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Spontaneous Rupture of Urinary Bladder (SRUB): An Exceptional Presentation

Coulibaly Noël[1,2], Yao Evrard Kouamé[1,2], Adebayo Tawakaltu Bolasade[1,2], Tuo Legnima Sekou Michel[1,2], Yeo Donafologo Daouda[1], Diomandé Vamoussa[1]

[1]Service d'urologie, CHU Treichville, Abidjan, Côte d'Ivoire
[2]Département de Chirurgie et Spécialités Chirurgicales, Université Felix Houphouët Boigny, UFRSMA, Cocody, Abidjan, Côte d'Ivoire
Email: noel.coulibaly@univ-fhb.edu.ci

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Abstract

Background: Spontaneous rupture of urinary bladder (SRUB) without trauma is an extremely rare pathology. The incidence is estimated to about 1/126,000. It is difficult to diagnose. **Aim:** To present an exceptional case report and emphasize on the difficulty of diagnosis. **Case Presentation:** We report the case of a 63-year-old man. The initial diagnosis of SRUB was obscured by a urinary retention. The pelvic ultrasound finally led to the diagnosis. We will pay particular attention to the circumstances of the diagnosis and the therapeutic measures applied. **Conclusion:** SRUB is exceptional and misdiagnosis is usual. Management is most of the time surgical.

Keywords

Bladder Rupture, Spontaneous Rupture, Treatment

1. Introduction

Spontaneous rupture of urinary bladder (SRUB) is a rare clinical condition. It is a situation where the urinary bladder breaks without trauma. Few cases are reported in the literature [1] [2]. Risk factors have been identified and presented in several studies.

This rupture can occur in the peritoneal cavity or in a bowel [3]. The unusual nature of this clinical presentation can be misleading. We report the case of a patient admitted for acute urine retention and abdominal pain. The diagnosis was difficult due to the presentation. The worsening of the pain after bladder indwelling catheterization led to an abdominal and pelvic ultrasound examination. It concluded to an intraperitoneal rupture of the bladder.

Informed consent was obtained from the patient to present the case.

The manuscript was presented and approved by the Medical and Scientific Direction of CHU de Treichville.

2. Case

A 63-year-old patient was admitted with acute urine retention associated with abdominal pain. The symptoms started 72 hours before admission. He was unable to pass urinate despite an important urge. There were several unsuccessful urination attempts. During the last attempt, he heard an intra-abdominal clicking noise. He felt a decrease of the urge to urinate associated with hypogastric pain. He went to a primary care center where a transurethral catheter was placed. About 30 mL of haematic urine were collected. He was then referred to our department.

The history revealed Lower Urinary Tract Symptoms (LUTS) going on for approximately 3 years. It was marked by dysuria with a feeling of incomplete emptying of the bladder and pollakiuria. In addition, he had bilateral inguinal hernia repair 10 years ago.

At admission, the Glasgow score was 15 and the WHO performance status was 1. The hemodynamic status was satisfactory with a blood pressure of 130/80 mmHg and a pulse rate of 84/min. The patient had a latex urinary Fr18 catheter that did not drain urine. There was active urethrorrhagia exteriorized to the urethral meatus around the urinary catheter.

Examination of the hypogastrium found a globe reaching the umbilicus. Palpation of the abdomen was tender and defenseless overall. The digital rectal examination found an enlarged prostate, smooth, firm and painless. Moreover, Douglas cul-de-sac was slightly domed and not sensitive. We supposed a complete urinary retention following a possible iatrogenic trauma of the urethra associated to a benign prostatic hypertro phy. A Fr 20, two-way silicone catheter was placed and collected 1200 ml of hematic urine. The worsening of abdominal pain and appearance of peritoneal irritation required abdominopelvic ultrasound. It showed intraperitoneal fluid collection with the tip of the urinary catheter inside the peritoneal cavity. In addition there was a prostatic hypertrophy estimated to 65 ml with a median lobe. There was no dilatation of the renal cavities (**Figure 1**).

Biological values were disrupted with urea = 1.07 g/L and creatinine = 76 mg/L associated to hyperleukocytosis at 10.130 elements/mm^3.

A laparotomy for abdominal exploration was decided. Through a midline incision, examination found 500 ml of urine into the peritoneum and a wound at the bottom of the bladder (**Figure 2**). The length of the wound was about 5 cm and a portion of the ileum was incarcerated into it. We performed ileal extrication, excision of the wound edges and a two layer bladder suture (**Figure 3**). A peritoneal toilet was performed with 2000 ml of saline. The rectovesical excavation and the right parietocolic groove were drained by 2 drains. The excised margins were sent to the pathologist. No malignancy was found at pathology.

