



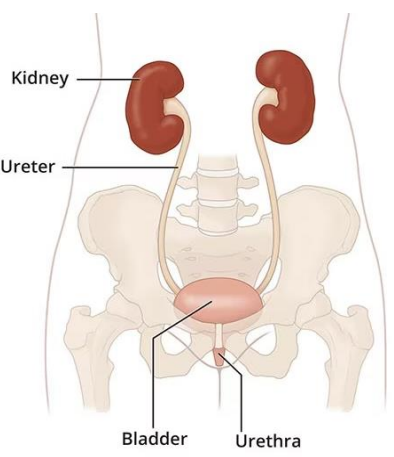
Isolated Intraperitoneal Bladder Rupture secondary to Blunt Abdominal Trauma secondary to Vehicular Crash in a Philippine Provincial Hospital.

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Abstract

Urinary bladder rupture secondary to blunt abdominal trauma is uncommon and is usually associated with pelvic and other solid and hollow viscus injuries. The authors presented 10 cases of isolated intra-peritoneal bladder rupture secondary to Vehicular crash at a Tertiary Provincial Hospital in the Philippines from January – December 2022. All patients presented in this case report were males, with history of alcohol intoxication prior to injury. All patients sustained injury from self-accident secondary to vehicular crash. Of the 10 patients, 8 patients presented with acute surgical abdomen while 2 patients had equivocal abdominal findings on consultation and underwent ancillary procedures like for FAST and cystogram. All patients were managed using the EAST and the AUA guidelines for bladder injury. All patients underwent exploratory laparotomy with primary repair of bladder injury. Patients were all discharged with uneventful post-operative course. They were subjected to post-operative cystogram noting full closure of the repaired bladder. Low impact blunt abdominal injuries in intoxicated patients with blunt injury presenting at the emergency department is proposed to have a risk of having isolated bladder injury even in the absence of ancillary tests like FAST or CT scan. In this unique set of patients, intraperitoneal bladder injuries occurred without concomitant pelvic fractures, hollow viscous injuries and solid organ injuries. Three-layered cystorrhaphy remains the surgical treatment for intraperitoneal bladder injuries.

