

Spontaneous bladder rupture mimicking a jejuno-ileal perforation

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SUMMARY: Spontaneous bladder rupture mimicking a jejuno-ileal perforation.

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Spontaneous urinary bladder perforation is a very rare disease. The main cause of urinary perforation, indeed, is a damage to the

urinary bladder wall by blunt or penetrating trauma. There are only few idiopathic spontaneous rupture of urinary bladder (ISRUB) cases reported in the literature. Pre-operative diagnosis is very difficult due to similar symptoms, laboratory and imaging findings of a gastrointestinal perforation that is usually excluded intra-operatively. Herein we report a case of a 91-year-old man presented to the emergency department with a spontaneous bladder perforation mimicking an ileal perforation.

KEY WORDS: ISRUB-Bladder rupture - Ileal perforation - Laparoscopy - Jejunal perforation.

Introduction

Spontaneous urinary bladder perforation is a very rare disease. The main cause of urinary perforation, indeed, is a damage to the urinary bladder wall by blunt or penetrating trauma. There are only few idiopathic spontaneous rupture of urinary bladder (ISRUB) cases reported in the literature. Pre-operative diagnosis is very difficult due to similar symptoms, laboratory and imaging findings of a gastrointestinal perforation that is usually excluded intra-operatively.

Case report

A 91-year-old man presented to the emergency department with a sudden onset of constant abdominal pain without nausea, vomiting or alteration of bowel habits. The pain was associated with urinary symptoms such as strangury and urinary frequency of 1-week duration. Clinical history comprised arterial hypertension, pace-maker positioning and in-

guinal hernia repair several years ago. On admission he was afebrile. Examination revealed a painful on palpation abdomen with generalized rigidity and guarding and positive rebound tenderness in all of the quadrants. Laboratory tests revealed leukocytosis (a white blood cells count of 13040/ul), serum C reactive protein of 21.01 mg/dl, serum creatinine of 3.09 mg/dl and serum urea of 72 mg/dl. Abdominal X-rays showed no particular sign, then a no-contrast abdominopelvic CT scan was performed with evidence of free intra-abdominal fluid and thickening of a "jejunum" segment (Figures 1, 2). On the basis of the laboratory and imaging findings and the abdominal pain with symptoms of peritonitis, the diagnosis of a gastrointestinal perforation was made and the patient underwent a diagnostic laparoscopy. Exploration of the peritoneal cavity revealed free purulent fluid with peritonitis and a urinary bladder perforation. Bladder wall defect was repaired by four stitches. A methylene blue-test was performed with no evidence of suture leakage. The whole gastrointestinal tract was examined without any other signs of damage. The patient was in-charge for one day in intensive care unit and then transferred in the surgery ward. His clinical condition improved so he was discharged on the ninth post-operative day.

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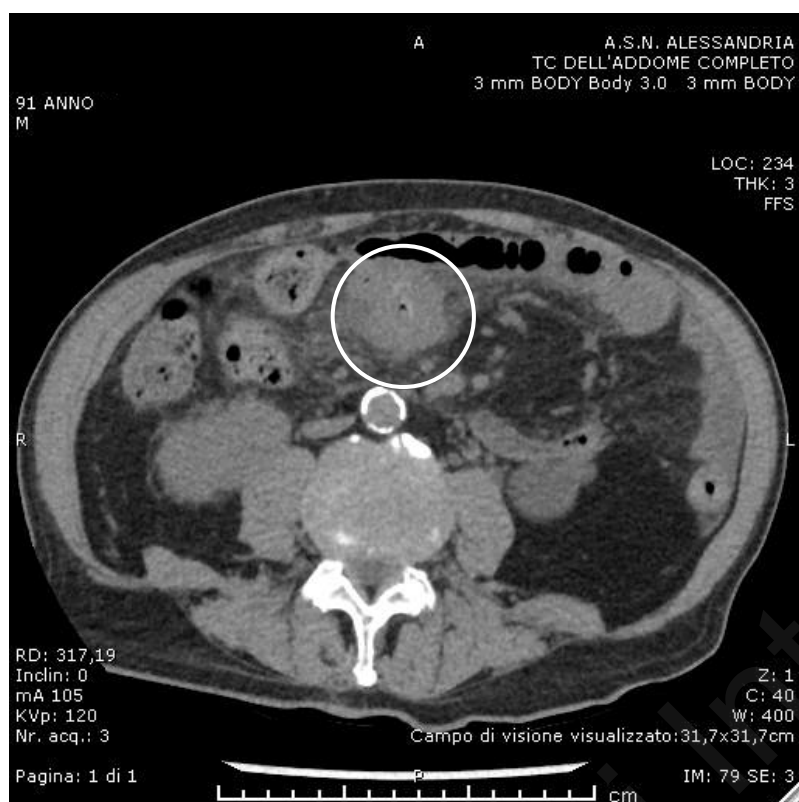


Figure 1 - Ct scan axial view of suspected jejunoileal perforation highlighted by white circle.

