



Pseudo Acute Renal Failure due to delayed presentation of intra-peritoneal bladder injury following blunt abdominal trauma

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Abstract

Full urinary bladder is prone to intra-peritoneal rupture following blunt abdominal trauma. It is usually diagnosed early due to frank hematuria. Review of literature has revealed few cases of delayed presentation of bladder injury presenting as acute pseudo renal failure. Each of the cases has a pointer towards inherent bladder injury by way of a single episode of hematuria or development of anuria. We present here a case of intra-peritoneal bladder rupture following blunt abdominal injury presenting after four days of injury with abdominal pain without hematuria or anuria. Blood investigations were as in acute renal failure. Only one such case has been reported in literature.

Introduction

Full urinary bladder is prone to intra-peritoneal rupture following blunt abdominal trauma (1). It is usually diagnosed early due to frank hematuria. Review of literature has revealed few cases of delayed presentation of bladder injury presenting as acute pseudo renal failure (2-6). Each of the cases has a pointer towards inherent bladder injury by way of a single episode of hematuria or development of anuria. Only case, presenting as pseudo acute renal failure without hematuria and anuria has been reported in literature (7). We present here such a case of intra-peritoneal bladder rupture following blunt abdominal injury presenting after four days of injury with abdominal pain without hematuria or anuria.

Case Report

A 48 years old man with history of road traffic accident four days back presented with complaints of generalised pain abdomen since three days increasing in severity since the previous day. He also complained of minimal generalised distension of abdomen. The patient was taking normal feeds orally and was passing adequate urine, stools and flatus. There was

no history of hematuria, vomiting, fever, swelling of feet or oedema of face. There were no co morbidities.

He sought medical treatment for his increasing abdominal pain at a local hospital. Serum creatinine was 9.4 mg/dL. Abdominal ultrasonography showed minimal ascites. There was no solid organ injury. He was catheterized at the local hospital and referred to Kasturba Hospital, Manipal for further management.

On admission, his general clinical examination was unremarkable. On abdominal examination, there was a small abrasion over left iliac fossa, mild distension, minimal generalised tenderness and guarding. There was no renal angle fullness or tenderness. Foley's catheter was in situ and drained clear urine. External genitalia, perineum and per-rectal examination were normal.

Blood investigations revealed severely deranged renal function tests simulating acute renal failure which was perplexing (Table 1). Chest and Abdominal X-Rays were normal. Ultrasonography of the abdomen showed a moderate ascites with internal echoes. There was no evidence of solid organ injury. In view of a history of road traffic accident, Computerized tomography scan was contemplated but deferred due to deranged renal function tests. Minimal straw coloured fluid was aspirated on peritoneal tap. It was neither hemorrhagic nor bilious.

Emergency Diagnostic Laparoscopy was done. Foley's catheter was seen freely in the general peritoneum (Figure 1). An H shaped rent in the dome of the intra peritoneal bladder was noticed. Edges were ragged (Figure 2). There was no fresh oozing of blood. There was extravasation of urine into the peritoneum which was drained. No other visceral injury was present. The bladder edges were freshened and sutured with vicryl continuously in layers (Figure 3). Within 12 hours, creatinine reduced to 2.4 mg/dL and returned to normal in three days. All other renal parameters were normal within three days.

Discussion

It is rare for a case of traumatic intraperitoneal bladder rupture to present as acute renal failure. Generally the presenting features after blunt injury abdomen causing bladder rupture are gross hematuria, severe abdominal pain or anuria. The diagnosis is evident and a cystogram can confirm the condition and the patient can be treated immediately. If the rent in the bladder persists, urine is absorbed from the peritoneal surface and though the patient has well functioning kidneys, presents with features of kidney failure. The urea, creatinine and potassium increase to alarming levels and sodium levels fall drastically.

On reviewing the literature, a case was reported by D.C.Jerwood (2), in which , there were two liters of hematuria on catheterisation. In another case reported by A Davenport (3), though the patient presented with respiratory symptoms and abdominal pain, he was anuric until catheterisation which drained four litres of urine. D Brown (3) has reported a three year old girl who presented with abdominal distension and vomiting and a cystogram confirmed bladder rupture. S.KKilari (5), has presented a case of gross hematuria followed by five days of progressive abdominal distension and the anuria. Justin Stebbing (6) has presented a case which resolved by catheterisation alone as the rent was minute. Williams (7) has presented a case very similar to the present one, in which there was neither hematuria nor anuria only an initial abdominal discomfort following trauma with increasing abdominal pain and distension later on.

This case is presented from a different perspective. The patient failed to give a history of initial hematuria or anuria, the treatment focus was therefore entirely on establishing a cause for abdominal pain following blunt abdominal trauma and the acute renal failure which was diagnosed on investigation. Contrast imaging procedures were curtailed due to the renal impairment. The bladder rent was large and the catheterisation did not improve the situation substantially as the bladder and peritoneum were one continuous cavity. The diagnostic laparoscopy was the turning point in this case. Sometimes, the patient can get admitted into medical wards for the acute renal failure and then the focus shifts to multiple hemoialysis without improvement of renal parameters but with increasing ascites. This creates a dilemma which can be overcome by a surgical approach.

