

CASE REPORT

## Spontaneous Life-Threatening Urinary Bladder Hemorrhage in Pregnancy

Duhan Nirmala · Kadian Yogender S. ·  
Sirohiwal Daya · Pradeep Kajal · Nidhi Rajotia

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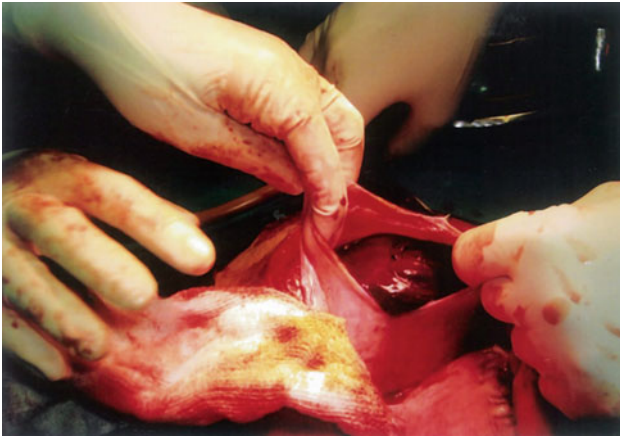
A 20 year old gravida 3, para 2 woman was referred from a peripheral hospital with a provisional diagnosis of rupture uterus at 37 weeks pregnancy. She complained of frank hematuria for last 5 days and there was no history of any recent trauma, intercourse or vaginal bleed. Her first pregnancy had been uneventful but during the second pregnancy, there was history of hematuria 2 days prior to the vaginal delivery of a fresh still born baby boy at 7 months of gestation. The hematuria then had subsided after 5 days of delivery with conservative management. On examination, she was very pale, anxious with a pulse rate of 108 beats/minute and a blood pressure of 80/50 mmHg. Uterus was enlarged to 36 weeks, relaxed, non tender with an oblique lie and fetal heart rate of 168 beats/minute. There was apparent fullness in the suprapubic area which was dull on percussion, suggestive of full bladder. Per urethral catheter drained only 10 ml of frank dark red

blood and no urine. Per vaginal examination revealed normal vagina, a 4 cm long, posterior and closed cervix while the firm lower abdominal mass could also be felt through anterior and lateral fornices. She had hemoglobin of 5 gm/dl, a platelet count of 200,000/dl, blood urea of 22 mg/dl, normal coagulogram and serum electrolytes.

Ultrasonography revealed an obliquely presenting healthy fetus of 36 weeks maturity and a hypoechoic mass of 120 × 80 mm size anterior to the cervix inside the urinary bladder. Both kidneys were normal, with no evidence of hydronephrosis or hydronephrosis. No free fluid was present in the peritoneal cavity. Surgical consultation was sought and the possibility of extraperitoneal rupture of urinary bladder was kept. Due to hemodynamic instability the woman was taken up for exploratory laparotomy after resuscitation. In view of the malpresentation in this term healthy pregnancy, a cesarean section was also planned in the same sitting. On opening the parietal peritoneum in upper part of a vertical incision, the urinary bladder was found distended and of firm consistency, reaching 8 cm above the symphysis pubis, thus leaving no space to access the lower uterine segment. Hence, a classical cesarean section was done to deliver a healthy baby girl weighing 2.5 kg. Afterwards, the bladder dome was bivalved to view a blood clot of 15 × 15 cm size filling the cavity (Fig. 1). After evacuating this large clot weighing 1.2 kg, the bladder walls appeared smooth with no recognizable bleeding site. The bladder was closed in 2 layers over a suprapubic catheter and a retropubic drain was inserted.

Duhan N. (✉), Professor · Sirohiwal D.,  
Associate Professor · Nidhi R., MD student  
Department of Obstetrics and Gynecology, Pt. B.D. Sharma Post  
Graduate Institute of Medical Sciences, 6/9J, Medical Campus,  
Rohtak 124001, Haryana, India  
e-mail: nkadian@rediffmail.com

Kadian Y. S., Professor · Pradeep K., Senior Resident  
Department of General Surgery, Pt. B.D. Sharma Post Graduate  
Institute of Medical Sciences, 6/9J, Medical Campus, Rohtak 124001,  
Haryana, India



**Fig. 1** Intraoperative picture showing the hematoma in the bivalved urinary bladder, with the post-cesarean uterus at the back

The woman and the baby had an uneventful postoperative course.

## Discussion

Bladder injuries, constituting less than 2% of abdominal injuries requiring surgery, occur most often due to blunt or penetrating trauma [1]. Such rarity owes itself to the protected position of the bladder deep in the bony pelvis. Among bladder injuries, around 17% are extraperitoneal, 8% are intraperitoneal, 2% are of both types and the remaining 73% are contusions [2]. Bladder trauma in context of pregnancy may result from ischemic damage during prolonged labor or a difficult forceps delivery or may be a consequence of direct laceration at cesarean section [3]. Spontaneous or idiopathic bladder injuries occur in less than 1% of all cases and only a few cases have been reported after labor and none during the antenatal period [4]. In pregnancy, the raised estrogens cause marked hyperaemia, vasodilatation and increased tortuosity of the blood vessels of the genitourinary system. Moreover, the gravid uterus, as it grows, mechanically lifts the bladder into the abdomen and more anteriorly thus making it more susceptible to injury, either spontaneous or inflicted. Although no typical history of significant trauma was present in our case, unnoticed trivial trauma to a full bladder could result in a similar presentation and can, albeit

rarely, result in hypovolaemic shock as occurred in this one. Preexisting anemia can cause clinical deterioration even in the event of little hemorrhage. Though the presence of gross hematuria in a previous pregnancy in this case may again represent the endocrinal vascular effects on bladder mucosa, but the role of unnoticed minor trauma cannot be ruled out since the pregnancy then ended with preterm birth of a fresh still born soon after.

Management of bladder trauma during pregnancy would depend on the site and extent of injury and on the hemodynamic condition of the woman. Though ascending cystography is considered the investigation of choice for establishing the type of bladder rupture in stable non-pregnant cases, contrast studies are avoided during pregnancy for fear of fetal risk. Bladder contusions and most extraperitoneal ruptures can usually be managed conservatively with continuous bladder drainage for 7–10 days [5]. Most intraperitoneal and extensive extraperitoneal ruptures need surgical repair [5]. In the face of cardiovascular instability as a result of hemorrhage, as occurred in the present case, immediate resort to laparotomy after resuscitation is vital for salvaging maternal and fetal life [1].

Even though no history of trauma may be apparent, bladder trauma should be suspected in cases of unexplained hematuria during pregnancy. It can usually be managed conservatively in most cases. However, cautious monitoring is important for timely recognition of deterioration and surgical management of the few cases that require it as a life saving measure. It is also suggested that a high index of suspicion and multidisciplinary approach should be adopted to salvage such rare life threatening situations.

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