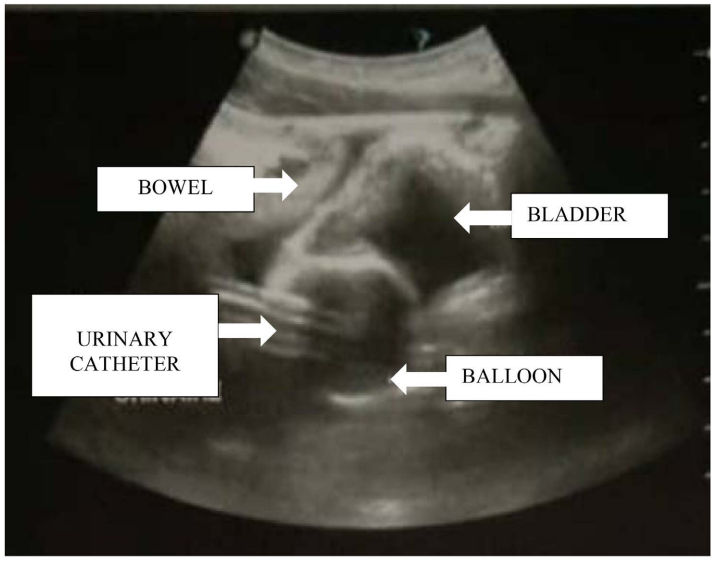

Figure 1. Abdominal and pelvic ultrasound.

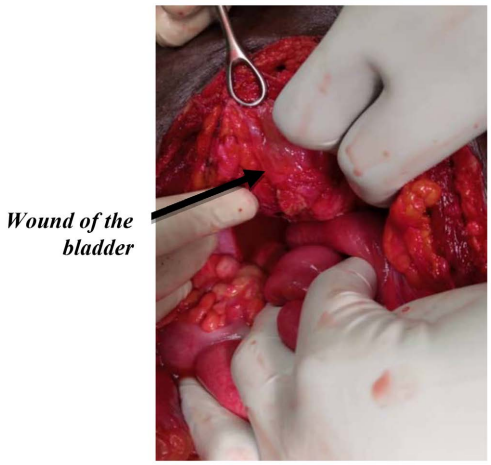

Figure 2. Wound on the posterior wall of the bladder.

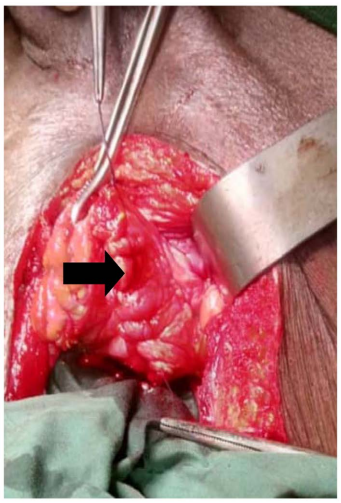

Figure 3. Two-layer bladder suture.

Postoperative management consisted of a double antibiotherapy and a pain killer treatment with monitoring of diuresis.

Follow up care was uneventful. The patient recovered fully and was discharged ten days after surgery. The prognosis was good after 6 months of follow up.

3. Comments

SRUB is a rare clinical situation. It is said to be spontaneous when it occurs without any trauma. In most of the cases, a double mechanism is involved associating a bladder outlet obstruction and a decrease in bladder compliance [4] [5].

The risk factors identified are alcohol intoxication, lower urinary tract obstruction, bladder tumor or inflammation, pregnancy,-bladder dysfunction, pelvic radiotherapy, history of bladder surgery and bladder diverticulum [6] [7] [8] [9].

Most of the cases reported concerns men, but women are also concerned [6].

In our case, the history of LUTS suggested the existence of an unexplored bladder outlet obstruction. Bladder retention on admission obscured the clinical presentation. The retention may be due to the ileum stucked in the wound, thus partially blocking the breach and promoting the filling of the bladder.

Clinical signs of a bladder rupture are polymorphic. Abdominal pain, hematuria as well as oliguria can be found. The presence of peritonitis can help in the diagnosis assessment. But in these cases, bladder perforation is not the first hypothesis to be mentioned [3] [10]. Keeler and Benchekroun, noted that the bladder dome was the preferred site of rupture [4].

In our daily practice, the discharge of a patient seen in emergency for bladder retention is performed after urinary catheterization. Etiological explorations are carried out on outpatient. In this case, the abdominal pain required surveillance. Worsening of the pain and the onset of peritoneal irritation led us to the diagnosis. Abdominal and pelvic ultrasound was useful for that purpose.

High serum creatinine values are due to urine reabsorption through the peritoneum but are not due to renal failure [8]. In Benchekroun and Keeler cases, bladder dome was the site of perforation [11] [12].

The treatment is most of time surgical. It consists of peritoneal toilet, closure and drainage of the bladder by urinary catheter, and perivesical drainage [3].

The presence of prostatic hypertrophy causing LUTS does not mean that we can formally rule out a pre-existing bladder lesion. There are several etiologies of spontaneous rupture of the bladder, the most frequent of which are: acute cystitis, urogenital tuberculosis or urolithiasis [13] [14].

The excision of the wound margins for pathologic examination was therefore mandatory before any suture. Benign prostatic hyperplasia will be treated latter.

4. Conclusion

Spontaneous rupture of urinary bladder is a rare condition difficult to diagnose. It was the first case of this entity managed by our team. Its presentation looks

like peritoneal irritation, with hematuria and oliguria. Medical imaging helps to assess the diagnosis. Treatment is surgical most of the time. The prognosis depends on the time to treatment and the etiology of the perforation.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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