Case 12273

Parastomal hernia complicated by small bowel obstruction after radical cystectomy with ileal conduit

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Section: Abdominal imaging
Area of Interest: Small bowel
Procedure: Complications
Imaging Technique: CT
Special Focus: Obstruction / Occlusion Hernia Case
Type: Clinical Cases
Authors: Tonolini Massimo
Patient: 77 years, male

Clinical History:

Elderly man with previous radical cystoprostatectomy with iliac lymphadenectomy, urethrectomy and uretero-ileo-cutaneostomy (Bricker technique) for recurrent pT1G3 transitional cell carcinoma of the urinary bladder and prostatic urethra one year earlier, presented to the emergency department with worsening abdominal pain and distension as well as inability to pass gas and faeces for the past two days.

Imaging Findings:

Physical findings included tympanic, tender abdomen with peristaltic sounds; functioning urostomy. Routine laboratory tests were within normal limits.
Plain radiographs (Fig. 1) showed characteristic appearance consistent with mechanical obstruction of the distal small bowel. CT (Fig. 2) confirmed diffusely distended jejuno-ileal loops with air-fluid levels and collapsed colon, normal nephrographic appearance and non-hydronephrotic collecting systems, and ileal conduit (IC) filled by opacified urine.
At the urostomy site, a sizeable hernia sac appeared mostly occupied by a distended, fluid-filled ileal loop with constriction at the hernia neck and metallic clips (corresponding to the site of previous isolation of an ileal segment during cystectomy to create the IC that receives the ureteroenteric anastomoses and drains urine to the stoma). Furthermore, CT did not show signs of peritonitis and tumour recurrence.
Urgent laparotomic surgery confirmed parastomal hernia causing upstream bowel obstruction, and the herniated loop (without mural necrosis) was reduced.

Discussion:

Although rare (3%) among all incisional hernias, protrusion of abdominal contents through a parietal defect adjacent to a cutaneous stoma (parastomal hernia, PH) represents the commonest stoma-related problem, which aggravates the patients’ quality of life and may occasionally cause severe complications. Recently, the prophylactic use of prosthetic mesh during initial surgery contributed to limit the incidence of PHs, which mostly result from colorectal operations such as Hartmann’s procedure and abdomino-perineal resection. The incidence (reaching 56% for colostomies) varies considerably according to follow-up duration and is probably underestimated since many PHs are asymptomatic or causing only cosmetic complaints. Using CT, variable-degree PHs are detected in up to 78% of
operated patients [1-4]. Following radical cystectomy (RC) with ileal conduit (IC), CT diagnosed PH in 12-30% and 22-50% of patients after 1 year and 2 years respectively, significantly associated with prior laparotomy, female gender, obesity and wound infection. With IC urinary diversion, PH is more troublesome because of pain, discomfort, difficult fitting of collecting appliance causing urine leakage and peristomal dermatitis [5-8]. In operated patients with colo- or urostomies, CT is frequently performed in possible early or delayed postsurgical complications, and tumour recurrence. When interpreting CT studies, PH should be searched for and thoroughly reported. According to hernia sac contents and size, PH is categorized as type Ia (containing only the prolapsed bowel forming the colo- or urostomy), Ib (same as Ia with sac size >5 cm), II (containing abdominal fat or omentum), and III (herniated bowel loop other than that forming the stoma). Progression to type III is reported to occur in 80% and 30% of type I and type II PH, respectively [4-8]. Furthermore, as this case demonstrates, entrapment of a bowel loop in the PH sac may lead to acute local pain from abdominal wall stretching, and occasionally (2.1-6.7% of patients) to bowel obstruction or strangulation requiring urgent surgery. Globally, stoma revision is required in 17-45% of patients either because of abdominal discomfort or complications [4, 5, 8]. The surgical treatment of PH remains a critical issue because of the high recurrence rate (approximately 50%) after suture repair or stoma relocation. Conservative treatment with abdominal belts or binders is recommended in advanced tumour stages or poorly symptomatic PH. Recently, open and laparoscopic fascial mesh repair allowed much lower (8-15%) recurrence rates [9, 10].

Differential Diagnosis List: Parastomal hernia causing small bowel obstruction, previous cystectomy with ileal conduit., Adhesions, Incisional hernia, Local recurrence of bladder carcinoma, Ileal conduit stenosis, Ureterointestinal anastomotic stenosis / hydronephrosis, Urinary tract infection / pyelonephritis

Final Diagnosis: Parastomal hernia causing small bowel obstruction, previous cystectomy with ileal conduit.

References:

Description: Supine (a) and upright (b) plain radiographs show overdistended small bowel loops with perceptible mucosal plicae, predominantly gaseous content and multiple air-fluid levels, consistent with mechanical obstruction. Origin: Tonolini Massimo, Department of Radiology, “Luigi Sacco” University Hospital – Milan (Italy)
**Description:** Supine (a) and upright (b) plain radiographs show overdistended small bowel loops with perceptible mucosal plicae, predominantly gaseous content and multiple air-fluid levels, consistent with mechanical obstruction. **Origin:** Tonolini Massimo, Department of Radiology, “Luigi Sacco,” University Hospital – Milan (Italy)
Description: Using a biphasic contrast medium injection technique, CT showed diffusely distended jejuno-ileal loops with several air-fluid levels and collapsed colon, consistent with mechanical obstruction; normally functioning kidneys. Origin: Tonolini Massimo, Department of Radiology, "Luigi Sacco" University Hospital – Milan (Italy)
**Description:** Note normal, simultaneous nephrographic appearance of both kidneys and opacification of non-hydronephrotic collecting systems (ectasia of the left lumbar ureter is commonly seen after urinary diversion). **Origin:** Tonolini Massimo, Department of Radiology, “Luigi Sacco” University Hospital – Milan (Italy)
Description: Filled by opacified urine, the ileal conduit (*) is well identified. Note diffusely distended jejuno-ileal loops with several air-fluid levels and collapsed colon, consistent with mechanical obstruction. Origin: Tonolini Massimo, Department of Radiology, "Luigi Sacco" University Hospital – Milan (Italy)
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Description: At the urostomy site, a sizeable hernia sac (demarcated by arrows) is mostly occupied by a distended, fluid-filled ileal loop (+) with metallic clips, which displaces the distal end of the urine conduit (*). Origin: Tonolini Massimo, Department of Radiology, "Luigi Sacco" University Hospital – Milan (Italy)
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**Description:** The herniated ileal loop (+) with metallic clips from previous resection during cystectomy with urinary diversion, appears overdistended and fluid-filled, with constriction at the hernial neck (arrowhead). Note size of hernia sac (arrowheads). **Origin:** Tonolini Massimo, Department of Radiology, “Luigi Sacco” University Hospital – Milan (Italy)
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