

Intraperitoneal Bladder Rupture: A Common Consequence of Blunt Abdominal Trauma

Intraperitoneal Mesane Ruptürü: Künt Karın Travmasının Yaygın Bir Sonucu

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A 22-year-old woman presented to the emergency department with a 2-hour history of abdominal/flank pain. She was involved in a motor vehicle collision where she was the driver. Airbags were deployed, but her seat belt compliance was unknown at the time of injury. Her medical history was mysterious and unattainable due to her altered mental status. On general appearance, the patient appeared intoxicated. Physical examination was only significant for abdominal tenderness to palpation. Vital signs revealed hypotension (97/64 mmHg). All other values, such as pulse, temperature, oxygen saturation, and respiration, were within normal limits. Laboratory values on admission revealed elevated transaminases (AST 117/ ALT 86), and urinalysis showed hematuria (RBCs >182/HPF). All other values were within the normal range. A FAST (focused assessment with sonography in trauma) ultrasound was subsequently done, which revealed free fluid collection within the abdomen.

A multidisciplinary team, including urological surgery, was consulted. A subsequent computed tomography (CT) scan of the abdomen and pelvis showed intraperitoneal extravasation of contrast, consistent with dome rupture (**Figure 1**). Exploratory laparotomy was performed after and revealed a rupture across the bladder dome (**Figure 2**). The bladder was surgically repaired (3-0 Vicryl), and a Foley catheter was placed for twelve days. On follow-up, a cystogram was performed, which confirmed bladder healing, and the catheter was removed. The postoperative course was uncomplicated, and the patient completely recovered after two months.

Bladder rupture is a rare condition due to the protection of the bladder by the sturdy pelvic bones [1]. Today, bladder injuries remain relatively uncommon, accounting for only up to 10% of abdominal trauma [1-3]. Although motor vehicle collision is the most common cause of injury, intragenic causes, including surgical and endoscopic procedures, have also been identified

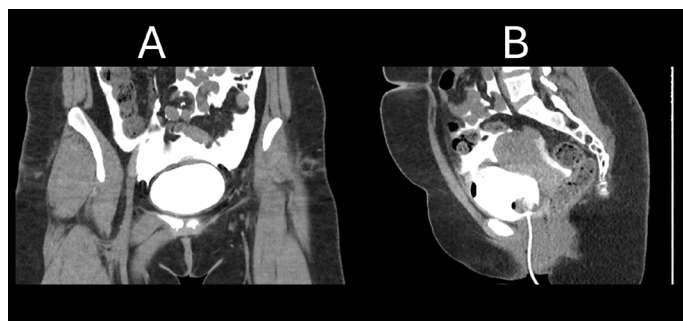


Figure 1. A computed tomography scan of the pelvis showing extravasation of contrast, which is consistent with an intraperitoneal bladder rupture. A: coronal view; B: sagittal view

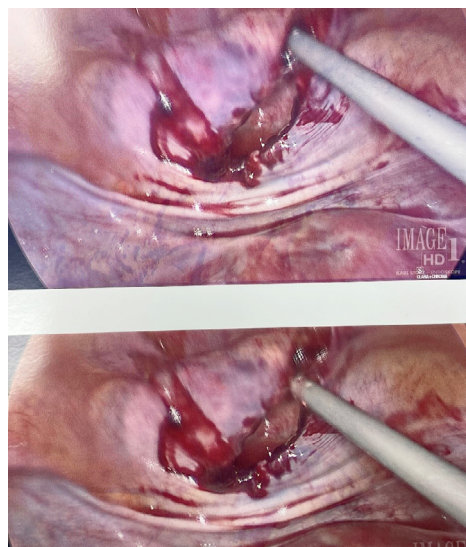


Figure 2. Laparoscopic view of the abdomen demonstrating free blood-stained fluid in the pelvic cavity and rupture across the dome of the bladder

[4,5]. Bladder rupture can be divided into intraperitoneal or extraperitoneal rupture [2]. Extraperitoneal injuries are the most common among the two, accounting for approximately 80% of cases, with a general association of pelvic fracture with damage to the bladder trigone, neck, or wall [6]. Extraperitoneal injuries are commonly treated conservatively (with catheter drainage via foley or suprapubic tube) [7]. Most bladder ruptures, regardless of the classification, typically manifest with symptoms of pelvic pain with difficulty voiding and gross hematuria [4-7]. Intraperitoneal injuries, on the other hand, account for 15% of bladder injuries [8]. This typically occurs when there is a compressive force against a full bladder, which ruptures the weakest portion (dome) as presented in this patient [8,9]. A FAST ultrasound may be positive as urine accumulates in the abdominal cavity [9,10]. Treatment includes surgical repair, which has demonstrated high success rates [8-10].

Recent practical guidelines regarding intraperitoneal bladder injuries suggest surgical repair due to a more considerable risk for lacerations with poor wound healing, electrolyte derangement, and peritonitis [6-10]. According to the American Urological Association (AUA) guidelines, extraperitoneal injuries should be managed conservatively [4-7].

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