascial herniation may also occur. These prefascial hernias can happen at any large port site (ie. where a circular stapler or laparoscopic gastric band is introduced) regardless of the adequacy of fascial closure. The morbidly obese are at high risk for prefascial hernias because of their substantially thicker preperitoneal space and their elevated intraabdominal pressure.¹¹⁻¹⁴

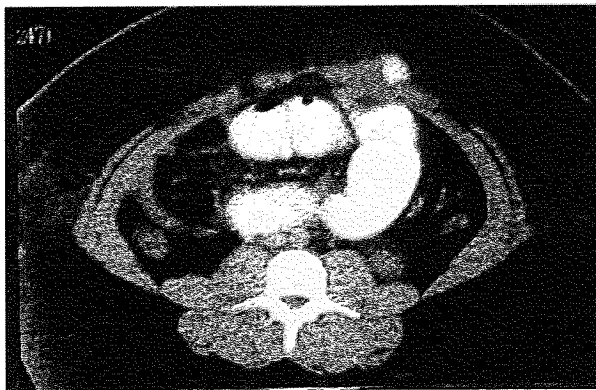


Figure 1. CT scan showing a partial small bowel obstruction, with the transition point just distal to the enteroenterostomy.

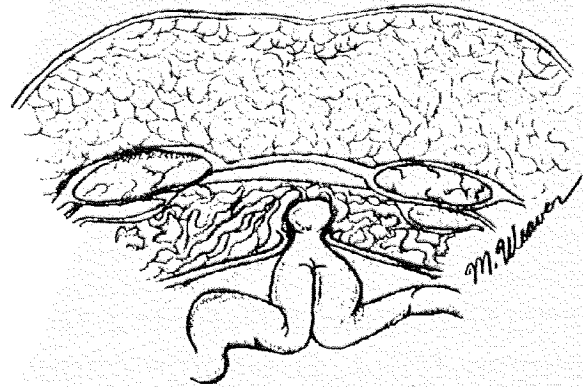


Figure 2. Illustration of the Richter's hernia with a complete fascial closure. The strangulated portion of the bowel is herniated into the preperitoneal fat space.

Diagnosis of prefascial hernias is impossible on physical examination because there is no palpable abdominal wall defect. Helpful imaging studies may include an upper GI series with small bowel follow-through or a CT scan that can demonstrate an obstructive pattern. Additionally, a CT scan can show herniation into a port site defect.^{3,15-17} This problem can be eliminated with adequate muscle relaxation and the use of a suture-passing device that closes the fascia and the peritoneum together.¹⁸

Conclusion

Laparoscopic surgery for morbid obesity presents the possibility for preperitoneal herniation due to the patient's abundant preperitoneal space and elevated intraabdominal pressure. Closure, using a fascial closure device, under laparoscopic control, can eliminate this potential complication by closing both the fascia and peritoneum all at once.

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