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Case Report

Spontaneous hematuria after caesarean section: a case report and review of literature

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ABSTRACT

Hematuria occurring postoperatively is typically associated with urinary tract infection, renal pathology, or surgical trauma. However, delayed-onset hematuria following caesarean section (CS) is uncommon and may point toward less frequently encountered etiologies directly or indirectly related to the surgical procedure. A patient presented with spontaneous gross hematuria on the 29th day after an uncomplicated CS. She had no fever, flank pain, or urinary symptoms. Preliminary investigations ruled out infection and renal pathology. Advanced imaging and cystoscopic evaluation were conducted to explore structural or vascular causes. Potential etiologies identified included retroperitoneal hematoma, vesicouterine fistula, and occult bladder injury. Diagnostic evaluation was challenged by the delayed timeline and non-specific presentation. Imaging techniques such as CT/MRI, cystoscopy, and dye tests proved critical in delineating the source. Spontaneous hematuria in the late postoperative period following CS is rare but warrants systematic evaluation to identify overlooked surgical or anatomical causes. Early diagnosis and targeted intervention are crucial to prevent long-term morbidity.

Keywords: Hematuria, Caesarean section, Cystoscopy, Spontaneous onset

INTRODUCTION

Spontaneous hematuria, defined as the presence of blood in the urine without any identifiable cause, is an uncommon but clinically significant complication following a CS.¹

Although hematuria is often associated with urinary tract infections, trauma, or renal pathology, its occurrence in the postoperative period can indicate unique etiologies related to surgical intervention.

This case report highlights a similar situation in which the patient had spontaneous hematuria in the post-partum period. This review aims to explore the potential causes, diagnostic challenges, and management strategies for spontaneous hematuria following a CS.

CASE REPORT

A 36-year-old para 1 living 1 with history of lower segment CS (LSCS) done 30 days back was referred to the department of obstetrics in view of anaemia and hematuria.

LSCS was done in view of non-progress of labour at a sub-urban health centre, and patient was discharged on 5th post operative day with no complaints. On the 15th post operative day the patient developed pain abdomen and abdominal distension. On examination, patient appeared pale and hemoglobin level at that time was 6 gm/dl and total leukocyte count was 23,500/microlitre.

From the local hospital patient was referred to another hospital where abdomen and pelvic ultrasonography was

done which revealed organized collection in the left adnexa extending into the pouch of Douglas (10×6 cm), mild ascites and mild pleural effusion. Patient was managed conservatively with injection Piperacillin and tazobactam, 2 pints of packed cell transfusion and 18 pints of fresh frozen plasma. On the 29th post operative day patient complained of bleeding per vaginum and hematuria. She was catheterized and 400ml of frank blood came out from the bladder. She was referred to our institute in view of dropping hemoglobin, frank hematuria and non-improvement of symptoms.

On abdominal examination, abdomen was moderately distended. Per speculum examination revealed pulled up cervix and clots coming out through cervix. On per vaginal examination, there was fornicial tenderness and a boggy swelling could be appreciated in the pouch of Douglas. Repeat hemogram revealed hemoglobin level to be 4.9 gm/dl. Coagulation profile was normal. Serum LDH was 553 units/L (increased). Contrast enhanced computed tomography of abdomen and pelvis revealed septated collection of size 14×10×5 cm in the peritoneal cavity suggestive of haemoperitoneum, blood inside the bladder, minimal bilateral pleural effusion, and mild right sided hydroureteronephrosis and multiple intrauterine myomas, largest measuring 2.7×1.5 cm. There was also presence of right uterine artery pseudo aneurysm.



Figure 1: CT scan image showing blood inside bladder.

Patient was planned for right uterine artery pseudo aneurysm embolization to stop further bleeding. Diagnostic cystoscopy and laparoscopy were planned. On cystoscopy, a large sized hematoma was diagnosed inside the bladder. Around 500 ml of organized hematoma was drained from the bladder using Toomey's syringe. Right sided ureteroscopy was done and some old clots were seen inside it. No definite site of injury was identified. Right sided DJ stenting was done. On diagnostic laparoscopy, around 1.5 liters of haemoperitoneum was seen which was drained out and peritoneal wash was given. No other active sites of bleeding were identified.

On 4th post-op period patient developed fever and was managed conservatively. Rest of post op period was uneventful and patient was discharged on 10th post-op day.

DISCUSSION

Etiology and pathophysiology

The occurrence of hematuria after a CS can arise from several underlying mechanisms:

Surgical trauma

During a CS, the close proximity of the bladder and ureters to the surgical field increases the risk of iatrogenic injury.² Unintentional bladder lacerations or ureteral damage can lead to hematuria. These injuries may remain unrecognized intraoperatively, resulting in delayed presentation postoperatively.³ The index case had no such identifiable injury.

Catheter-associated hematuria

Indwelling urinary catheters are commonly used during and after CS s to ensure bladder decompression. Prolonged catheterization or improper placement can cause irritation or injury to the bladder mucosa, leading to hematuria.

Uterine and bladder compression

Enlarged uterine size during pregnancy or post-surgical uterine involution can compress adjacent structures, including the bladder and ureters. This compression may result in transient hematuria due to venous congestion or impaired urinary drainage.

Vascular causes

Surgical manipulation can result in vascular injury to the bladder's blood supply, leading to extravasation of blood into the urinary tract.⁴ Additionally, conditions like uterine artery pseudo aneurysm (like in the index case), pelvic varices or venous thrombosis can contribute to hematuria.