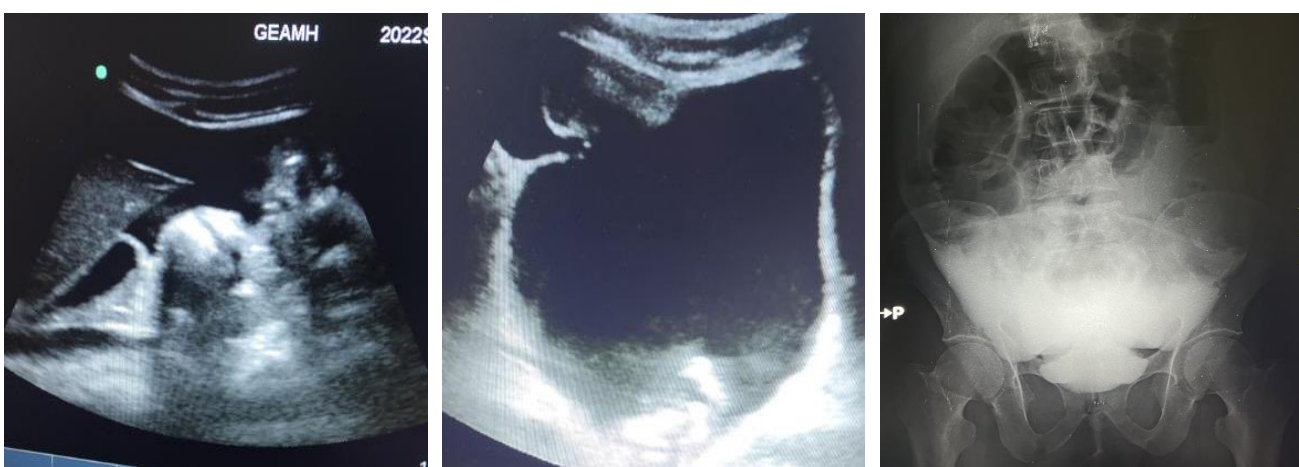


10%
Of All Abdominopelvic Injuries

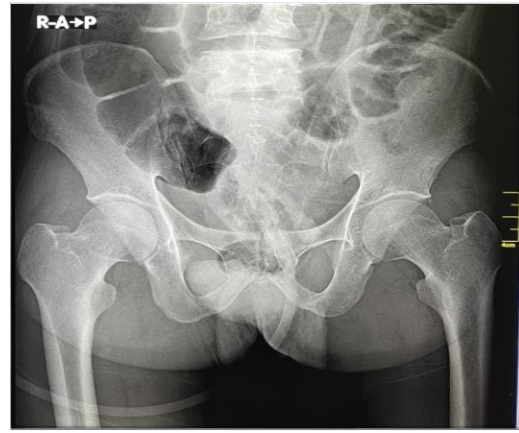
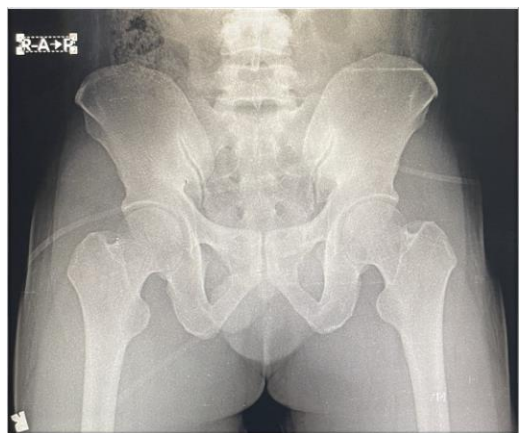
<2%
Isolated Bladder Rupture



25%
Hematoma
75%
Grossly normal

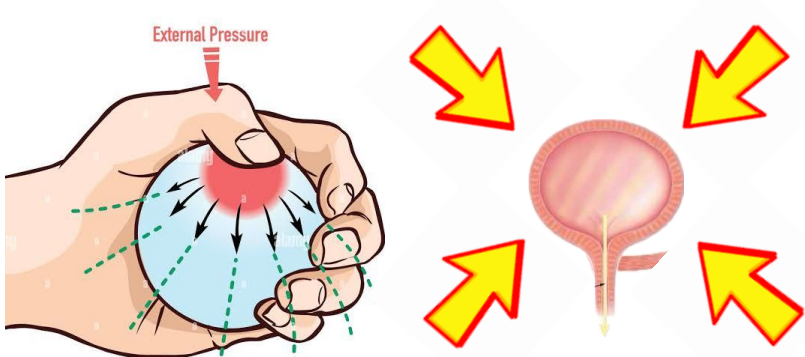


Two patients who presented with equivocal findings were subjected to adjunct imaging tests such as Focused Assessment Sonography for Trauma (FAST) which revealed a non-intact bladder with positive fluid at the hepato-renal area. Cystogram was also done which revealed intraperitoneal extravasation of dye consistent with perforation or rupture of the bladder.

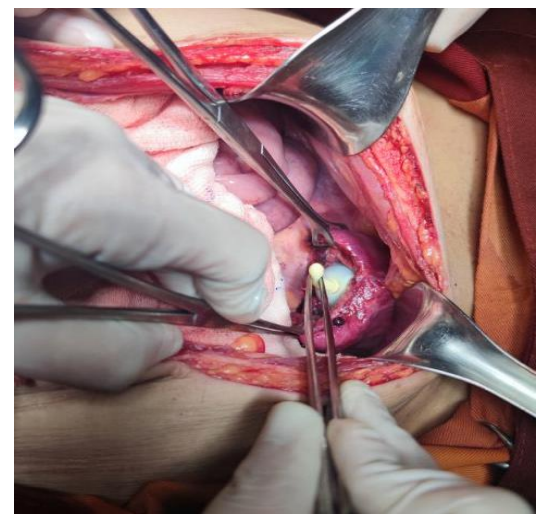
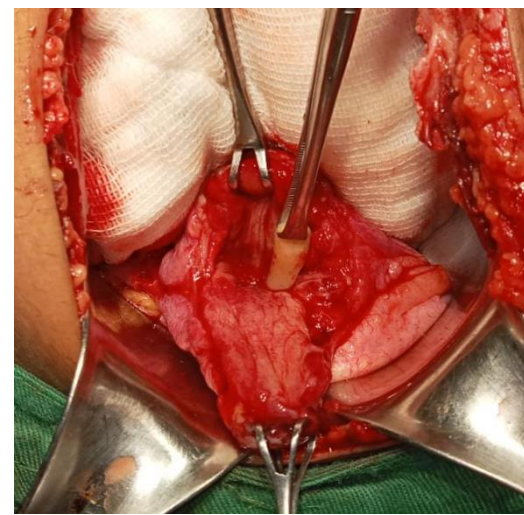
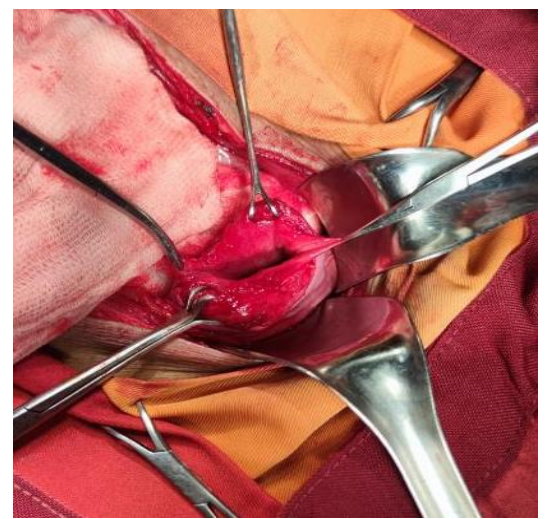
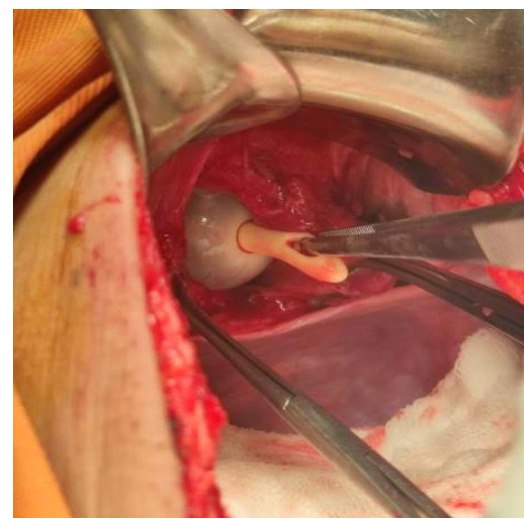


