Case report

Spontaneous bladder rupture following non traumatic vaginal delivery in a multiparous woman: A rare case report

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ABSTRACT

Introduction: Spontaneous bladder rupture (SBR) is a rare condition and often missed diagnosis, especially after a non-traumatic vaginal delivery. It is defined as rupture of the bladder in which no history of antecedent trauma nor any underlying bladder pathology can be found (1,2).

It was first reported by Kibel AS et al. in 1995 (2).

Due to the low incidence and the presence of non-specific symptoms, diagnosis was usually delayed with an increased morbidity and mortality. Therefore, its earlier diagnosis is essential for its correct resolution.

Clinical discussion: SBR following vaginal delivery is an extremely rare condition. It represents a surgical emergency. Due to the low incidence and the presence of non-specific symptoms, diagnosis was usually delayed with an increased morbidity and mortality. Clinicians should consider this diagnosis in the presence of an acute abdominal pain associated to anuria or dysuria.

We therefore recommend that the bladder be catherterized or drained before labour. Abdominal pain with elevated serum creatinine should be suspicious of urinary bladder rupture.

Conclusion: SBR is a rare and life-threatening condition in post-partum. Abdominal pain with elevated serum creatinine should be suspicious of urinary bladder rupture.

1. Introduction

Spontaneous bladder rupture (SBR) is a rare condition, especially after a non-traumatic vaginal delivery. It is defined as rupture of the bladder in which no history of antecedent trauma nor any underlying bladder pathology can be found (1,2).

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Due to the low incidence and the presence of non-specific symptoms, diagnosis was usually delayed with an increased morbidity and mortality.

Therefore, its earlier diagnosis is essential for its correct resolution.

We hope, through a case of a spontaneous bladder rupture occurring 7 days after an assisted vaginal delivery in a multiparous patient with an unscarred uterus in the gynecology obstetrics department of the Ibn Rochd hospital of Casablanca, to contribute to the study of this rare complication. This work has been reported with respect to the SCARE 2020 criteria (3).

2. Observation

A 34 years old female patient, with no particular pathological history, 4th gestation 4th pare, mother of 4 live children delivered by vaginal route, presented to the emergency room 7 days after a vaginal delivery in our institution, with an acute abdomen and anuria.

The baby’s birth weight was 3550 g. The delivery was described to be uneventful and labour was not prolonged. The patient benefited from a bladder catheterization during labor because she could not empty her bladder. The immediate postpartum period was unremarkable. After 24 h she was discharged home.

On admission, her blood pressure was 100/60 with 110 pulse rate and low grade fever. The abdominal examination objectified a distended abdomen, with generalized defense.

Laboratory tests revealed elevated white blood cells (WBC) to 14,540 elements/dl and normal hemoglobin. Although, the urea and serum creatinine values (2.13 g/dL and 144 mg/dL, respectively) were...
Pelvic ultrasound showed a large peritoneal effusion detaching the liver with infiltration of the peritoneal fat.

Abdominopelvic CT scan with contrast injection showed a peritoneal effusion. An intraperitoneal rupture of the bladder dome was detected, showing extravasation of contrast into the peritoneal cavity (Figs. 1, 2).

Laparotomy was therefore indicated under general anesthesia and in dorsal decubitus, about 6 L of serous fluid was suctioned.

There was intraperitoneal rupture of the bladder, about 4 cm laceration in dome of the bladder (Fig. 3) Bladder was repaired in two layers with Vicryl 0, the seal was assured. A silicon catheter with irrigation system was put in place.

The patient made a satisfactory progress, with normalization of blood test parameters, and was discharged five days after surgery. The urinary catheter was removed twenty days after operation.

3. Discussion

SBR is usually due to bladder disease, history of recent trauma to pelvic area, in the setting of malignant disease, acute or chronic urinary distension, anatomical outflow obstructions, instrumentation, chronic infective diseases, after radiotherapy, necrotizing cystitis, or a combination of these (4).

SBR following vaginal delivery is an extremely rare condition (5). It is considered a rare emergency and has significant morbidity and mortality (6).

Few cases of SBR associated with pregnancy have been reported and most are related to a dystocic delivery or a previous cesarean birth. Kibel in 1995 published the first case report about intraperitoneal bladder rupture following a normal vaginal delivery (2).

Its diagnosis presents a challenge for clinicians since this entity resembles other conditions that also cause acute abdomen.

However, the clinician should be alerted to abdominal pain, anuria or macro- or microscopic hematuria and alteration of the creatinine level, and bladder rupture should be considered as a possible diagnosis (7,4,8).

Risk factors for bladder perforation in healthy parturient women are: previous cesarean section, bladder distension and its compression during fetal head engagement and vacuum/forceps-assisted vaginal deliveries. Postpartum risk factor for bladder injury is bladder atony followed by bladder distension and retention of urine especially if catheterization was performed (8).

In our case report, we believe that the bladder rupture was explained by pushing maneuvers in a parturient with a full bladder because, the rupture was located in the thinnest area of the bladder, the bladder dome.

We therefore recommend that the bladder be catheterized or drained before labour.

Intraperitoneal bladder rupture causes an absorption of urine from the peritoneal cavity, resulting in elevated creatinine levels. Also, potassium concentrations increase, while sodium concentration decrease (5).

Currently, CT scan with late films is the examination of choice in case of suspected bladder rupture. Cystoscopy can be helpful to objectivate bladder perforation and make decision in management when there is no peritonitis (9,10).

The diagnosis of certainty is peroperative.

Operative treatment consists of urine removal from the peritoneal cavity, suturing the rupture and instituting good vesicle drainage. Early diagnosis and prompt surgical treatment decreases the morbidity and mortality associated with this condition (11,12).

After surgery, it is recommended that a bladder catheter be placed for two weeks to allow for the proper healing of the bladder tissues.

4. Conclusion

SBR is a rare and life-threatening condition in post-partum. Acute
abdomen associated to anuria or dysuria with elevated serum creatinine should be suspicious of urinary bladder rupture.

Provenance and peer review

Not commissioned, externally peer-reviewed.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images.

Ethical approval

I declare on my honor that the ethical approval has been exempted by my establishment.

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Dr. Ouafidi Btissam: Corresponding author, writing the paper.

Declaration of competing interest

The authors declare having no conflicts of interest for this article.

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