Acute Jejunal Obstruction Following Laparoscopic Nephrectomy

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INTRODUCTION

In acute small bowel obstruction, internal hernias have an incidence of 1.9-3%.[1] Most often, the clinical features are nonspecific and hence the diagnosis can be delayed causing increased morbidity and the risk of gangrene requiring resection.

CASE REPORT

Sixty five year old male incidentally detected to have left renal mass. He did not have any past surgeries. After discussion, he underwent laparoscopic transperitoneal radical left nephrectomy as he opted for the procedure. He was positioned in a modified right lateral decubitus position. We used the standard three port technique. Pneumoperitoneum was created via open technique through a 10 mm port in the midclavicular line 2 cm lateral to the level of umbilicus, 10 mm port in the left subcostal region in the anterior axillary line and another 10 mm port in the anterior axillary line at the level of anterior iliac crest. The left colon was mobilized medially after incising the Toldt's line. The ureter and gonadal vein were identified and traced superiorly till the lower pole of the kidney. The lower pole was identified and elevated. The renal artery was dissected, isolated, clipped and divided. Similarly the renal vein was divided. The Gerota's fascia at the upper pole was then incised and the adrenal glands

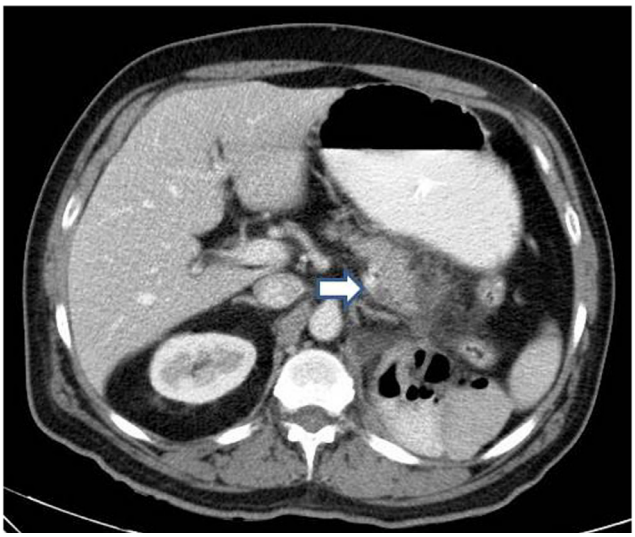

Figure 1. Computed tomography scan (axial section) revealed revealed proximal small bowel obstruction with internal herniation of the jejunal loops in the left renal fossa bed.

separated. The kidney was dissected posteriorly with the Gerota intact. The ureter and gonadal vein were divided; the specimen was placed in an endobag and removed through a Pfannenstiel incision. The procedure was done in 1 hour fifteen minutes and the intraoperative course was uneventful. Histopathology of the nephrectomy specimen was reported as papillary carcinoma (pT1aN0M0 Fuhrman nuclear grade II). On the fifth postoperative day, he developed abdominal distension, upper abdominal discomfort, nausea and bilious vomiting. Examination was normal. On imaging, computed tomography (CT) scan revealed proximal small bowel obstruction with internal herniation of the jejunal loops in the left renal fossa bed (Figures 1, arrow head) through the transverse mesocolon (arrow heads in Figures 2). He underwent emergency operation involving laparoscopy converted into exploratory laparotomy due to dense adhesions. Release of the internal herniated dilated jejunal loops and closure of the mesocolonic defect was done. The dilated jejunal loops were congested but recovered to normal color with arterial pulsations and peristalsis following the release of adhesions. After the procedure he recovered well.

DISCUSSION

Small bowel obstruction (SBO) is a common surgical emergency. Adhesive related small bowel obstruction is the most commonest cause of mechanical SBO.[2] Internal hernias are rare. Post-operative transmesenteric hernias are a common type of internal hernias.[3] They have been often reported following bariatric procedures like gastric bypass.[4] Urological operations like nephrectomy have been rarely reported to cause intestinal obstruction. Laparoscopic nephrectomies have reported complications like vascular injuries, bowel injuries, solid organ injuries, access related, renal artery pseudoaneurysm, bladder perforation.[5-7]

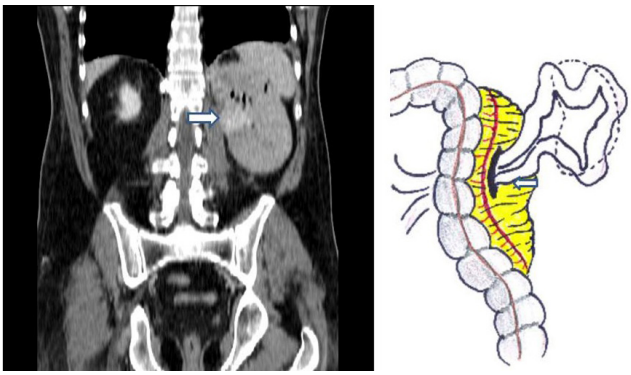

Figure 2. Computed tomography scan (coronal section) revealed scan revealed proximal small bowel obstruction with internal herniation of the (arrow heads).

Our patient developed acute intestinal obstruction following left nephrectomy. In literature, there are only 8 case reports of the intestinal obstruction following nephrectomies, all of which were left sided.[4,8,9] The main mechanism of occurrence is thought be due to rent in the transmesocolic defect during medial mobilization of the left colon along the Toldt's line while preserving the gonadal vein and potential space in the renal fossa bed causing migration of the small intestinal loops, eventually leading to kinking and extrinsic obstruction. Seldom do these loops of small bowel get strangulated. However if there was undetected prolonged obstruction, it can lead to gangrene and perforation requiring resection of small bowel. The presenting symptoms are often vague and vary from upper abdominal discomfort, bloating, nausea, vomiting with no abdominal signs. When the bowel becomes strangulated or gangrenous, then there can be signs like tenderness and localized guarding.[8] Diagnosis is mainly based on imaging. Abdominal plain X-rays may reveal dilated proximal small bowel

loops. Contrast enhanced computerized tomography is diagnostic. Some have used small bowel series for diagnosis.[8] Treatment involves emergency exploration, releasing the small bowel loops and closing the transmesocolic rent. This can be done laparoscopically or as an open procedure. This potential problem can be prevented by identifying the defect in the mesocolon intraoperatively and suturing appropriately. Other techniques mentioned in literature to prevent the creation of the defect include, staying close to the gerotas fascia and staying lateral to the gonadal veins during dissection.[10] It is also prudent to remember that the splenic flexure is an important watershed area and injury to the marginal vessels can cause ischemic injury to the colon.

CONCLUSION

Acute small bowel obstruction following laparoscopic nephrectomy warrants an urgent imaging and exploration to prevent strangulation. Care should be taken while dissecting the mesocolon to prevent causing any defect which can lead to this complication.

CONFLICT OF INTEREST

None declared.

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