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Spontaneous Rupture of the Urinary Bladder - A Case Report and Review of Literature

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ABSTRACT

Introduction: *Spontaneous rupture of the urinary bladder [SRUB] is a rare event. Patients usually present with features of peritonitis and diagnosis is usually made at operation. There are several factors that can predispose patients to an event like this, but most commonly it includes a chronic increase in bladder wall pressure and chronic inflammatory states besides malignancy.*

Case Report: *A 42 years old male came in emergency surgery department with pain in abdomen. Ultrasonography of abdomen was suggestive of peritonitis for which he underwent exploratory laparotomy and was found to have perforation of urinary bladder which was repaired. Patient recovered uneventfully.*

Conclusion: *Rupture of urinary bladder must be included in the differential diagnosis of acute abdomen presenting with peritonitis. A high index of suspicion is essential in the presence of urinary symptoms. In the majority of cases, underlying bladder pathology has been identified, although idiopathic SRUB may occur.*

INTRODUCTION

Rupture of the urinary bladder is an uncommon and life threatening event. Often, there are obscurities in establishing exact diagnosis preoperatively which may lead to a very high mortality rate. It is also true that such patients are in advanced stage of their disease, a very few survive more than one year following diagnosis. There are several factors that can predispose patients to an event like this, but most commonly it includes a chronic increase in bladder wall pressure and chronic inflammatory states. We believe this is the aetiology in our patient.

CASE REPORT

A 42 years old male presented in emergency surgery department with history of pain in abdomen since 3 days. Pain was generalised and acute in onset. It was also associated with gradual distension of abdomen. Patient had done ultrasound of abdomen from outside private radiologist three days prior to coming to our institute which was suggestive of free peritoneal collection in abdomen and pelvis and bowel showed impaired peristalsis. Impression of peritonitis with paralytic ileus was given on imaging.

Clinical examination revealed that patient was dehydrated, with pulse rate of 100 beats per minute and blood pressure of 140/90 mm of mercury. Abdominal examination revealed distended abdomen with umbilicus shifted upward. On palpation, generalised tenderness along with guarding and rigidity of abdomen was present. Repeat ultrasound abdomen from our institute showed findings similar to previous scan.

Haematological parameters showed marked increased levels of serum Creatinine (4.8mg%: normal limit 0.7-1.5mg%) and serum Urea (174mg%: normal limit 15-40 mg%) levels. Per urethral catheter showed decreased urine output with bloody tinge. Patient was resuscitated and taken for exploratory laparotomy in view of peritonitis. Intraoperatively, 2 litres of serosanguinous fluid was drained from peritoneal cavity. Bowel was traced and no perforation of bowel was found. There was sloughed out peritoneum over peritoneal surface of urinary bladder (Figure 1). Methylene blue dye was injected through Foley's catheter into urinary bladder intraoperatively. There was leak of dye from peritoneal surface of urinary bladder which confirmed perforation of urinary bladder (Figure 2). Sloughed out peritoneum was debrided, edges freshened and closed in two layers with 2-0 vicryl (Figure 3). Suprapubic catheterization was done through extraperitoneal surface of urinary bladder brought out from separate incision. Peritoneal lavage was given with normal saline. Abdomen was closed in layers after keeping two drains. Postoperative course was uneventful. Surapubic cystostomy catheter was removed after 14 days. Postoperative followup of one year has shown him to be symptom and disease free.

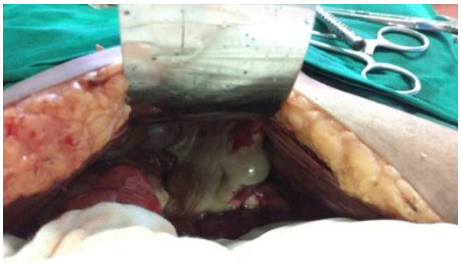

Figure 1: intraoperative finding showing slough over peritoneal surface of urinary bladder

Figure 2: Intraoperative figure after removing slough, perforation of urinary bladder was noticed with leak of methylene blue

Figure 3: Bladder perforation closed in layers

DISCUSSION

Spontaneous urinary bladder perforation is a rare and life-threatening condition making up less than 1% of all bladder injuries[1]. Prompt diagnosis followed by surgical intervention is the key for successful outcome. Most cases reported in the literature included an underlying aetiology responsible for the rupture[2]. These are chronic inflammation, bladder outflow obstruction and malignancy. In contrast, present case lacked any risk factors. Because of its rarity, spontaneous rupture of urinary bladder is often very low or is never on the differential leading to a very high mortality rate.

It was not until 1929 that Sisk and Wear first coined the term Spontaneous Rupture of Urinary Bladder (SRUB). They defined the condition as: "If the bladder ruptures without external stimulation, it is spontaneous and deserves to be reported as such"[3]. Glashan RW in 1967 has reported his case as first ever perforation in the male population in a patient with TCC [4].Glashan RW also attributed this to anatomical feature of the male urethra making the male bladder more liable to distension with consequent perforation. Budd JS [5] in 1988 reported his case as first ever reported case of spontaneous rupture of the female bladder associated with a transitional cell carcinoma (TCC).

Clinically most of patients presented with lower abdominal pain with associated symptoms of dysuria, unable to void, anuria and haematuria. In the majority of cases the symptoms of urinary tract infection were the initial complaints and this was later accompanied by peritonism. A clinical diagnosis of acute abdomen was made in our case, which was reviewed. Present case highlights that

male perforation in bladder may go undetectable and patients present late. This may be the cause of increased morbidity and mortality. The increased creatinine and urea was due to absorption of leaked urine from peritoneal cavity besides dehydration.

The diagnosis of Spontaneous Rupture of Urinary Bladder is a challenging endeavour. Schein et al. assert that it is normally an unrecognized diagnosis and is usually discovered during laparo-tomy[6]. Prompt diagnosis followed by surgical intervention is the key for successful outcome. Often, there are obscurities in establishing exact diagnosis preoperatively leading to a very high mortality rate. An accurate preoperative diagnosis of urinary bladder rupture was made only in two out of fifteen case reports [7, 8]. Interestingly, many of these cases were initially treated conservatively with catheterisation and antibiotics.

CONCLUSION

Patients with rupture of urinary bladder usually present with symptoms and signs of peritonitis. A history of unexplained urinary tract symptoms prior to the acute episode is not uncommon in most of these patients. A high index of suspicion is essential in the presence of urinary symptoms and signs suggestive of peritonitis. Rupture of urinary bladder must be included in the differential diagnosis of acute abdomen. This is a rare but potentially fatal condition with a mortality rate more than 80% [9]. One should suspect it in a patient presenting with an acute abdomen.

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