

Incarcerated Retroperitoneal Hernia Following Total Extraperitoneal Laparoscopic Radical Nephrectomy

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ABSTRACT

Small bowel obstruction (SBO) is a common entity encountered in surgical patients. The most common causes of the SBO range from postoperative adhesions to cancer. We present the case of a 55-year-old male who underwent a laparoscopic left radical nephrectomy and presented with an early SBO. An imaging study revealed an obstructive pattern with proximal dilated jejunum with decompressed distal small bowel. The patient underwent an exploratory laparotomy with extensive lysis of adhesions and release/resection of a long segment of incarcerated jejunum from an 8-cm retroperitoneal hernia in the left renal fossa. The patient was discharged home, and at 3-month follow-up no bowel complaints were reported.

Key Words: Small bowel obstruction, Laparoscopic radical nephrectomy.

INTRODUCTION

The most common causes of small bowel obstruction (SBO) in the general population are postoperative adhesions, abdominal wall hernias, and malignant tumors.¹ Adhesions are the primary cause in patients with previous abdominal operations, accounting for more than 60%, while less common causes, such as Crohn's disease and intraabdominal abscess, make up about 5%.¹

Early postoperative SBOs usually present within 30 days of the index operation and can present as high-grade, but rarely cause an ischemic insult.² We present a case of early SBO following total extraperitoneal laparoscopic left radical nephrectomy.

CASE REPORT

A 55-year-old male presented to the emergency department with a history of diffuse, pressure-like abdominal pain and distention, obstipation, and bilious emesis. Three weeks before presentation, a total extraperitoneal laparoscopic left radical nephrectomy (LRN) had been performed for a 7-cm renal cell carcinoma. Two significant intraoperative complications occurred during the nephrectomy. The first was a small, inadvertent tear of the peritoneum that was easily repaired with a single, continuous, absorbable suture. The second was a small pancreatic tail contusion that was appropriately treated with closed suction drainage and a short course of bowel rest. The pancreatic drain was removed on postoperative day 3, and the patient's diet was advanced. He was discharged home on postoperative day 6. The patient was seen in the office within 2 weeks of discharge and was recovering well.

Three weeks after admission, the patient presented to the emergency department with nausea, vomiting, and abdominal pain. The physical examination demonstrated normal vital signs, a distended abdomen, and mild to moderate, diffuse abdominal tenderness without peritoneal signs. The surgical incisions were healing well, and no evidence of abdominal wall herniation was present. Admission laboratory values were significant for leukocytosis, a minimally elevated serum creatinine level (1.5mg/dL), and hyperglycemia (195mg/dL). Serum lactate, electrolytes, amylase, and

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lipase levels were normal. A contrast enhanced CT of the abdomen and pelvis was performed immediately upon the patient being admitted and demonstrated a dilated proximal jejunum, a 6-cm stenotic segment of jejunum in the left retroperitoneum, and a decompressed distal small bowel and colon (**Figure 1**).

The patient was admitted to the hospital for an early postoperative partial small bowel obstruction and initially treated nonoperatively. Bowel rest and intravenous fluids were initiated, and a nasogastric tube was inserted for decompression. The patient was reevaluated 12 hours later and continued to have significant abdominal pain and distention, indicating failure of nonoperative management. Therefore, the patient was taken to the operating room for an exploratory laparotomy.

In the operating room, abdominal exploration demonstrated densely adherent loops of small bowel in the left upper quadrant. Extensive lysis of dense adhesions was performed to release a long segment of incarcerated jejunum from an 8-cm retroperitoneal hernia in the left renal fossa (**Figure 2**). Upon retrospective analysis of the CT, the incarcerated jejunal loop was apparent (**Figure 3**). Multiple serosal tears were made during the dissection; therefore, a 40-cm segment of jejunum was resected. A jejunojejunostomy was performed. A sheet of antiadhesion barrier was placed in the left renal fossa, and the laparotomy incision was repaired in standard fashion. The patient made an uneventful recovery and was discharged home on postoperative day 9. At 3-month follow-up, the patient was pain free, tolerating a regular diet, and his bowel habits were normal.



Figure 1. Dilated loops of jejunum.

