

Spontaneous Bladder Rupture with Delayed Diagnosis - A Challenge to Manage

AJIT SAWANT, PRAKASH PAWAR, ABHISHEK SAVALIA, SUNIL PATIL, ASHWIN TAMHANKAR

ABSTRACT

Spontaneous bladder rupture is defined as any rupture of urinary bladder in absence of external stimulus. It is a relatively rare phenomenon, with few cases reported in literature. Patients usually present with acute abdomen to emergency. However, being a rare cause, index of suspicion

remains low for bladder rupture in absence of history of any trauma. This often leads to delayed diagnosis and systemic complications. Here, we present a case of spontaneous bladder rupture diagnosed and treated at our institute, to highlight the diagnostic and therapeutic challenges and possible complications secondary to rupture.

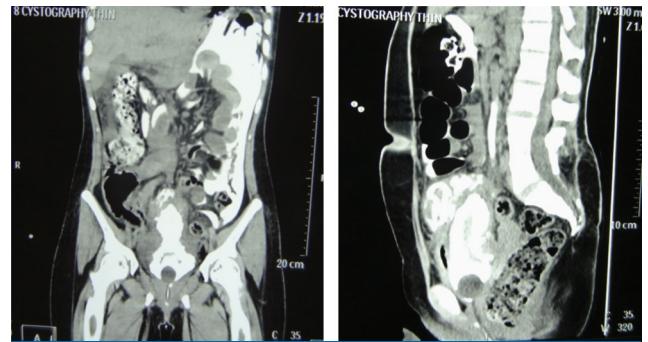
Keywords: Complications, Diagnosis, Management, Urinary bladder

CASE REPORT

A 23 years old unmarried female presented to General Surgery unit in emergency with complaints of acute lower abdomen pain and fever with chills since two days. She was a known case of neurogenic bladder since childhood, on irregular CISC (Clean Intermittent Self-Catheterisation) and catheterised in OPD 1 week back. At a very young age she underwent spine surgery possibly for spina bifida occulta. She had history of right pyeloplasty at the age of 9 years. She also had history of tubercular lymphadenopathy and had taken anti-Koch's treatment for same in 2007. She gave no history of pyuria, trauma or forceful catheterisation.

Her pulse was 130 per min, BP 90/60 mmHg and temperature was 38°C. Per abdominal examination revealed lower abdomen tenderness. Her WBC count was 18,500/mm³, S. creatinine 1.3 mg/dl and urine output 0.4 ml/kg/hr. Ultrasonography showed bilateral moderate hydronephrosis, with thick septated collection in Morrison's pouch with bilateral grade one increased echogenicity. Bladder wall was thickened to 1.2 cm. She was admitted in General Surgery with provisional diagnosis of bowel perforation induced peritonitis and started on IV antibiotics. However, contrast enhanced CT abdomen revealed normal bowel loops with partially distended bladder and Foley's bulb insitu. She had collection in Morrison's pouch but had no peri-vesical collection. After consultation with us for thickened bladder, a cystogram was done which confirmed bladder rupture [Table/Fig-1].

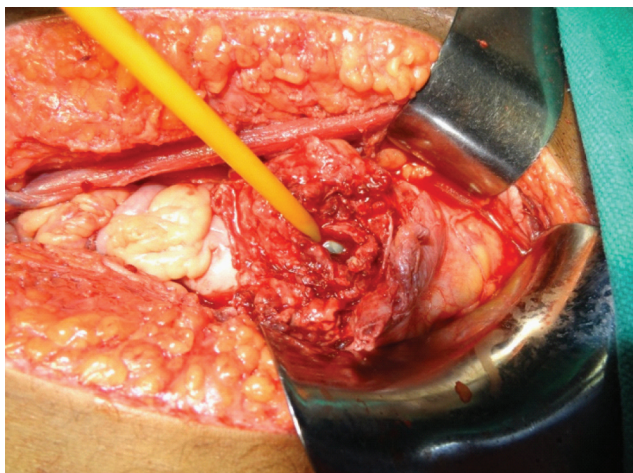
By then the patient was in septic shock and was started on



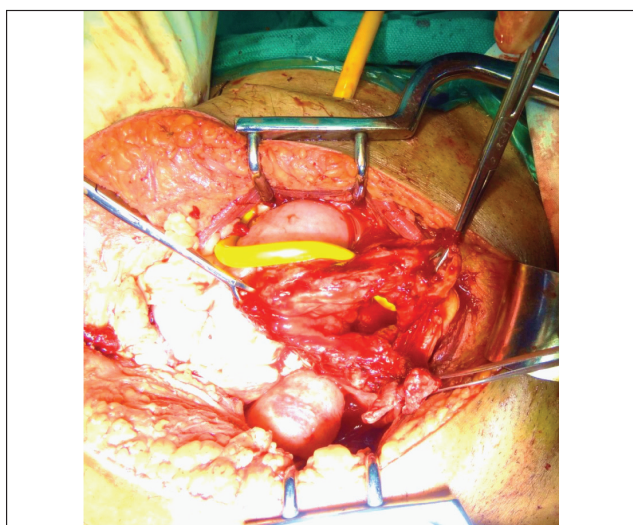
[Table/Fig-1]: CT Cystogram showing contrast extravasation into peritoneal cavity. Also note cone-shaped thickened bladder, with Foley's bulb insitu.

Injection Noradrenaline IV 0.06 µg/kg/min. Urine output was maintained at 0.5 ml/kg/hr. Abdominal drains were placed bilaterally in para-colic gutter under local anaesthesia and sedation. Antibiotics were also stepped up. Over next 20 hours, her vitals improved and inotropes were tapered to 0.03 µg/kg/min.

