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Spontaneous rupture of a bladder with invasive bladder carcinoma

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Introduction

Spontaneous bladder perforation associated with bladder tumor is extremely rare. Such patients generally present with the clinical condition of an acute abdomen, and in these settings the mortality rate is very high (1).

Case Report

A 75-year-old woman presented with sudden onset of severe abdominal pain, nausea and vomiting. Physical examination revealed an acutely ill and pale patient with abdominal tenderness and rigidity, especially in both lower quadrants and decreased bowel sounds. A small amount of cloudy urine was obtained through the inserted urethral catheter. Blood pressure and pulse rate were 100/70 mm Hg and 200 per minute, respectively. Intravenous administration of fluids and antibiotics was started immediately and the patient was transferred to the x-ray unit. The plain film of the abdomen showed suspicious hydroaeric levels. Since the general condition of the patient deteriorated within two hours of the observation period, she was taken to the operating room and an urgent laparotomy was performed. At surgery, approximately 500 ml of cloudy fluid was aspirated from the abdominal cavity. Abdominal organs were normal when explored, but a perforation of 3 cm in diameter was found on the dome of the bladder. When opened, the bladder was full of tumoral masses and necrotic tissues. Several biopsies were obtained from the masses and bladder wall. Bilateral slight ureteral dilatation was noted and bilateral ureterocutaneostomies were performed following primary closure of the bladder. Histological examination of the specimens revealed poorly differantiated transitional cell carcinoma of the bladder with serosal invasion. The general health status of the patient rapidly deteriorated in the postoperative period and she died of cardiopulmonary disturbances and electrolyte imbalance on the 20th day following surgery.

Discussion

Spontaneous rupture of the bladder without trauma is very rare. In those cases an underlying cause such as tuberculosis, schistosomiasis, diverticulum, overdistension or tumor can usually be found (1). A spontaneous perforation due to bladder tumor is even rarer. To our knowledge only three cases have been reported in females (2,3,4).

Early clinical symptoms are not specific to the bladder rupture and the patients generally present to a general surgeon with the clinical findings of an acute abdomen. If such a patient has a history of urological problems, bladder perforation can be considered preoperatively as a possible diagnosis (1).

The diagnostic test of choice is cystography if preoperative diagnosis of a bladder rupture is suspected, though false negative cystography with bladder perforation is not uncommon (5). Lowe et al reported the successful use of CT scan in confirming the diagnosis of bladder rupture, when cystography is negative or equivocal (6).

The possible pathogenesis of bladder rupture in patients with bladder carcinoma is precipitation of perforation on the weakened bladder wall by the tumor. If overdistension is associated with the tumor, a perforation can more easily occur on the affected portion of the bladder wall (1).

The general mortality rate from spontaneous bladder rupture is between 25 and 47% (1). If such patients have associated bladder tumors, the prognosis is worse with a mortality rate of up to 80 % in undiagnosed cases (4). Although the selected treatment in

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these patients is cystectomy, poor clinical condition of the patient, as in our case, can demand a less aggressive surgical treatment such as peritoneal lavage, primary closure of the defect and bladder drainage.

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