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Case Report

Obstetrics and Gynaecology Section

Navigating Postcaesarean Challenges: A Case Report on Bladder Flap Haematoma with Haematuria

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ABSTRACT

A less common puerperal complication following a caesarean section is a bladder flap haematoma, characterised by the accumulation of blood in the vesico-uterine space. A young, unregistered primigravida was referred from a peripheral facility with preeclampsia and obstructed labour. Signs of obstructed labour were observed both before and intraoperatively, like dehydration, foetal distress, a stretched lower uterine segment, and oedematous bladder. The uterus was sutured in two layers to control bleeding, and the patient was closely monitored postoperatively. The diagnosis of haematoma was made by the increasing height of the uterus and a suprapubic bulge anterior to the uterus, along with postoperative haematuria. Imaging with ultrasonography and Computed Tomography (CT) helped to decide the management. The patient improved after exploratory laparotomy with haematoma drainage. No bladder injury was found during the cystoscopy. Early diagnosis and treatment were important in preventing complications such as haemodynamic instability, abscess formation, and sepsis. Authors present their experience in this patient with postcaesarean vesico-uterine haematoma, with frank haematuria, without an obvious bladder injury, who required re-exploration. The clinical presentation, course, and sonographic findings of this patient form the basis of this report.

Keywords: Cystoscopy, Exploratory laparotomy, Sepsis, Vesico-uterine space

CASE REPORT

A 28-year-old primigravida at 39 weeks four days with preeclampsia and obstructed labour was referred from a primary healthcare centre at midnight. She showed signs of distress like tachycardia, high blood pressure (150/100 mmHg), fever (99°F), and dehydration. Moderate uterine contractions with stretching of the lower uterine segment were noted, along with foetal bradycardia. On Per Vaginum (PV) examination, the cervix was oedematous, and grade 2 caput and moulding were present at 0 station. After catheterising the bladder and draining 100 cc of concentrated urine, an emergency caesarean section was performed under spinal anaesthesia. A 3.5 kg male baby was delivered, requiring neonatal resuscitation. During the procedure, an oedematous bladder and uterovesical fold of peritoneum were observed. The uterovesical peritoneal fold was incised to separate the bladder. There was a major bleeding vessel in the upper flap of the uterine incision on the left-side, which was separately secured. The uterus was closed in double layers, the first interlocking continuously, and in the second layer, the visceral peritoneum was also approximated. After confirming the mop counts, the abdomen was closed. About 1000 cc of blood loss was noted, along with haematuria in the urobag, which was likely due to obstructed labour.

After surgery, the patient was closely monitored. After two hours, a suprapubic bulge was noticed, and the uterine size increased to 26 weeks gestation [Table/Fig-1]. The uterus was retracted well. Bleeding was average. The patient had tachycardia (100-110 per minute) and blood pressure of 130/100 mmHg. Bladder drainage was good with an hourly urine output of 40-50 mL, but the urine was haemorrhagic [Table/Fig-2]. The patient was provisionally diagnosed with a postcaesarean haematoma and was transfused one packed red cell and two units of Fresh Frozen Plasma (FFP). Conservative management was chosen due to no apparent increase in the haematoma size or vaginal

[Table/Fig-1]: Clinical image showing suprapubic bulge of the haematoma (blue arrow) and increased fundal height (orange arrow).

[Table/Fig-2]: Frank drainage of haematuria.

bleeding in the following four hours. The patient's coagulation profile was normal. She received broad-spectrum antibiotics and antihypertensives. Surgeons' intervention was sought due to persistent haematuria, recommending bladder irrigation with three litres of normal saline through a three-way Foley catheter.

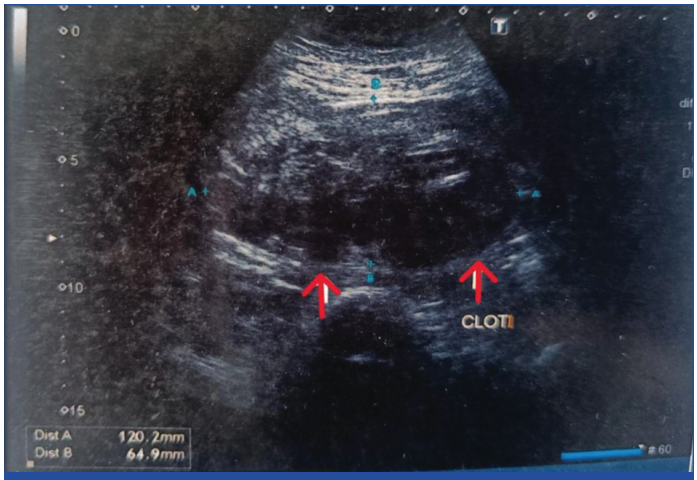
Abdominal and pelvic ultrasound was performed with a distended bladder (Foley catheter clamped temporarily), revealing a 100 cc collection between the anterior uterine wall and the bladder [Table/Fig-3]. The incision's acoustic shadow was visible in the lower uterine segment, and the bladder had intact margins with no hydronephrosis or free fluid elsewhere. Given the patient's stable condition, conservative management was continued.

