

## A Rare Post-Cesarean Encounter: Bladder Flap Hematoma

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### ABSTRACT

**Background:** Bladder-flap hematoma (BFH) is a rare postoperative complication of cesarean section, occurring in approximately 0.5–1% of cases. It results from bleeding within the vesicouterine space due to inadequate hemostasis or vessel injury during uterine closure. Although cesarean section is a lifesaving procedure, the global rate has risen to nearly 21% of all births and is projected to reach 29% by 2030, thereby increasing the likelihood of encountering such complications.

**Case Presentation:** A 25-year-old woman (G2P1L1) at 38 weeks and 4 days of gestation with a previous lower segment cesarean section underwent an emergency cesarean for fetal distress. Intraoperatively, a bleeding vessel near the uterine incision was ligated. Within hours, she developed hematuria while remaining hemodynamically stable. Ultrasonography and contrast-enhanced CT revealed a 130–135 mL collection between the bladder dome and the anterior uterine wall, consistent with a bladder-flap hematoma. Following multidisciplinary evaluation, conservative management with ultrasound-guided pigtail drainage was performed, resulting in clinical stability and near-complete resolution by postoperative day 16.

**Conclusion:** This case underscores that even though bladder-flap hematoma is rare, its presentation can closely resemble major surgical complications. Hematuria should prompt immediate evaluation to avoid misdiagnosis. Early imaging and multidisciplinary management are crucial for accurate diagnosis, optimal recovery, and prevention of unnecessary surgical intervention.

**KEYWORDS:** Bladder-flap hematoma, Cesarean section, Hematuria, Vesicouterine space, Postoperative complication.

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### INTRODUCTION

Cesarean section is among the most frequently performed obstetric operations globally and is generally regarded as a safe surgical procedure. Nevertheless, it carries potential risks such as hemorrhage, infection, injury to surrounding organs, and, less commonly, the development of postoperative hematomas<sup>[1]</sup>. One rare but significant complication is the bladder flap hematoma, which forms in the potential space between the lower uterine segment and the urinary bladder<sup>[1,2]</sup>.

During a cesarean section, a bladder flap is created by incising and reflecting the uterovesical peritoneum to expose the lower uterine segment for the uterine incision. A hematoma may form in this area if bleeding from small vessels—commonly the uterovesical or myometrial branches—is not adequately controlled, or if the uterine incision extends into adjacent tissues<sup>[2]</sup>. Although the reported incidence of bladder flap hematoma is low, it is likely underdiagnosed due to its subtle or nonspecific clinical manifestations<sup>[2]</sup>.

Patients typically present in the early postoperative period with symptoms such as lower abdominal pain, suprapubic tenderness, fever, or hematuria. These features can resemble other postoperative complications like wound infection, pelvic abscess, or uterine dehiscence, which can make the diagnosis challenging<sup>[1,2]</sup>. Imaging techniques such as ultrasonography and computed tomography (CT) are essential for confirming the diagnosis and distinguishing it from other pelvic collections<sup>[1]</sup>.

The management approach depends on the hematoma's size and the patient's clinical condition. Small and asymptomatic hematomas can often be treated conservatively with observation and antibiotics, whereas larger or symptomatic ones may necessitate image-guided drainage—most commonly ultrasound-guided pigtail catheter placement<sup>[2]</sup>.

We report a case of bladder flap hematoma that developed after an emergency repeat lower segment cesarean section and was successfully managed with ultrasound-guided pigtail catheter drainage performed under interventional radiologic guidance. This

case underscores the significance of early recognition, accurate imaging, and minimally invasive management in achieving optimal outcomes<sup>[1,2]</sup>.

## CASE PRESENTATION

A 25-year-old woman, gravida 2 para 1 living 1 (G2P1L1), at 38 weeks and 4 days of gestation with a prior lower segment cesarean section (LSCS), presented in active labor and was referred from a primary healthcare center for further management. On admission, she was tachycardic with a pulse rate of 130 beats per minute and blood pressure of 100/60 mmHg. Uterine contractions were moderate in intensity, accompanied by stretching of the lower uterine segment. Fetal bradycardia was noted on auscultation.

Per vaginal examination revealed an edematous cervix with grade 2 caput and molding at 0 station. After catheterization of the urinary bladder, 100 mL of concentrated urine was drained. In view of fetal distress, an emergency cesarean section was performed under spinal anesthesia. A live male neonate weighing 3.0 kg was delivered with good cry and tone.

Intraoperatively, the bladder appeared edematous, and the uterovesical peritoneal fold was thickened. The fold was incised to carefully separate the bladder from the lower uterine segment. A bleeding vessel in the upper flap of the uterine incision on the left side was identified and ligated separately. The uterus was closed in a single layer. Following confirmation of mop and instrument counts, the abdomen was closed. The total intraoperative blood loss was approximately 1000 mL.

