

Spontaneous bladder perforation – Subsequently diagnosed to be Genitourinary tuberculosis.

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Abstract: Spontaneous bladder perforation is a rare surgical emergency, presenting with signs of peritonitis, and often diagnosed on laparotomy. We present a case of acute abdomen with spontaneous bladder perforation which was subsequently diagnosed to be genitourinary tuberculosis. Urinary bladder wall biopsy should be taken in all cases of spontaneous bladder wall perforation to detect the underlying pathology.

Keywords: Bladder Perforation, spontaneous, tuberculosis

Date of Submission: 26-04-2019

Date of acceptance: 11-05-2019

I. Introduction

Spontaneous bladder perforation is a surgical emergency, presenting with signs of peritonitis, and often undiagnosed till laparotomy. It is very rare^[1] with a reported incidence of approximately 1:126000 and the overall mortality is 47%^[2]. Genitourinary tuberculosis is a very rare cause for spontaneous bladder perforation and only 5 cases, prior to this are found in literature. We present here a case of spontaneous bladder perforation secondary to genitourinary tuberculosis stressing the need to biopsy edge of perforation in all cases of spontaneous bladder perforation.

II. Case report

A 55 year old man presented to emergency department with history of severe abdominal pain of 1 day duration. There was no history of trauma or any other medical illness. On examination, the patient was afebrile with a pulse of 96bpm, BP: 110/70 mmHg. There was no significant lymphadenopathy. Per Abdominal examination revealed generalised tenderness and guarding with free fluid in abdomen and sluggish bowel sounds.

Laboratory parameters were: haemoglobin 10.8 gm%, WBC count 10800/dl with neutrophils 86% and platelet count 2.25lacs/dl. Blood sugars 86 mg%, urea 66 mg%, Serum creatinine 3.2 mg/dl.

Plain X-ray abdomen didn't reveal pneumoperitoneum. Abdominal ultrasonography revealed bilateral hydronephrosis with hydroureter, free fluid in abdomen and empty urinary bladder. Liver and spleen were normal. In view of raised serum creatinine, only plain CT abdomen was done which confirmed the sonography findings (Fig. 1). With the diagnosis of generalised peritonitis, patient was taken up for emergency laparotomy.

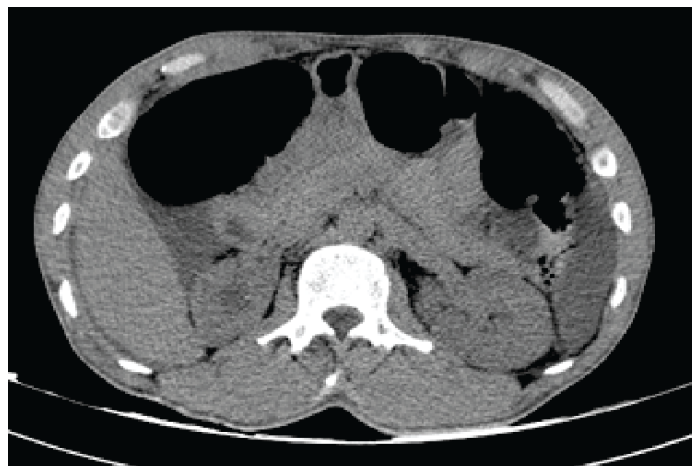


Fig. 1 Plain CT abdomen showing bilateral normal kidney

During surgery, it was found that he had a 2 x 2 cm perforation at the dome of the bladder. The bladder mucosa revealed signs of severe inflammation and the wall of the bladder was thickened. About 1.5 litres of fluid was present. Rest of the abdomen was unremarkable. There were no enlarged lymph nodes. After taking biopsy from the edge of the perforation, the bladder was closed in two layers using absorbable sutures. Foleys catheter was kept in the bladder for drainage and a drain kept in the pelvis.

Post operatively, patient had an uneventful recovery. The Histopathological Examination revealed granulomas with Langhans Giant cells and caseation, characteristic of tuberculosis. After obtaining histopathology confirmation, patient was started on Anti tubercular treatment consisting of 4 drugs: INH 300mg OD, Rifampicin 450mg OD, Ethambutol 800mg OD, Pyrazinamide 1500 mg OD. Foleys catheter was removed after two weeks.