[Table/Fig-3]: First ultrasound image. The white arrow indicates a haematoma collection of 100 cc.

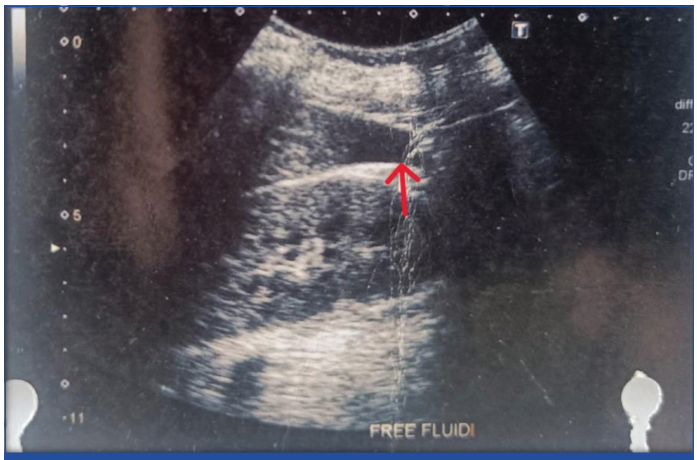
On the second day after the operation, the patient experienced a sudden episode of heavy vaginal bleeding, approximately 200 cc. During a PV examination, a tense bulge was detected in the anterior vaginal wall. Computed Tomography with Intravenous Pyelogram (CT-IVP) was done [Table/Fig-4]. It showed arterial stage dye in haematoma suggesting an arterial feeder. Haematoma size had increased to approximately 350 cc and there was an absence of dye entry in the right ureter. Ultrasonography was also repeated which showed an increase in the collection in the vesico-uterine fold [Table/Fig-5], along with fluid in the Morrison's pouch [Table/Fig-6] and paracolic gutters [Table/Fig-7].

[Table/Fig-4]: CT-IVP showed extravasation of dye during the arterial phase of contrast, suggestive of a feeder to the haematoma.

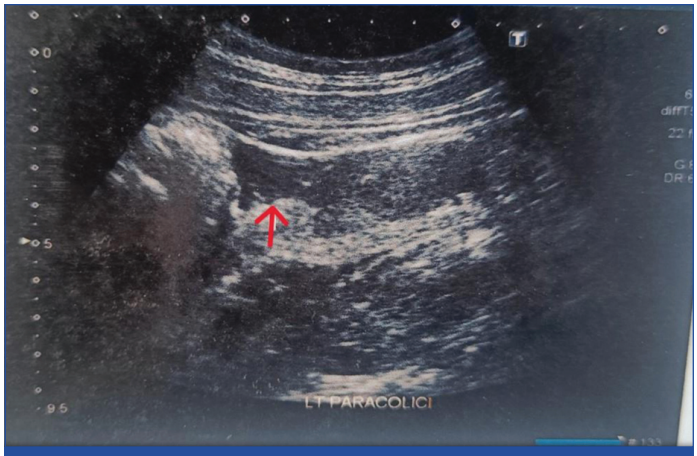
A decision was taken to perform exploratory laparotomy with cystoscopy. During cystoscopy, the posterior bladder wall appeared oedematous with a few oozing capillaries, but no bladder injury was found [Table/Fig-8]. During laparotomy, a large haematoma in the uterovesical plane extending to the broad ligaments and retroperitoneum was identified [Table/Fig-9]. The haematoma was drained, and a bleeder near the left uterine angle was secured. The bladder was distended with methylene blue without any leaks, indicating no obvious injury. Right ureteric Double-J (DJ) stenting was performed due to kinking and tortuosity in the right ureter. The patient received two units of packed cells intraoperatively.



[Table/Fig-5]: Second ultrasound image. Red arrows show an increase in the size of the haematoma.

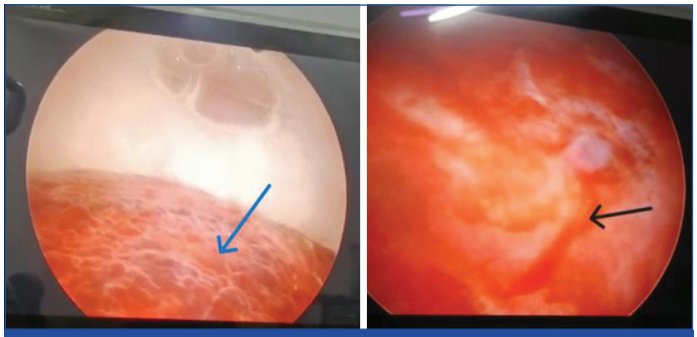


[Table/Fig-6]: Red arrow showing fluid in the Morrison's pouch.