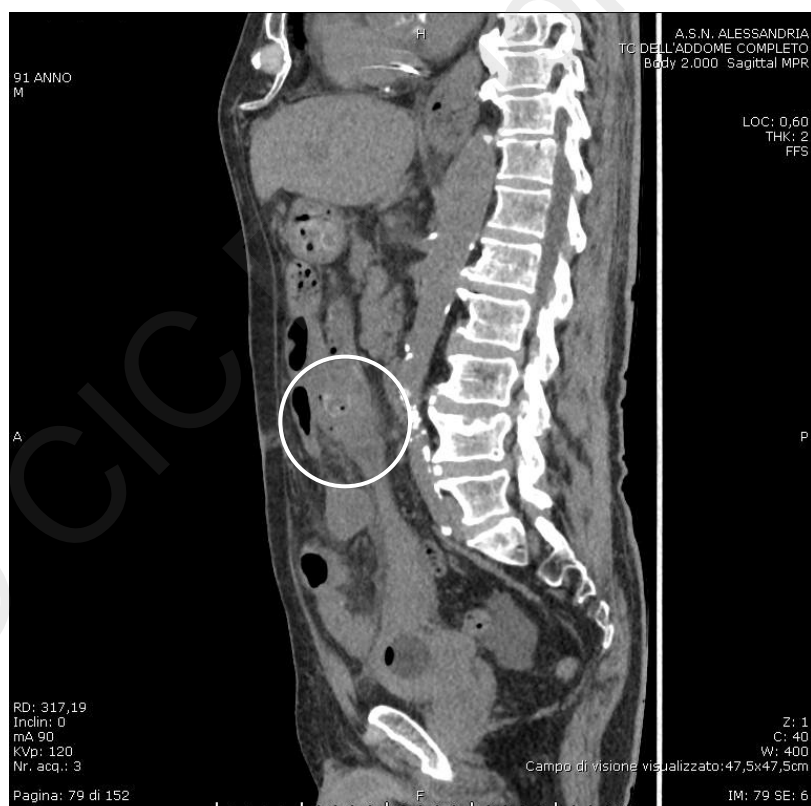


Figure 2 - CT scan sagittal view of the suspected ileal perforation, highlighted by white circle.

TABLE 1 - CLINICAL HISTORY OF PATIENTS IN DIFFERENT STUDIES.

Study	Age/Sex	Risk factors	Preoperative Time	Time of Diagnosis	Type of Surgery	Type of Operation	Mortality	Morbidity
Saleem et al. (1)	38/F	Binge alcohol intake	1 day	Postoperatively	Laparoscopy	Primary suture	No	No
Izumi et al. (2)	87/F 56/M	No Consuming alcohol	Unknown 3 days	Postoperatively Postoperatively	Open Laparoscopy	Primary suture Primary suture	Yes No	No No
Indu et al. (3)	26/M 34/M	Consuming alcohol No	1 week 1 day	Preoperatively Preoperatively	Open Open	Primary suture Primary suture	No No	No No
Wieloch et al. (4)	84/F	Previous laparotomies	Several days	Postoperatively	Open	Primary suture	Yes	No
Cusano et al. (5)	60/F	Previous laparotomies	5 days	Preoperatively	Open	Primary suture	No	No
Uysal et al. (6)	78/F	No	4 days	Postoperatively	Open	Primary suture	Yes	No
Kam et al. (7)	70/M	No	12 days	Preoperatively	Open	Primary suture + transvescical prostatectomy	No	No
Current case	91/M	No	1 week	Postoperatively	Laparoscopy	Primary suture	No	No

Discussion

Spontaneous bladder perforation is an extremely rare event and it has an associated 50% mortality rate (5) due to the lack of early diagnosis and therapy (6), because it is not usually considered in the differential diagnosis of acute abdomen due to its rarity (6). Urinary bladder perforation is associated with several risk factors such as trauma of the lower abdomen, cancer of the pelvic organ, irradiation therapy, previous laparotomy, bladder outflow obstruction, bladder infections, neurogen bladder, binge alcohol intake, iatrogenic due to urethral or sovrappubic catheterization (1, 2). There are only few case reports with a diagnosis of spontaneous and idiopathic urinary bladder perforation (Table 1). All of these patients have no risk factors: one only had history of binge alcohol intake (1), two others had history of consuming alcohol but not binge episodes (2, 3), two patients underwent previous laparotomies. There are no risk factors related to age or sex, in fact this event occurs in both young (a 26-year-old man in Indu B.D. et al.) and old patients (a 87-year-old woman in Junichi I. et al.). In all cases patients pre-

sented with abdominal pain associated with oliguria or dysuria and symptoms suggestive for peritonitis. Laboratory findings were similar in all cases: leukocytosis, serum creatinine value and serum urea value alteration were diagnosed due to a significant reabsorption of these components through the peritoneum after the urinary bladder intra-peritoneal rupture (2). In only two cases CT suggests urinary bladder perforation (3), but in the remnant cases only visible free fluid collection in the peritoneal cavity was evaluated with inconstant associated free intra-peritoneal air, that made differential diagnosis with bowel or gastrointestinal perforation challenging. Junichi I. et al described a sentinel clot sign in patient with traumatic bladder rupture in CT scan: a relatively highly attenuating and heterogeneous fluid near the bladder, that is indicative of urinary bladder rupture (2). The gold standard for diagnosis is a CT cystogram in which extravasation of contrast can be visualised (7). Cystogram is not always available in the emergency setting. Laparoscopy, indeed, still remains the effective procedure for diagnosis and treatment the urinary bladder perforation in an emergency setting (6).

Conclusions

Urinary bladder perforation is a life threatening disease with a high rate of mortality and must be diagnosed and treated in a very short interval time to prevent complications. Diagnosis of ISRUB has to be considered always in presence of suspected but not

easily delineated aspect of intestinal perforation. In conclusion, it is very important to include urinary bladder perforation in a differential diagnosis in every patient presenting with acute abdominal pain, symptoms and signs of peritonitis associated with urinary symptoms such as oliguria, anuria and renal dysfunction.

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