

中文題目:自發性膀胱破裂伴隨腹腔尿液滲漏

英文題目:Spontaneous bladder rupture with urine leakage into abdominal cavity

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Introduction

Bladder rupture is relatively uncommon and the major (80-90%) cause is abdominal trauma. However, spontaneous bladder rupture still has some case reports in the past. Due to no trauma history, delayed diagnosis and non-specific presentation occur easily. More severe complications are also mentioned compared with traumatic bladder rupture, even up to 25-50% mortality was ever reported. (1) Therefore, early detection of spontaneous bladder rupture is important in order to give instant treatment. We propose an unusual case of spontaneous bladder rupture with urine leakage into abdominal cavity and make a brief summary of current available literature.

Case report

This 72-year-old male has underlying disease of hypertension, gouty arthritis and chronic kidney disease.

At July 13, 2020, he went to our ER due to progressive dyspnea, decreased urine output and abdominal fullness. Total 4000ml urine amount was recorded after urethral catheter insertion. Urine analysis showed gross hematuria. Abdominal CT revealed bilateral hydronephrosis, hydroureter and highly suspected bladder cancer. On the next day, no urine output and progressive abdominal distension were noted. The abdominal echo showed massive ascites. Elevated creatinine level of up to 20.55mg/dL was detected through paracentesis. The cystography by plain film after urografin injection through urethral catheter revealed contrast leakage from bladder wall. Based on above findings, spontaneous bladder rupture with urine leakage was confirmed. Therefore, bilateral PCN was inserted and broad-spectrum antibiotic was administered for preventing peritonitis.

After review of possible etiologies of spontaneous bladder rupture, bladder cancer with severe urine retention is the most favored cause. However, ITP-related thrombocytopenia was another major problem for this patient. Neither bladder wall biopsy through cystoscopy nor laparotomy was acceptable for bladder cancer evaluation due to high risk of bleeding tendency. Therefore, we kept conservative treatment with catheter indwelling and consulted hematology for the further

management of ITP. Single tapping of ascites was done for two times because urine leakage was still noted through progressive abdominal circumference.

After two weeks of catheter indwelling, the CT-cystography showed persistent contrast leakage from bladder wall; therefore, surgical repair was needed. However, his platelet count was still below 5000/ μ L even under high dose steroid and azathioprine therapy. Due to poor control status of ITP, there was no invasive procedure could be arranged.

Unfortunately, his condition became worse with progressive Cr(4.79 mg/dL)and BUN(191.3 mg/dL)level. Dyspnea and consciousness change were noted at August 6,2020. The lab data showed metabolic acidosis due to CKD AE and emergent hemodialysis was suggested. However, his family have signed the DNR.

At August 7,2020, the patient expired due to progressive metabolic acidosis.

Therefore, real cause of spontaneous bladder rupture of this patient was still unknown. However, bladder cancer with severe urine retention was highly suspected depending on his clinical presentation and image report.

Discussion

Bladder rupture is rare and may be caused by external trauma, intragenic means or spontaneous rupture. The most common cause is trauma, especially blunt trauma and the incidence rate is about 1.6%. Furthermore, up to 80% of patient with bladder rupture also have pelvic fracture, bowel injury or other intra-abdominal solid organ injury. For those without obvious trauma history(called spontaneous bladder rupture,SBR), the exact incidence is unknown; however, the reported incidence has been as low as 1:126000 in hospital admissions(3).

The clinical presentations of bladder rupture include hematuria, suprapubic tenderness, decreased urine amount, abdominal distension or peritonitis. Depends on the anatomy, we classify the injury as extra(EPR) or intraperitoneal(IPR). The incident rate of EPR(65%) is higher than IPR(25%). About the evaluation, the retrograde cystography by plain films has proved 100% accurate in large series for diagnosis(4). The procedure is performed by passively filling the bladder with water-soluble contrast media via urinary catheter and check the post drainage films. Despite the efficacy of standard plain film cystography, computed tomography (CT) cystography with contrast material through a urethral catheter is often required to evaluate pelvic fracture, intra-abdominal injuries or confirm the type of bladder rupture.

Management for bladder rupture depends on the type of rupture. IPR will always require surgical repair, while EPR can be managed with catheter drainage alone in a

majority of cases. However, some successful case reports have been published about the non-operative management in IPR since 2000. Urological science in 2014(5) performed a case report and mentioned that the most important part in treating IPR is absolutely complete drainage. Therefore, conservative treatment for IPR may have its place in the future.

Back to our patient, he had gross hematuria, sudden-onset of abdominal distension and cystography by plain film revealed contrast leakage, which were all compatible with the diagnosis of bladder rupture. Furthermore, IPR was confirmed due to elevated creatinine level noted through paracentesis. Based on clinical presentation and abdominal CT report, we thought the most favored cause of spontaneous bladder rupture was bladder cancer combined with severe urine retention. However, it was challenging for us to prove our guess due to persistent thrombocytopenia. Fortunately, there was no fever episode or peritoneal sign during the admission. The abdominal circumference also became stable after one week. Therefore, we arranged the CT- cystography to confirm whether conservative treatment was possible for IPR or not. However, the image revealed persistent contrast leakage even though previous reports showed 7-10 days was enough for spontaneous healing of bladder wall. Therefore, catheter indwelling seemed not a proper choice for patient with IPR.

However, there are some questions for this patient. First, we are not sure about the real cause of SPR. We just can guess that it may be the result of bladder cancer combined with severe urine retention. Second, we are not sure about the association between ITP and bladder rupture. Third, we don't know whether he needs more time for bladder wall healing compared to those without ITP. Eventually, we can not confirm that there is no improvement after the conservative treatment, because we use different method for cystography.

To summarize, we faced a lot of challenge from this patient, including the exact cause of bladder rupture and ITP control. However, this is the first case report of bladder rupture combined with ITP.

Reference

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