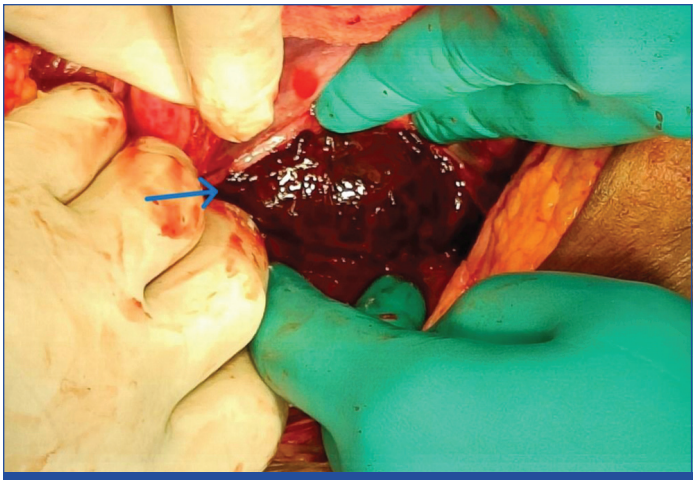


[Table/Fig-7]: Fluid in the paracolic gutter (Red arrow).

Postoperatively, the patient remained stable, and urine cleared on the second day after the laparotomy. A drain was placed and removed on the sixth day. The uterus began to involute,



[Table/Fig-8]: Cystoscopy shows intact bladder with highly oedematous posterior wall (blue arrow) and oozing capillaries (black arrow).



[Table/Fig-9]: Bladder flap haematoma (blue arrow).

and the patient's condition improved. The Foley catheter was removed on the 15th postoperative day, and the patient could urinate without difficulty during follow-up visits. The patient's consent has been taken for publishing the clinical material for educational purpose.

DISCUSSION

With the rise in caesarean section rate throughout the world, one needs to be aware of the many complications associated with it [1]. Traditionally, a lower uterine segment transverse incision (Kerr's incision) is taken after separating the uterovesical fold of peritoneum and pushing the bladder inferiorly [2]. If there is bleeding in this space, it may lead to haematoma formation between the bladder and the lower uterine segment. Vesico-uterine haematoma, also known as bladder flap haematoma, is a rare complication associated with the traditional method of closure of the uterovesical fold of peritoneum [3]. Radiological imaging can be used to diagnose and monitor the size of the haematoma and therefore help in decision-making regarding haematoma drainage or conservative management [4].

Bladder flap haematoma is a rare complication of caesarean section when the uterovesical fold of peritoneum is closed, and a haematoma is formed in this layer. Studies have compared the formation and non formation of the bladder flap during caesarean section and have found short-term benefits in the latter [3,5,6]. However, in this case, as caesarean section was done for obstructed labour, it was necessary to create the bladder flap to prevent injury to the oedematous bladder. Malvasi A et al., have found that closure of the visceral peritoneum during caesarean section is associated with increased chances of haematomas [6]. They also suggested that in caesarean section done for labour dystocia, closure of the uterovesical fold should be avoided [6]. Many studies have advocated for non formation of the bladder fold of peritoneum during caesarean section and mass closure [3,7].

In the present case, the provisional diagnosis of a bladder flap haematoma was based on routine postoperative monitoring of the fundal height, which showed an increase, and the appearance of a suprapubic bulge. These clinical findings were subsequently confirmed through ultrasonography. Usually, bladder flap haematomas are identified on ultrasonography [8]. In the present case, authors also did a CT-IVP for this patient, as she had persistent haematuria. Studies have shown that CT was a better modality, especially to look for any bleeder in cases of haematoma [4,9].

Bladder flap haematomas can manifest in various ways, such as postpartum haemorrhage, abdominal distension, fever, and less commonly, haematuria, as observed in this case and reported by Ilhan G et al., [10]. The likely reason for the absence of contrast in the right ureter could be attributed to either ureteral spasm or kinking caused by the expanding retroperitoneal haematoma in the present case. Gross hydronephrosis has been reported following bladder flap haematoma [11].

There are no clear guidelines for the management of bladder flap haematoma. Usually, haematomas <5 cm and haemodynamically stable patients are managed conservatively with antibiotics [10]. However, if the patient's condition deteriorates, relaparotomy is indicated and may lead to hysterectomy as well [11,12]. The role of laparoscopy has also been considered in the management of bladder flap haematomas [13]. Routine closure of both visceral and parietal peritoneum is not advocated [5]. Malvasi A et al., have questioned the need for creating the bladder flap at the time of caesarean section and suggested a mass closure method of suturing the uterine incision [7].

CONCLUSION(S)

Healthcare providers should be aware of bladder flap haematoma as a potential complication of caesarean sections. Effective management of this complication often necessitates a collaborative effort among obstetricians, radiologists, urologists, and anaesthesiologists. With prompt and proper care, many bladder flap haematomas can be resolved without lasting issues. However, whether managed conservatively or surgically, bladder flap haematomas can increase patient morbidity, emphasising the need for standardised management protocols supported by additional research.

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