References

1. Schwartz's Principles of Surgery 9th Edition Chapter 40 Urology
2. Jerwood DC, Mason NP. Pseudo-renal failure after traumatic bladder rupture—the common features.Br J Uro 1995; 76: 406-407
3. Davenport A Goldsmith HJ. Ruptured bladder presenting as acute renal failure. Br J Hosp Med 1989; 41: 579-80
4. Brown D, H. L. Magill HL ,Black TL. Delayed presentation of traumatic intraperitoneal bladder rupture. *Pediatr Radiol* 1986; 16: 252-253
5. S. K. Kilari SK, Amancharla LY, Bodagala VLD, Mulakala AJ, Bushan JV, Vishnubhotla SK. Pseudo-renal failure due to intraperitoneal bladder rupture and silent subdural hematoma following a fall in an alcoholic. *Int Urol Nephrol* 2007; 39: 947–949
6. Stebbing J, Ezra DG, Cackett PD, Greenstein AS. Ascites and apparent renal failure treated with a Foley Catheter. *J Royal Soc Med* 1999; 92: 582-583
7. Williams NS. Late presentation of intraperitoneal rupture of the urinary bladder. *Postgrad Med J* 1976; 52: 246- 247

Illustrations

Illustration 1

Figure 1



Figure 1 : Intra - peritoneal telescopic view of Foley's catheter

Illustration 2

Figure 2

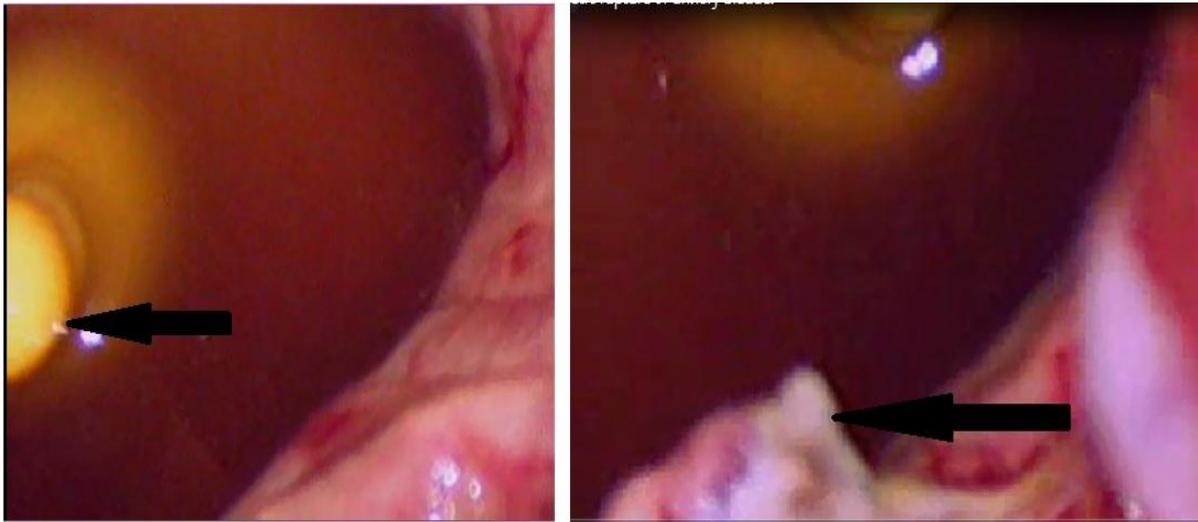


Figure 2 : Laparoscopic view of Foley's catheter and edge of ruptured bladder wall

Illustration 3

Figure 3

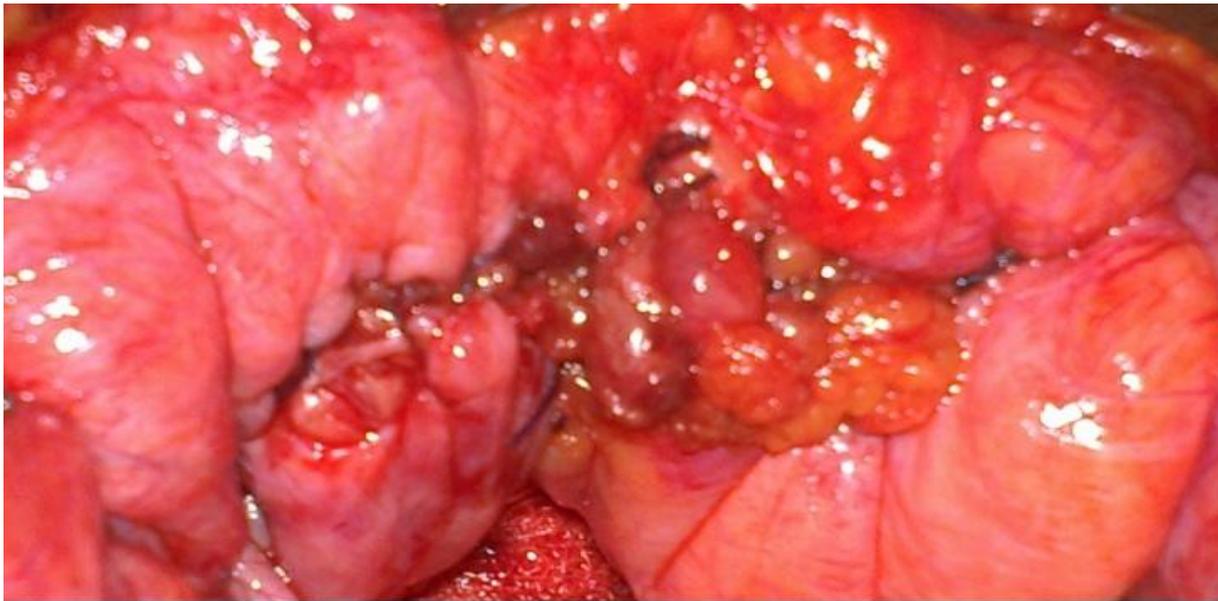


Figure 3 : Bladder wall sutured with Vicryl

Illustration 4

Table 1 : Renal function tests on admission

Serial Number	Investigations	Values
1	Blood Urea	184 mg/dL
2	Creatinine	7.9 mg/dL
3	Sodium (Na+)	126 mmol/L
4	Potassium (K+)	6 mmol/L

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