Since all patients were stable upon consult, possibility of a concomitant pelvic fracture was ruled-out using a pelvic AP xray which revealed unremarkable results for all patients.

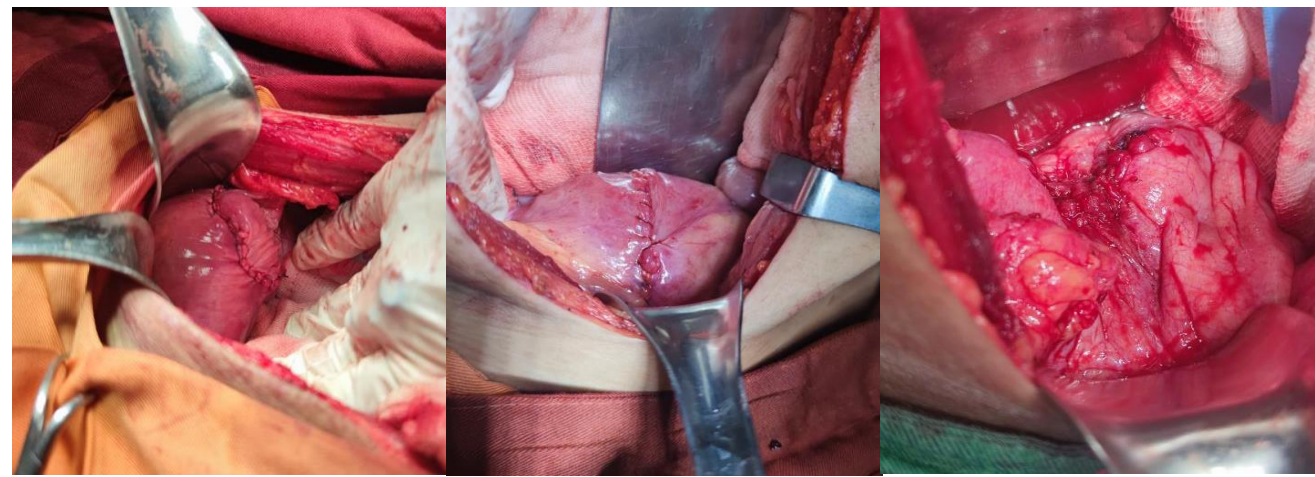
Pascal's Law



"When a change in pressure is applied to an enclosed fluid, it is transmitted undiminished to all portions of the fluid and to the walls of its container."



All patients underwent emergency Exploratory Laparotomy with findings consistent with urinary bladder rupture. All patients has laceration of more than 5cm at the bladder done with visible Foley catheter balloon. All other organs were assessed intra-operatively with unremarkable findings. Isolated bladder rupture without concomitant pelvic fracture were noted in all patients.



All patient underwent Cystorrhaphy using absorbable sutures (Chromic 2-0 round and Vicryl 2-0 round), using continuous suturing technique. After the repair, leak test were done for all patients by instilling 300cc of sterile NSS solution into the bladder via the Foley catheter which were clamped to achieve pressure in the bladder, noting absence of water leak.



Conclusion

Isolated bladder rupture secondary to blunt abdominal trauma from a vehicular crash is a rare entity. In majority of cases, bladder injuries were almost always associated with pelvic fractures. The EAST and AUA guidelines clearly states the management of bladder injuries as employed in this study. Were it is concluded that proper physical examination and history taking are the corner stone of treatment.