In the immediate postoperative period (4–6 hours), hematuria was observed in the Foley catheter bag (Figure 1). The uterus was well contracted, lochial discharge was normal, and the patient remained hemodynamically stable with a pulse rate of 88 beats per minute and blood pressure of 120/70 mmHg. The urine output was adequate (40–50 mL/hour), although it remained hemorrhagic. In view of intraoperative blood loss, the patient received two units of packed red blood cells and four units of fresh frozen plasma. Since there was no increase in abdominal girth or vaginal bleeding, a conservative management approach was adopted. The coagulation profile remained within normal limits, and broad-spectrum antibiotics were administered prophylactically.

On postoperative day (POD) 2, persistent hematuria prompted a urology consultation. Ultrasound of the abdomen and pelvis (with KUB view) performed after temporary clamping of the Foley catheter to distend the bladder revealed a heterogeneous collection measuring approximately 130 mL between the anterior uterine wall and the bladder, suggestive of a bladder flap hematoma (Figure 2).

To exclude any urinary tract injury, a contrast-enhanced CT scan of the abdomen and pelvis was obtained, confirming a well-defined heterogeneous lesion measuring 130–135 mL between the bladder dome and anterior lower uterine segment findings consistent with bladder flap hematoma.

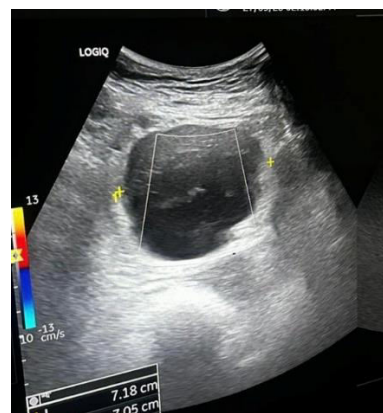
After a multidisciplinary discussion involving obstetrics, urology, and interventional radiology teams, ultrasound-guided drainage was planned. On POD 6, under strict aseptic precautions, a 16F pigtail catheter was inserted by the interventional radiologist, draining 20–25 mL of altered blood. A sterile dressing was applied, and the patient was observed closely.

By the following day, the urine cleared completely, and the patient remained afebrile and hemodynamically stable. Her hemoglobin level was 8.2 g/dL. The Foley catheter was removed on POD 8, and she voided comfortably without difficulty.

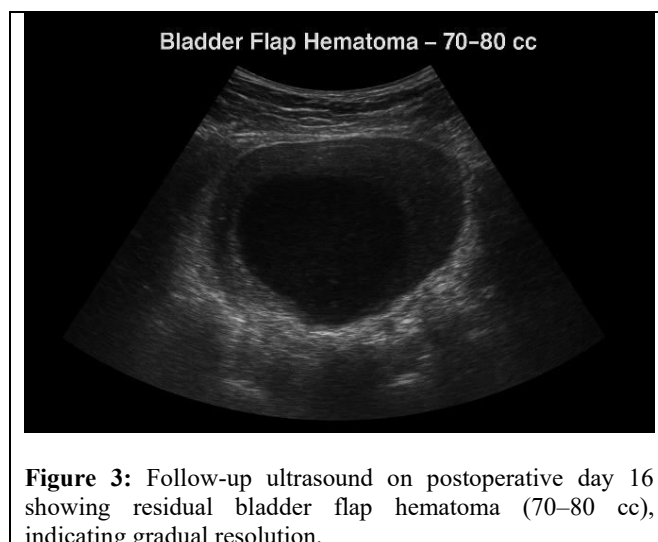
The patient continued to improve and was discharged on oral antibiotics with advice for follow-up. On POD 16, she was asymptomatic and vitally stable, and a repeat ultrasound showed a decrease in hematoma size to approximately 70–80 mL, indicating gradual resolution (Figure 3).



**Figure 1:** Hematuria observed in Foley catheter bag during early postoperative period.



**Figure 2:** Ultrasonographic image showing a heterogeneous collection measuring approximately 130–135 cc, located between the bladder and anterior uterine wall, consistent with **bladder flap hematoma**.



**Figure 3:** Follow-up ultrasound on postoperative day 16 showing residual bladder flap hematoma (70–80 cc), indicating gradual resolution.

## DISCUSSION

Bladder-flap hematoma (BFH) is an uncommon but clinically significant complication of cesarean section, defined as a localized blood collection between the lower uterine segment and the bladder. It occurs due to inadequate hemostasis or trauma to the vesicouterine vessels during surgery. The rising global rate of cesarean deliveries has increased the recognition of such postoperative morbidities [1,2]. Although the true incidence remains low, small hematomas are often underdiagnosed due to nonspecific symptoms and spontaneous resolution.

