Micropapillary carcinoma of the bladder presented with spontaneous intraperitoneal bladder rupture

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Cite as: *Can Urol Assoc J* 2012;6(2):e42-45. http://dx.doi.org/10.5489/cuaj.10118

Abstract

Spontaneous bladder perforation is a rare presenting feature of bladder malignancy. We describe an unusual case of a patient, admitted to emergency, with diffuse abdominal pain due to spontaneous bladder rupture in association with a micropapillary carcinoma. A diagnosis of an intraperitoneal bladder perforation was made during an emergency operation. Aspects of etiology, clinical presentation, diagnosis and management are described. Although cases of spontaneous carcinomatous bladder rupture are associated with high morbidity and mortality, prompt identification and treatment can lead to favourable outcomes.

Introduction

The spontaneous intraperitoneal rupture of the urinary bladder is extremely rare and life-threatening. The reported cases of spontaneous bladder rupture have been associated with very different conditions, such as ongoing chronic diseases of the bladder wall (squamous or transitional cell carcinoma,[1] tuberculosis, cystitis, radiation necrosis, stones[2]), acquired or congenital bladder diverticula,[3] alcohol intoxication,[4] normal vaginal delivery,[5] enterocystoplasty, pelvic radiotherapy,[6] anatomical outflow obstruction, indwelling catheters and neurogenic bladder.[7] The reported mortality rate associated with complications from bladder rupture has been estimated at 50%, but has declined in recent years due to better management of its serious complications, like hyperkalemia, renal failure and sepsis.[8]

Micropapillary carcinoma (MPC) of the bladder is the last defined bladder carcinoma.[9] It is considered a rare variant of urothelial carcinoma with aggressive behaviour and accounts for less than 1% of bladder tumours.[10] According to the published reports, its prognosis is poor and mainly affects men between 50 and 90 years.[11] The patient with spontaneous rupture of the bladder presented here had a perforation which occurred through an area of MPC. This was very unusual and, to our knowledge, there is no similar report in the literature.

Case report

A 79-year-old male was admitted with a 6-hour history of sudden-onset generalized abdominal pain. He had complained of hematuria and dysuria for many years, but this had been considerably more troublesome just before admission. He denied any abdominal trauma or alcohol intake and has no documented accompanying illness. On physical examination, the patient was afebrile, with moderate to severe lower abdominal pain, suprapubic and diffuse abdominal tenderness, moderate distention and rigidity and left inguinal scrotum hernia. He also had subtle signs of circulatory failure (blood pressure 105/65 mmHg, heart rate 120 beats per minute). His white cell count was 31.5×10^9/L, serum sodium 134 mmol/L, potassium 5.2 mmol/L and creatinine 290 umol/L. His level of urea (20.1 mmol/L) showed moderate acute renal failure. Plain abdominal X-ray showed only distension of the stomach with a level. An urgent abdominal ultrasound examination showed multiple intraperitoneal fluid collections and full urinary bladder, hidden episode of acute urinary retention, with calcified filling defects of about 30 mm on the right side and dome (Fig. 1). Upon catheterization, 1.5 L of purulent urine was drained from the bladder. There was significant pyuria and bacteriuria on urinalysis. No cross-sectional imaging was done.

A provisional diagnosis of an acute abdomen was made and an open laparotomy carried out. At laparotomy, the peritoneal cavity was found to be filled with about 300 mm of foul smelling urine. The dome and posterior bladder wall was thinned out in areas of about 5 cm with suspicion of a neoplastic transformation, and a 3 mm perforation was identified from which there was leaking bloodstained urine (Fig. 2). The area of bladder necrosis was partly excised and