Coagulopathy

Postpartum coagulopathy, such as disseminated intravascular coagulation (DIC), may present with spontaneous bleeding, including hematuria.⁵ Coagulation abnormalities should be considered in cases with concurrent signs of excessive bleeding from other sites.

Clinical presentation

Patients with spontaneous hematuria may report visible blood in the urine (macroscopic hematuria) as seen in our patient or have blood detected on urinalysis (microscopic hematuria). Symptoms may include dysuria, flank pain, or suprapubic discomfort. Our patient presented with frank hematuria, pain abdomen and abdominal distension. In

some cases, hematuria may be the only clinical sign of an underlying cause, which will need further investigation.

Diagnostic evaluation

History and physical examination

A thorough history, including details of the surgical procedure, catheter use, difficult surgery and any perioperative complications, is critical. Physical examination may reveal signs of abdominal tenderness, bladder distension, or surgical wound complications.

Urinalysis and culture

Initial investigations should include urinalysis to confirm the presence of red blood cells and rule out urinary tract infection. Urine culture can help in identifying infectious causes if present. In the index case, urine culture was sent but no growth was detected in the urine.

Imaging studies

Ultrasound is useful for detecting structural abnormalities, such as bladder wall injury, hematomas, or retained products of conception. CT Urography can also provide detailed imaging of the bladder, urinary tract, identifying ureteral injury or extravasation of contrast. In the present case, contrast enhanced computed tomography revealed haemorrhage in the urinary bladder.

Cystoscopy

Direct visualization of the bladder and urethra can identify mucosal injuries, foreign bodies, or other sources of bleeding.⁶ Cystoscopy done in the present case also revealed presence of clots inside the urinary bladder.

Blood investigations

Complete blood count (CBC) and coagulation profile can help identify anemia or coagulopathy, respectively.⁷

Management strategies

The management of spontaneous hematuria depends on the underlying cause:

Conservative management

Minor injuries or irritation-related hematuria often resolve spontaneously with adequate hydration and avoidance of further catheterization.

Bladder irrigation

Continuous bladder irrigation may be necessary to prevent clot formation and ensure patency of the urinary tract in cases of significant bleeding.⁸

Surgical intervention

For identified structural injuries, surgical repair of the bladder or ureters may be required. Early intervention can prevent long-term complications, such as fistula formation or chronic urinary retention.

Antibiotic therapy

If a urinary tract infection is identified, appropriate antibiotic therapy should be initiated based on culture sensitivity.

Management of coagulopathy

In cases of postpartum coagulopathy, prompt correction with blood products, anticoagulant reversal, or other supportive measures is critical.⁹

Prognosis

With timely diagnosis and appropriate management, the prognosis for spontaneous hematuria after CS is generally favorable.¹⁰ In the index case, though no definite cause of hematuria could be established, timely intervention and drainage of the hemoperitoneum and bladder irrigation improved the condition of the patient. However, unrecognized or untreated cases may lead to complications such as chronic hematuria, urinary tract infections, or even renal impairment.

CONCLUSION

Spontaneous hematuria after a CS is an uncommon but important clinical entity that warrants careful evaluation. Identifying the underlying cause is essential for effective management and prevention of complications. A multidisciplinary approach involving obstetricians, urologists, and radiologists may be required for complex cases. Further research into preventive strategies and long-term outcomes of hematuria in this context is needed to optimize patient care.

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REFERENCES

1. Leslie SW, Hamawy K, Saleem MO. Gross and Microscopic Hematuria. In: StatPearls. Treasure Island (FL): StatPearls Publishing. 2025.
2. Tarney CM. Bladder Injury During Cesarean Delivery. *Curr Womens Health Rev.* 2013;9(2):70-76.
3. Delacroix SE Jr, Winters JC. Urinary tract injuries: recognition and management. *Clin Colon Rectal Surg.* 2010;23(2):104-12.
4. Wright JL, Wessells H. Urinary and Genital Trauma. In *Penn Clinical Manual of Urology*; Hanno PM,

- Malkowicz SB, Wein AJ, Eds.; Elsevier Inc.: Amsterdam, The Netherlands. 2007;283-309.
5. Garg R, Nath MP, Bhalla AP, Kumar A. Disseminated intravascular coagulation complicating HELLP syndrome: perioperative management. *BMJ Case Rep.* 2009;2009:bcr10.2008.1027.
 6. Engelsgerd JS, Deibert CM. Cystoscopy. In: *StatPearls*. Treasure Island (FL): StatPearls Publishing. 2025.
 7. Aynalem M, Shiferaw E, Gelaw Y, Enawgaw B. Coagulopathy and its associated factors among patients with a bleeding diathesis at the University of Gondar Specialized Referral Hospital, Northwest Ethiopia. *Thromb J.* 2021;19(1):36.
 8. Goetz LL, Klausner AP. Strategies for prevention of urinary tract infections in neurogenic bladder dysfunction. *Phys Med Rehabil Clin N Am.* 2014;25(3):605-18.
 9. Hofer S, Schlimp CJ, Casu S, Grouzi E. Management of Coagulopathy in Bleeding Patients. *J Clin Med.* 2021;11(1):1.
 10. Musin II, Berg EA, Safiullin RI, Urmantsev MF, Absalyamova DF, Fatkullina YN, et al. Urological complications in obstetrics. *J Obstet Women Dis.* 2021;70(5):147-55.

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