Spontaneous rupture of urinary bladder in puerperium

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ABSTRACT

We report a case of spontaneous rupture of urinary bladder during normal vaginal delivery in a primigravida, who presented with huge ascites, oliguria and renal failure 3 days after delivery. Abdominal paracentesis and CT cystography diagnosed intraperitoneal rupture of urinary bladder. The rent was repaired in layers. In the follow-up cystoscopy and the cystography showed the lesion healed completely. This is totally preventable condition if adequate precaution is taken in the form of evacuating the bladder before the patient goes to second stage of labour.

Key words: Bladder rupture, urinary ascites, vaginal delivery

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Spontaneous rupture of urinary bladder in the puerperium is extremely rare and only few cases are reported in the literature. This occurs if bladder is not evacuated before the patient proceeds to the second stage of labour.

CASE REPORT

A 23-year-old woman (primigravida) presented with distended abdomen, vomiting and oliguria for 3 days after a normal vaginal delivery. This absolutely healthy woman (G1P1) neither had any history of previous abdominal surgery, D/C, history of radiation for any malignant disease nor Crohn’s disease, neurogenic bladder. Duration of the first stage of labour was 10 h and second stage of labour was less than 1 h and she was discharged on the same day in a stable condition.

On admission, her vitals were stable. Pervaginal examination showed a closed os with nonoffensive lochia. Her urine output was less than 50 ml/day. Urinalysis showed microhaematuria with plenty of pus cells. Her blood urea was 86 mg/dl and serum creatinine 3.4 mg/dl with a serum sodium 120 meq/l and potassium 5.9 meq/l. Her abdominal ultrasonography showed bilateral mild hydronephrosis with huge intraperitoneal fluid. Due to respiratory embarrassment slow drainage of 3 l straw colored peritoneal fluid was done. Creatinine content of the drained fluid was 10.6 mg/dl. A CT scan of the abdomen did not reveal any abnormality but a CT cystography showed contrast leaking into the peritoneal cavity (Figure 1) leading to the diagnosis of intraperitoneal rupture of urinary bladder.

Figure 1: CT cystography showing contrast leaking into the peritoneal cavity
On exploration of abdomen, a loop of ileum was found to be adherent on the superior surface of the bladder behind that a transverse 4 cm rent was found on the dome of the urinary bladder. It was repaired in two layers after freshening the edges. Bladder was drained with a urethral Foley catheter and a suprapubic cystotomy tube through a separate site away from the injury and abdomen closed leaving an intraperitoneal drain.

The per urethral catheter was removed after 5 days and the suprapubic tube removed after 2 weeks when there was no leak on cystography. Histopathology of the resected bladder margin showed necrotic tissue only. Follow-up cystoscopy after 4 weeks showed a nicely healed urinary bladder.

**DISCUSSION**

Rupture of urinary bladder without a history of recent trauma or instrumentation is rare.[1–3] The term spontaneous bladder rupture is applied to those cases in which there is neither a history of antecedent trauma nor any underlying bladder pathology.[3] Bladder disease or infravesical obstruction, coupled with a sudden increase in the intravesical pressure during second stage usually account for the rupture.[2–4] In this case mechanism of or rupture is due to compression on full bladder by the fetus head during delivery. Sudden onset of abdominal pain, coincidental with bloody urine, generalized peritonitis and abnormal renal biochemistry leads to a high index of suspicion of such cases. But the pain in the second and third stages of labour is so severe that the pain due to rupture cannot be felt separately. So patient may present late with features of renal failure and urinary ascites. In the postpartum patient with an uneventful labour presenting with ascites and azotemia intraperitoneal rupture of the bladder should be the first suspect. A clinical suspicion and retrograde cystography, CT cystography or cystoscopy confirm the diagnosis.[1–3] Early operative intervention with closure of the bladder rent and prolonged bladder drainage using both suprapublic and urethral catheter to minimize the urine leak reduces the morbidity attributed to this condition. The most important thing to remember is that this condition is a totally preventable condition provided the bladder is empty during the second stage of the labour. So emptying of the bladder should be done routinely in each patient before the patient proceeds to second stage of the disease.

**REFERENCES**