

# Urethral Diverticulum Stone Causing Obstructed Labor

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## ABSTRACT

Obstructed labor though being a well-known entity, cephalopelvic disproportion is the most common cause causing labor dystocia. Urethral diverticulum stone is a rare cause of obstructed labor. We report a case of urethral diverticulum stone obstructing the labor in a primigravida where cause of obstruction was confirmed by sonographic modality.

**Keywords:** Cesarean section, Fetal distress, Labor, Urinary bladder.

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## BACKGROUND

Giant urethral calculus (more than 100 g) is a very rare cause of obstructed labor. Out of many causes of obstructed labor till date, only a few cases have been reported in the literature, which are due to bladder calculus. The incidence is 1 in 2,000–3,300 pregnancies.<sup>1</sup> The presence of calculus in urinary bladder increases the risk of complications like infection, premature delivery, vesicovaginal fistula (VVF), and rarely uterine rupture; thus, prompt diagnosis and timely interventions are very important to prevent the grave complications like maternal and fetal mortality and morbidity. Here, we report a case of bladder neck stone causing obstructed labor in a primigravida.

## CASE DESCRIPTION

A 22-year-old woman primigravida was admitted with labor pains at 39 weeks and had a history of trial of labor for more than 9 hours by Dai. She was a unbooked patient with no antenatal clinic (ANC) checkups and no ultrasonography done anywhere during her pregnancy. Her whole antenatal and periconceptional period was uneventful with no complaints of recurrent urinary tract infection (UTI), dysuria, increased frequency of micturition, and pain lower abdomen. On the day of admission, the patient was exhausted and dehydrated. Her vitals were pulse rate (PR) 110/minute, respiratory rate (RR) 24/minute, and temperature 100-degree fh. Per-abdominal examination revealed a full-term uterus with longitudinal lie and cephalic presentation. Her fetal heart was 110 per minute, and post-uterine contraction was 84 bpm. The vaginal examination revealed dry hot vagina; cervix was fully dilated with ruptured membranes and station of head was –3; liquor was meconium-stained; fetal head was tightly lodged in the pelvis; caput and mounding were present. A hard-immobile mass of approximately 6 × 5 cm was palpable along the anterior vaginal wall preventing the descent of head. The patient was catheterized and after taking informed consent was immediately shifted for emergency lower segment cesarean section. A female baby of weight 2.6 kg was delivered. On second postoperative day, the patient developed leakage of urine by the side of catheter, which was controlled by 18f Foley's. On 12th postoperative day, the patient developed frank hematuria. Ultrasonography (USG) kidney ureter bladder (KUB) and X-ray pelvis were performed revealing a stone at the level of bladder neck of approximately 6 × 5 cm.

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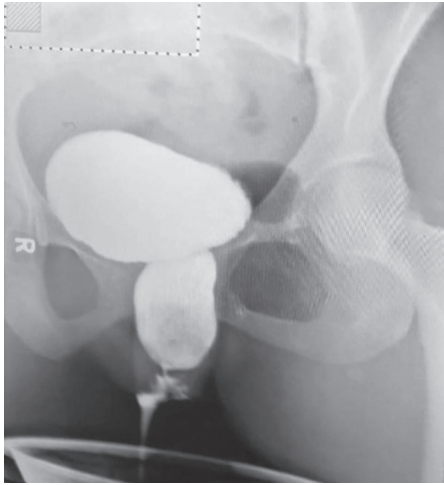
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Urethral diverticulum was suspected, which was confirmed by cystoscopy. Urine culture showed *Klebsiella* for which patient was put on antibiotics and planned for cystolithotomy. Cystolithotomy was done with the removal of stone around 6 × 5 cm and 100 g in weight, and urethral diverticulum was resected. The bladder was repaired in two layers. Postoperative period was uneventful and Foley's catheterization was done for 14 days. The patient was discharged on 15th day.

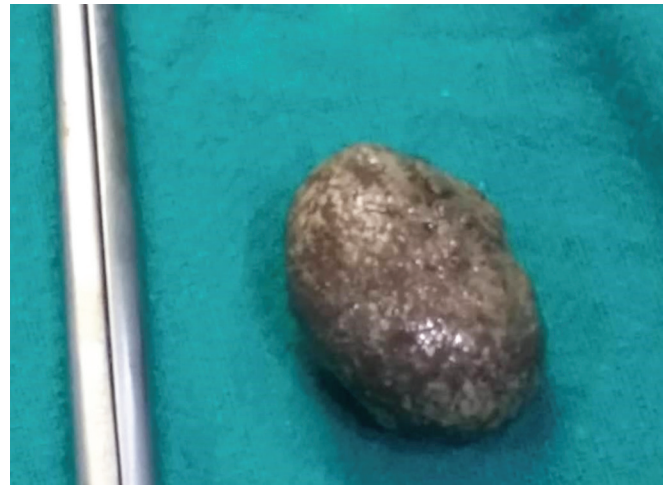
## DISCUSSION

Out of the various causes of obstructed labor, vesical calculus is a very rare cause. The improving nutrition and infection control have been shown a decreased incidence of bladder stone since 19th century. About 5% of all urinary stones are found in urinary bladder, out of which 5% occur in women.<sup>1</sup> The reason for the stasis and development of calculus is divided into two headings: Congenital causes and acquired diverticulum. The symptoms specific to pregnancy in case of a bladder stone are infections, abortions, premature delivery, urinary fistula, and rarely dystocia of labor (Fig. 1). Bladder stone is usually associated with irritating symptoms such as dysuria, pain, incontinence, urinary urgency, and frequency. However, in most of the cases, it remains asymptomatic if not obstructing the bladder inflow or outflow and becomes several centimeters in size, which can be found incidentally.<sup>2</sup> Vesical calculus in pregnancy is found to be associated with several episodes of urinary tract infections. If pregnancy is persistently associated with pyelonephritis despite appropriate and adequate antibiotic therapy, we should prompt the search for obstruction and stone. In this case, the patient did



**Fig. 1:** Micturating cystourethrography (MCU) showing urethral diverticulum stone

not have any urinary complaints; neither an ultrasonography was done; and hence, the condition was not diagnosed antenatally. In the second half of pregnancy due to interference of the fetal head, USG can miss bladder stone. The management of bladder stone depends on the duration of gestational age. Although transvesical litholopaxy is the preferred choice of treatment, open suprapubic cystotomy is indicated for the removal of large vesical calculus. If it is asymptomatic and diagnosed during antenatal period, then cystolithotomy is referred. Cesarean section with cystolithotomy is the procedure of choice. However, when it is diagnosed in early labor before the engagement of fetal head, vaginal delivery can be possible if the stone is pushed above the fetal head. If the stone is neglected, then it can be trapped between the symphysis pubis and fetal head causing arrest of the fetal descent and dystocia of labor (Fig. 2). In our case, cesarean section and cystolithotomy were done as the patient had presented with prolonged labor and the stone was impacted below the fetal head, resulting in obstruction.



**Fig. 2:** Stone

## CONCLUSION

Urethrovvesical stone is a rare cause of obstructed labor; early diagnosis and prompt treatment is necessary to prevent its grave complications; and this can be made out through a detailed history, physical examination, and routine antenatal ultrasonography. If a large vesicular stone is diagnosed during antenatal period, then cystolithotomy should be done to avoid cesarean section. Hence, it is important for us to evaluate all pregnant women coming with urinary symptoms.

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