III. Discussion

Tuberculosis is still a common disease in the developing world. Lately, due to effective and timely use of antitubercular drugs, the mortality due to tuberculosis is significantly decreased. Genitourinary tuberculosis accounts for 20 to 73% of all cases of extrapulmonary tuberculosis. Genitourinary tuberculosis is considered a severe form of tuberculosis. Kidney is the most commonly affected (61%) followed by ureter (19%) and bladder (16%)^[3]. Bladder is commonly involved secondary to lesions of kidney. The initial lesions in the bladder starts near one or both vesicoureteric junctions. The early lesion is usually erythematous and edematous with signs of inflammation. After some time, there will be ulceration and fibrosis and contracture of bladder wall. If still left untreated, it leads to small contracted bladder called “Thimble bladder” with patients complaining of frequency, pain, urgency, intermittency and hematuria^[4].

Bladder tuberculosis causing spontaneous bladder perforation is very rare. To date, only 5 cases are reported in the literature^[5-7]. Spontaneous bladder perforation can occur in a wide variety of other bladder diseases like schistosomiasis, eosinophilic cystitis, following pelvic radiotherapy, malignant tumors in the bladder, vesical calculus, interstitial cystitis^[8]. In the majority of cases the diagnosis is made only at laparotomy^[9]. Spontaneous bladder rupture often presents with lower abdominal pain to begin with, followed by signs of generalized peritonitis. There will also be history of oliguria or anuria. Renal dysfunction will be common on biochemical analysis due to renal tuberculosis or due to reabsorption of urea and creatinine. A cystogram is diagnostic, but rarely done as the condition is not suspected till found on laparotomy.

In our patient, the diagnosis was that of generalized peritonitis. Cystogram was not done since the diagnosis of bladder perforation was not suspected. The intra operative findings were suggestive of chronic infection most probably tuberculosis, as it is common in India. Therefore we avoided a suprapubic catheter. For a definitive diagnosis, a positive AFB culture or Histopathological examination of specimen is required. In our case the diagnosis was confirmed by the histopathological findings of chronic granulomatous inflammation with caseation and presence of Langhans Giant cells (Fig. 2).

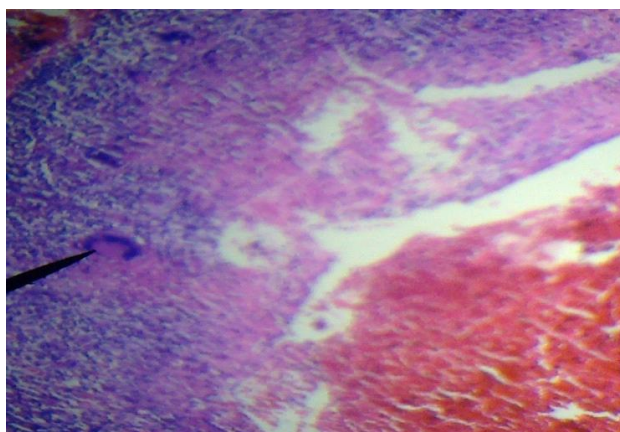


Fig 2. Histology of bladder showing Langhans Giant cells

Three of Five cases of spontaneous bladder perforation due to genitourinary tuberculosis were diagnosed on HPE of biopsies taken during laparotomy, while two were diagnosed on urine culture.

Table 1. Comparative chart of patients of Spontaneous bladder rupture secondary to urinary tract tuberculosis^[10]

Studies	Age/Sex	Serum creatinine	Diagnostic methods	Treatment	Outcome
Heffernan et. al.	41/Female	-	HPE	Laparotomy & repair, AKT	Survived
Doig et. al.	34/Male	-	HPE	Laparotomy & repair	Expired
Kumar et. al.	22/Female	-	Urine culture	PCN, bladder catheterisation on AKT	Survived
Kong et. al.	25/Female	5.9 mg/dl	HPE	Laparotomy & repair, AKT	Survived
Yueh Ting Lee et. al.	78/Male	1.4 mg/dl	Urine culture	Bladder catheterisation	Survived
Our Patient	55/Male	3.8 mg/dl	HPE	Laparotomy & repair, AKT	Survived

We started the antitubercular treatment using 4 drugs, during the intensive phase of three months followed by 2 drugs (INH & Rifampicin) for 6 months.

For follow up, patients should be re-evaluated with radiological investigations like ultrasonography, cystogram and CT scans at 6 months, 12 months after completion of this therapy.

IV. Conclusion

The diagnosis of spontaneous bladder perforation should be kept in mind in cases of peritonitis with findings of free fluid in abdomen in absence of pneumoperitoneum and elevated blood urea and serum creatinine levels. Urinary bladder wall biopsy should be taken in all cases of spontaneous bladder wall perforation to detect the underlying pathology.

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Prashant R. Lawande" Spontaneous bladder perforation – Subsequently diagnosed to be Genitourinary tuberculosis." *IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)*, vol. 18, no. 5, 2019, pp 52-54.