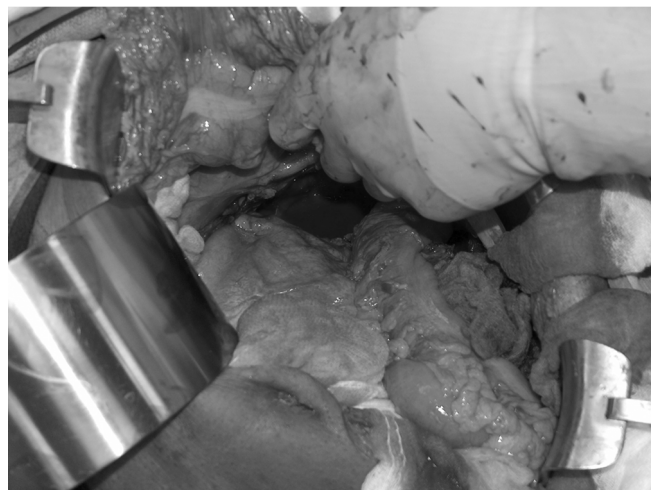


Figure 2. 8-cm retroperitoneal hernia in left renal fossa.

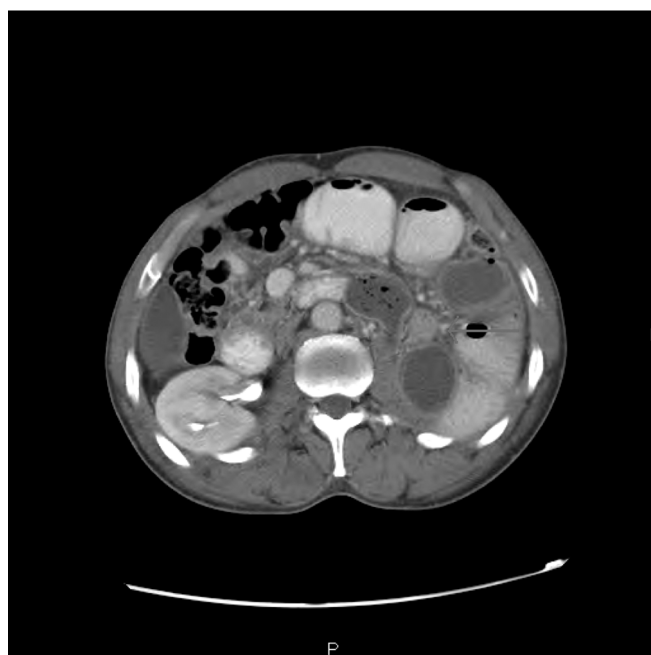


Figure 3. 6-cm stenotic segment of jejunum in left renal fossa.

DISCUSSION

Adhesions are the most common cause of SBO, making up approximately 60% of all cases, but one must always keep in mind other causes.¹ SBO can present with a varying range of severity, depending on level of obstruction, as well as location. SBO can be classified as partial (incomplete) vs. complete, high-grade vs. low-grade, or simple or closed loop based on both clinical and radiographic findings. Treatment of SBO depends on type.

Incomplete or partial SBO are often successfully treated nonoperatively with bowel rest and gastric decompression. However, complete, high-grade, and strangulated SBO typically require surgical intervention. Early postoperative SBO has been shown to resolve in 90% of cases with IV hydration and NG decompression.³ High-grade SBO has also been described to be successfully treated nonoperatively, although with a higher recurrence rate than the operative arm of patients.⁴

Laparoscopic radical nephrectomy, which is an appropriate procedure for treatment of a 7-cm renal mass,⁵ has a major complication rate of 9.5% and minor complication rate of 1.9%.⁶ Vascular injury is a common complication, reported as high as 40% of all intraoperative complications.⁷ Other complications include bowel perforation caused during trocar placement or from electrocautery, splenic and liver laceration, and pancreatic injuries. Peritoneal violation is not cited as a common complication following LRN.⁶ Primary suture repair of the peritoneal disruption is an acceptable approach, but there is no evidence to suggest any alternative management strategies.

Retroperitoneal hernia after an LRN as a cause of a small bowel obstruction is an undescribed entity that was encountered with our patient. We hypothesize that the small pancreatic contusion may have caused mild pancreatitis and its associated retroperitoneal inflammatory response. This may have caused the suture line of the peritoneal repair to fail, allowing a segment of jejunum to herniate into the left renal fossa and become entrapped by the retroperitoneal inflammatory response.

CONCLUSION

This is the first reported case of an early high-grade small bowel obstruction due to a retroperitoneal hernia following LRN. Nonoperative management was not successful in

this patient. He ultimately required exploratory laparotomy with small bowel resection to relieve the SBO. Laparoscopic treatment could have been considered. As more urologic procedures are performed laparoscopically, general and urologic surgeons should become familiar with complications of these approaches.

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