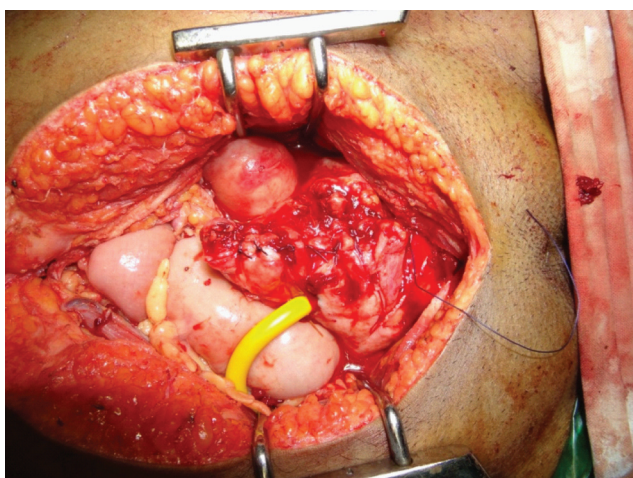
Thereafter, she underwent exploratory laparotomy, 20 hours post abdominal drainage. Lower midline incision was taken. The surgery revealed thick-walled cone-shaped bladder (consistent with neurogenic bladder) with a 2×2 cm perforation over dome and dense adhesions around bladder in dome region. It was partially sealed off by adhesions [Table/Fig-2]. The perforation was trimmed, supra-pubic Foley's catheter (20 F) was placed [Table/Fig-3] and the perforation was closed in 2 layers with vicryl 2/0 [Table/Fig-4]. Abdominal drain was placed in pelvis. Post-operative recovery was uneventful.



[Table/Fig-2]: Thickened bladder wall, with a 1x2 cm perforation at dome (Foley's catheter placed in perforation to highlight it).



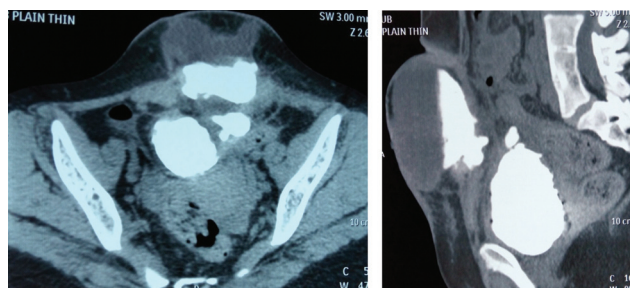
[Table/Fig-3]: Bladder perforation trimmed and supra-pubic catheter placed.



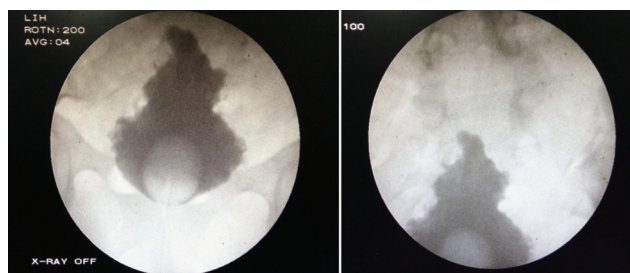
[Table/Fig-4]: Bladder closed in 2 layers with vicryl 2/0. Note the cone-shaped bladder.

Supra-pubic catheter was removed at 21 days and per urethral catheter after 28 days.

Patient was started on CISC and counselled about need to do it regularly to avoid recurrence. After 3 months, she developed severe pain and swelling at the site of laparotomy scar. Plain CT abdomen and then cystogram confirmed a tract extending from bladder dome to the scar, through which the urine had extravasated and collected beneath the scar [Table/Fig-5]. She was started on IV antibiotics and catheterised. Within a day her abdomen swelling disappeared and she was asymptomatic. She was discharged with per-urethral catheter and resumed her daily activities. After four months of per urethral catheter, repeat cystogram and cystoscopy [Table/Fig-6] showed that the tract had disappeared entirely and patient was started on self-catheterisation with anti-muscuranics.



[Table/Fig-5]: Vesico-cutaneous fistula with a subcutaneous collection in abdominal wall which developed two months after bladder repair. The collection settled spontaneously with per urethral catheterisation.



[Table/Fig-6]: Cystogram done after four months of per urethral catheter drainage - showing no vesico cutaneous fistula.

DISCUSSION

Spontaneous bladder rupture is defined as rupture of urinary bladder in absence of any external stimulus [1]. It is a relatively rare phenomenon, with few cases reported in literature. Common causes are chronic urinary tract infection, neurogenic bladder, diverticuli, radiation cystitis [2-5]. Patients usually present with acute abdomen to emergency care. However, index of suspicion remains low for bladder rupture in absence of history of any trauma and diagnosis is often delayed [2,6,7].

Patient usually presents with abdomen pain, initially in lower abdomen which gradually becomes generalised with symptoms of sepsis and features of peritonitis. Per abdomen guarding, rigidity and tenderness is present in most cases. Patients often present with urinary ascites, oliguria and renal failure [6,7].

However, diagnosis is often delayed adding to morbidity and mortality. Low index of suspicion and normal radiological findings including CT-scan (unless cystography done) are one of the possible reasons. Mortality is as high as 50% according to some authors [8,9].

Prompt diagnosis followed by surgical correction and intensive post op care remain the key to successful outcome.

Post-surgery, steps like regular self-catheterisation and anti-muscuranics in neurogenic bladder avoids recurrence.

CONCLUSION

Spontaneous bladder rupture is a rare presentation with high morbidity and mortality. High index of suspicion in patients with acute abdomen originating in hypogastrium and, associated history of possible causes like neurogenic bladder, chronic urinary tract infection helps in early diagnosis and prompt surgical management. This remains the key for successful outcome.

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