

Case Report

Spontaneous Urinary Bladder Rupture Due to a Hypnotics Overdose

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Abstract

We reported on a hypnotic overdose young female who was taken to the emergency department because of abdominal pain, acute kidney injury, and an unexplained massive ascites. The final diagnosis was spontaneous urinary bladder rupture due to hypnotic-induced semi-coma. Hypontics overdose greatly influenced the patient's ability to urinate and contributed to prolonged urinary retention, which resulted in the rupture of urinary bladder. However, the history and physical examinations of these intoxicated patients are usually questionable. As a result, we proposed a triad of clinical manifestations – abdominal pain, acute kidney injury and a massive ascites. The presence of these clinical findings together should prompt physicians to consider spontaneous urinary bladder rupture.

Keywords: Urinary bladder rupture; Urinary retention; Acute kidney injury; Ascites; Abdominal pain; Hypnotics

Introduction

Spontaneous urinary bladder rupture is rare and it is difficult for physicians to diagnose the uncommon disease in intoxicated patients. We described a case of hypnotics overdose induced spontaneous urinary bladder rupture and demonstrate the useful clues for the diagnosis of this disease.

Case Report

A 28-year-old female was taken to our emergency department because of hypogastric pain that had persisted since that morning. The patient's mother said that she was healthy previously and denied any medical or surgical diseases. Six days earlier, she had an attempt to commit suicide by ingesting a large amount of hypnotics and was admitted to another hospital in a hypnotics-induced coma. Her family could not afford the medical cost after 3 days of admission and she was taken home against medical advice. At that time, she was still drowsy and, bedridden and relied on the care of her mother. On the day of the patient's visit to our emergency department, she complained of abrupt onset hypogastric pain that was not associated with nausea, diarrhea or fever.

Physical examination revealed an acute ill-looking and drowsy female with a pulse of 98 beats per minute, blood pressure of 154/101 mmHg, and temperature of 35.6°C. Her abdomen was distended and diffusely tender for palpitation. Her initial blood tests showed obvious leukocytosis and acute kidney injury with a white blood cell count of 24100/µl, a serum creatinine level of 11.1 mg/dl and a blood urea nitrogen level of 61 mg/dl. Other laboratory studies demonstrated a glucose level of 159 mg/dl, a sodium level of 134.4 mmol/l, a potassium level of 4.63 mmol/l, an aspirate aminotransferase level of 26 IU/l, an alanine aminogransferase level of 16 IU/l, hemoglobin of 14.1 g/ dl and a platelet of 42.8×10^4 /µl. The findings of chest X-ray and electrocardiogram were unremarkable. The urine collected by single catheterization revealed a red cell count >100/HPF, a white cell count 20-30/HPF and a negative pregnancy test.

The patient was admitted for acute kidney injury, urinary tract infection and abdominal pain. Given the unknown etiology of the pateint's abdominal pain, an abdominal computed tomography scan without contrast enhancement was taken, which showed only a massive ascites (Figure 1). The gynecologic consultation found no abnormality except the ascites. Ten hours after admission, no urine had been passed and a Foley catheter was placed yielding 2000 ml of urine. The next day, her abdominal pain and distension subsided; the ascites diminished; and her renal function was markedly improved with a creatinine level of 1.35 mg/dl and a blood urea nitrogen level of 14 mg/dl. Urological consultation suspected urinary bladder rupture and subsequent cystography revealed contrast leak from the urinary bladder, which confirmed the diagnosis (Figure 2). The patient underwent nonoperative management with urinary bladder drainage. In addition, her consciousness improved gradually and she was discharged home after 5 days of hospitalization.

Discussion

Spontaneous urinary bladder rupture is uncommon with an estimated incidence of 0.002% according to the emergency department census [1]. Chronic diseases of the urinary bladder and prolonged urinary retention are common factors associated with spontaneous urinary bladder rupture [1,2]. A number of chronic diseases of urinary bladder, including pelvic malignancy and subsequent radiotherapy, previous bladder surgery or instrumentation and repeated infection



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Figure 2: Cystography: The arrow indicates the contrast leak from the urinary bladder.

or inflammation of bladder, are known to predispose patient's urinary bladder to rupture [1,2]. It is relatively easy for physicians to diagnose urinary bladder rupture in patients with pre existing urinary bladder diseases. Prolonged urinary retention often occurred in debilitated, comatose or intoxicated patients. The history and physical examinations of these patients are usually incomplete and questionable, and as a result, physicians do not always consider the diagnosis of urinary bladder rupture [1,3]. For the case presented herein, the hypnotics overdose greatly influenced the patient's ability to urinate and contributed to urinary bladder.

Additionally, drug clearance is markedly affected in patients with kidney injury [4]. The peritoneum may reabsorb active metabolites of hypnotics from urinary ascites [5], and this re absorption may have led to the prolonged depressed consciousness of the patient.

Most patients with spontaneous urinary bladder rupture present

to the emergency department complaining of abdominal pain, suprapubic tenderness, difficulty in voiding, dysuria, and oliguria [1-3]. Their laboratory tests often reveal acute kidney injury, hematuria and leukocytosis, which deviate physicians to the inaccurate diagnosis of urosepsis [6,7]. If the physicians chose abdominal computed tomography to evaluate the patient's abdominal pain, the utilization of intravenous contrast often be precluded owing to the presence of acute kidney injury [8]. In most circumstances, these non-contrast images are unable to demonstrate the defect in urinary bladder wall and show an unexplained, large amount ascites only. Accordingly, we proposed a triad of clinical manifestations for spontaneous urinary bladder rupture- abdominal pain, acute kidney injury and a massive ascites. The presence of these clinical findings together might prompt physicians to consider spontaneous urinary bladder rupture, especially for these patients who have experienced a period of a depressed consciousness state.

References

- Su PH, Hou SK, How CK, Kao WF, Yen DH, et al. (2012) Diagnosis of spontaneous urinary bladder rupture in the ED. Am J Emerg Med 30: 379-382.
- Dubey IB, Mohanty D, Jain BK (2012) Diverse presentation of spontaneous rupture of urinary bladder: review of two cases and literature. Am J Emerg Med 30: 832.
- 3. Pintar TJ, Wilke RA (1998) Urinary ascites: spontaneous bladder rupture presenting as acute oliguric renal failure. Am J Med 105: 347-349.
- Smith BS, Yogaratnam D, Levasseur-Franklin KE, Forni A, Fong J (2012) Introduction to drug pharmacokinetics in the critically ill patient. Chest 141: 1327-1336.
- Dedrick RL, Flessner MF (1997) Pharmacokinetic problems in peritoneal drug administration: tissue penetration and surface exposure. J Natl Cancer Inst 89: 480-487.
- Mitchell T, Al-Hayek S, Patel B, Court F, Gilbert H (2011) Acute abdomen caused by bladder rupture attributable to neurogenic bladder dysfunction following a stroke: a case report. J Med Case Rep 5: 254.
- Png KS, Chong YL, Ng CK (2008) Two cases of intraperitoneal bladder rupture following vaginal delivery. Singapore Med J 49: e327-329.
- Weisbord SD, Palevsky PM (2011) Contrast-induced acute kidney injury: shortand long-term implications. Semin Nephrol 31: 300-309.