FAST examination diagnosing bladder rupture following blunt pelvic trauma

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Accepted 20 February 2018

DESCRIPTION

A 52-year-old man presented as a level 2 trauma notification after a plywood fell on him from 15 feet. On presentation, he was evaluated according to Advanced Trauma Life Support (ATLS) protocol. Secondary survey was significant for suprapubic tenderness and abrasions to bilateral hips. A focused assessment with sonography in trauma (FAST) examination was performed, showing echogenic fluid filling the bladder ([video 1](#)).

A Foley catheter was placed, and gross haematuria was noted. X-ray in the trauma bay showed fractures of the left superior and inferior pubic rami ([figure 1](#)). Subsequently, a CT cystogram was performed which showed large clot within the bladder with small extraperitoneal extravasation ([figure 2](#)). The injury was managed with transurethral Foley and gentle irrigation.

The FAST examination provides a rapid bedside screening tool for intraperitoneal free fluid and solid organ injuries. Blood clots within an injured organ may have similar echogenicity to that of the parenchyma. The sensitivity for detection of solid organ injury is therefore more limited and ranges from 41%–44%.¹

The bladder is well protected by the bony pelvis, making rupture relatively uncommon in blunt trauma. However, it remains an important injury to rule out because mortality rates can be as high as 22%.² Pelvic fracture with associated gross haematuria is an indication for immediate cystography.

Blunt extraperitoneal bladder rupture should be treated conservatively, with non-operative management having comparable outcomes to primary repair.³ Relative contraindications to conservative

Figure 1 Mildly displaced fractures (arrows) involving the left superior and inferior pubic rami.

Figure 2 (A, B) CT cystography with a large clot within the bladder (blue arrow) and a small amount of extraperitoneal extravasation visible at the posterior aspect of the bladder (red arrow).

management of extraperitoneal bladder rupture include bone fragments protruding into the bladder, open pelvic fractures and concomitant rectal injuries.³ The use of transurethral catheters is preferred

Video 1 Focused assessment with sonography in trauma examination performed in the trauma bay showing echogenic fluid filling the bladder.

Learning points

- ▶ Focused assessment with sonography in trauma examination is less sensitive for diagnosing solid organ injury and ranges from 41%–44%.
- ▶ Haematuria and pelvic fractures are seen together in 90% of bladder ruptures. When both are present in blunt trauma, cystography should be performed.
- ▶ Extraperitoneal bladder injuries should be managed non-operatively with drainage using transurethral catheter alone. Intraperitoneal bladder injuries should be managed by primary repair with transurethral catheter or suprapubic tube drainage.

To cite: Bain K, Kassapidis V, Meytes V, et al. *BMJ Case Rep* Published Online First: [please include Day Month Year]. doi:10.1136/bcr-2017-223933

over suprapubic catheters, resulting in fewer complications and fewer days of catheterisation.³

Contributors KB, VM, VK: writing and editing. KB, VM, VK, GG: final editing and submission.

Funding This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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