

INTRODUCTION

Bladder trauma is an uncommon injury that can be caused by a direct blow to a distended bladder, high energy injury which disrupts the pelvis, penetrating, and iatrogenic injuries¹. The most common cause of blunt bladder rupture (90%) is motor vehicle accidents². However, in the settings of other mechanism of injury, the diagnosis of bladder injury can be quite challenging. Here we discuss a case of fall due to epileptic seizure that resulted in bladder injury.

CASE REPORT

A 34 years old gentleman with underlying epilepsy presented to emergency department with a complain of generalised tonic-clonic seizure at home. While fitting, he had a fall and hit the edge of stairs. After the fall, he complained pain over the suprapubic area of the abdomen and inability to urinate.

On examination, his Glasgow Come Score (GCS) was full. Vital signs were within normal range apart from pain score of 7. Abdominal examination revealed distended abdomen and tenderness over the suprapubic area however there was no guarding or bruises. Examination of other systems were unremarkable.

FAST scan showed free fluid in the rectovesical pouch. Indwelling urinary catheter was inserted and frank hematuria was observed in urinary bag. Hemoglobin level dropped from 13.9 g/L to 13.0 g/L. Renal profile showed elevated creatinine level (137umol/L) with normal urea (3.8mmol/L). All measured electrolytes were normal. Free fluid on FAST scan, frank hematuria and dropped Hb were all indicative of intrabdominal injury possibly urinary bladder injury.

Subsequently, patient developed status epilepticus and he was intubated for airway protection. Patient then underwent non-contrast CT, contrast enhanced CT abdomen and cystogram which showed features of urinary bladder dome injury (intraperitoneal urinary bladder injury) measuring 0.6cm in diameter with large blood clot seen within the urinary bladder and large haemoperitoneum seen superior to urinary bladder (Fig 1 and 2).

The patient was surgically managed with exploratory laparotomy and urinary bladder repair. Intra-operative finding was intraperitoneal bladder rupture (full thickness) involving entire length of bladder dome with multiple ischaemic edges (Fig 3). The size of the rupture was much larger than previously estimated by CT abdomen. Patient recovered well from the injury with normal voiding function.

DISCUSSION

Bladder traumas are divided into broad categories of extraperitoneal (EP), intraperitoneal (IP), or combined injuries which guide the management plan¹. It also can be classified mechanism of injury, either blunt (67-86%) or penetrating trauma². Bladder injuries are associated with a pelvic fracture in over 70% of cases; conversely, up to 30% of pelvic fractures are associated with a degree of bladder injury².

In this case, patient suffered from intraperitoneal bladder rupture. Intraperitoneal bladder injury should always be managed with surgical exploration and repair². This is because other organ might be involve due to high degree force. Furthermore, the epilepsy itself can disrupt patient's urinary function including incontinence, urgency, and retention⁵. It is suspected that the patient had urinary retention with distended bladder at the time trauma occurred which pre-disposed patient to urinary bladder rupture even though the force of injury relatively low compare to for example falling from height or high velocity motor vehicle accident.

Conversely, extraperitoneal bladder rupture mostly can be managed conservatively by catheter drainage alone^{2,4}. Study has shown 85% of bladder injuries have healed by 10 days in such cases². However, surgical intervention is indicated if the injury involved neck of bladder, bone fragments present in the bladder or entrapment^{2,5}.