The development of BFH is closely associated with surgical technique. Closure of the visceral peritoneum has been implicated in higher rates of hematoma formation, as it can trap bleeding within the vesicouterine space, whereas non-closure facilitates natural peritoneal drainage [3,4]. Clinically, patients may present with suprapubic discomfort, low-grade fever, or, as in the present case, hematuria an infrequent but notable feature caused by pressure on the bladder wall. Ilhan et al. (2016) and Singh et al. (2024) both documented similar findings of hematuria without overt bladder injury [5,6].

Radiologic assessment is central to diagnosis. Ultrasonography is typically the first-line investigation, demonstrating a heterogeneous collection between the bladder and anterior uterine wall, while computed tomography provides better delineation of extent and exclusion of urinary tract injury [7,8]. In the current study, imaging confirmed a 130–135 mL well-circumscribed collection in the vesicouterine pouch, with intact bladder and uterus, confirming a contained BFH.

Literature comparison reveals variable presentation and outcome depending on hematoma size and patient stability. Shibu and Varughese (2024) [9] reported a large (13 cm) hematoma that resolved conservatively in a stable patient, while Singh et al. (2024) described a case with frank hematuria and suprapubic bulging requiring surgical evacuation [6]. Lata et al. (2021) demonstrated the feasibility of laparoscopic drainage in organized collections, establishing it as a minimally invasive option [10]. Collectively, these studies highlight that early suspicion and imaging are essential for distinguishing BFH from bladder injury, abscess, or uterine rupture, thereby preventing unnecessary interventions.

The present case adds to the limited pool of literature by emphasizing hematuria as an early diagnostic indicator of BFH in a hemodynamically stable patient following emergency cesarean delivery. Timely imaging confirmation and clinical correlation remain the cornerstone of appropriate diagnosis and prognosis. As cesarean section rates continue to rise globally, awareness of such rare postoperative entities is vital for obstetricians and radiologists.

## CONCLUSION

Bladder-flap hematoma is a rare but significant postoperative complication that can closely resemble more severe conditions such as bladder injury or uterine rupture. The present case emphasizes hematuria as an important early warning sign requiring prompt imaging for confirmation. Early recognition, precise diagnosis, and heightened clinical awareness are crucial to prevent unnecessary surgical intervention and ensure favorable maternal outcomes.

## REFERENCES:

1. WHO (2021) Caesarean section rates continue to rise, amid growing inequalities in access. World Health Organisation.
2. Sandall J, Tribe RM, Avery L, Mola G, Visser GH, Homer CS, Gibbons D, Kelly NM, Kennedy HP, Kidanto H, et al: Short-term and long-term effects of caesarean section on the health of women and children. *Lancet*. 392:1349–1357. 2018. [PubMed/NCBI View Article](#) : [Google Scholar](#).
3. Malvasi A, Tinelli A, Guido M, Zizza A, Farine D, Stark M. Should the visceral peritoneum at the bladder flap closed at cesarean sections? A post-partum sonographic and clinical assessment. *The Journal of Maternal-Fetal & Neonatal Medicine*. 2010;23(7):662-9.

4. Tabasi Z, Mahdian M, Abedzadeh-Kalahroudi M. Closure or non-closure of peritoneum in cesarean section: outcomes of short-term complications. *Archives of trauma research*. 2013;1(4):176.
5. İlhan G, Atmaca FF, Zebitay AG, Gültekin H, Ergin AH, Ohanoğlu K. A case of bladder flap hematoma presenting with hematuria. *IJWHR*. 2016;4(4):205-7.
6. SinGh K, NAYAK VK, Kamdar PP, BARLA J. Navigating Postcaesarean Challenges: A Case Report on Bladder Flap Haematoma with Haematuria. *Journal of Clinical & Diagnostic Research*. 2024;18(8).
7. Rosa F, Perugin G, Schettini D, Romano N, Romeo S, Podestà R, Guastavino A, Casaleggio A, Gandolfo N. Imaging findings of cesarean delivery complications: cesarean scar disease and much more. *Insights into imaging*. 2019;10(1):98.
8. Rodgers SK, Kirby CL, Smith RJ, Horrow MM. Imaging after cesarean delivery: acute and chronic complications. *Radiographics*. 2012;32(6):1693-712.
9. Shibu HA, Varughese AM. Conservative Management of a Large Bladder Flap Hematoma Post Cesarean Section: A Case Report and Mini Review of Literature. *Obstet Gynecol Cases Rev*. 2024;11:252.
10. Lata K, Davis AA, Panwar A, Kriplani I, Kriplani A. Laparoscopic management of post-cesarean uterovesical abscess: A new approach to an old problem. *The Journal of Obstetrics and Gynecology of India*. 2021;71(3):313-7.