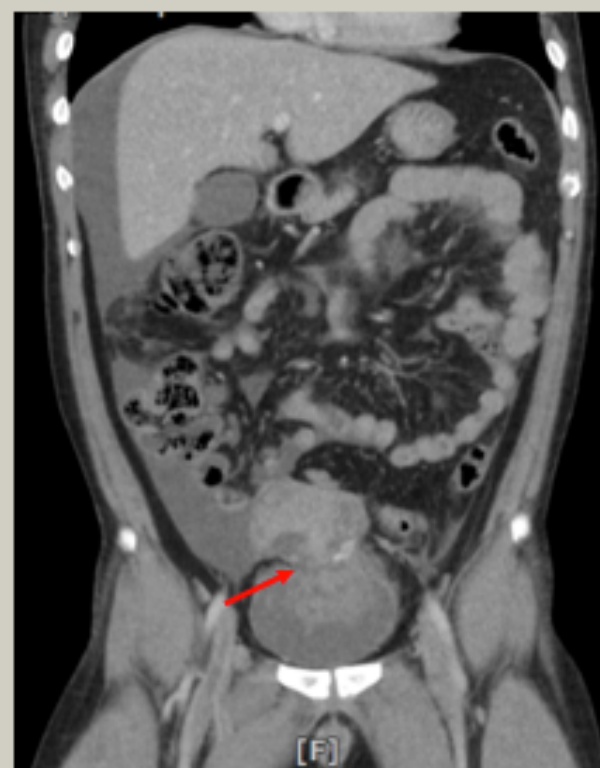


Figure 1



Figure 2

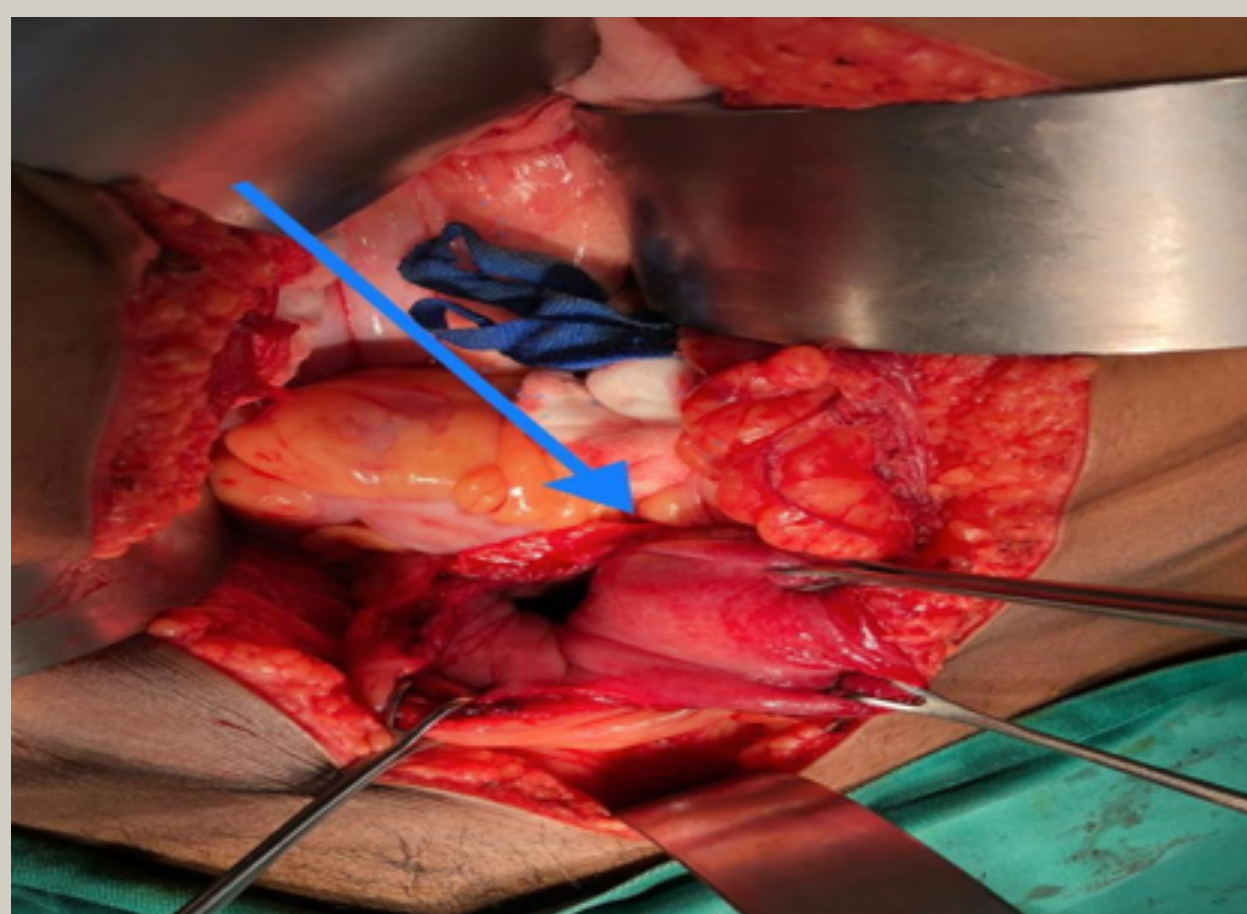


Figure 3

Complications from bladder injury may result from delayed in diagnosis and treatment. In this case, the diagnosis was quite prompt although the underlying epilepsy may divert the attention of attending clinician from the injury associated with the resulting fall. Complications include²:

- Urine ascites, ileus, peritonitis, intra-abdominal abscess a result of urinary extravasation
- Incontinence, fistulas and strictures may result from bladder neck, vaginal and rectal involvement
- Disruption of voiding function in neurogenic bladder injury

CONCLUSION

This case demonstrated that patient whom suffering from epileptic seizure may have serious injury associated with it. Bladder injury associated with fall from ground level is rare however a detailed history, meticulous examination and appropriate investigation tools may prevent delay in early diagnosis and treatment.

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