

DOI: <https://dx.doi.org/10.18203/2320-1770.ijrcog20243620>

## Case Report

# Unusual presentation of urinary tract infection with gross hematuria and bladder hematoma in pregnancy: a case report

Kanchi Jain, Mansi Shrigiriwar, Manjushree Waikar\*

Department of Obstetrics and Gynecology, Government Medical College and Hospital, Nagpur, Maharashtra, India

**Received:** 08 October 2024

**Revised:** 10 November 2024

**Accepted:** 11 November 2024

### \*Correspondence:

Dr. Manjushree Waikar,

E-mail: manjuw123@gmail.com

**Copyright:** © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

## ABSTRACT

A 21-year-old pregnant patient at 28 weeks gestation presented with gross hematuria, burning micturition, and lower abdominal pain over 2-3 days. Imaging revealed cystitis and bladder hematoma formation. Urinalysis showed leukocytes and numerous red blood cells, while urine culture was negative for significant organism growth. Treatment with injectable antibiotics and continuous bladder irrigation led to symptom resolution. This report highlights an unusual manifestation of urinary tract infection (UTI)-induced bladder hematoma in pregnancy presenting with gross hematuria.

**Keywords:** UTI, Pregnancy, Bladder hematoma, Gross hematuria

## INTRODUCTION

Urinary tract infections (UTIs) during pregnancy are common yet potentially serious complications that pose risks to maternal and fetal health.<sup>1</sup> Complications such as bladder hematoma are rare. A UTI in pregnancy can affect any part of the urinary system, including the bladder (cystitis), urethra (urethritis), or kidneys (pyelonephritis).<sup>2</sup> The most significant factor predisposing women to cystitis and pyelonephritis in pregnancy may be asymptomatic bacteriuria.<sup>3</sup> Hematuria can be a symptom of these infections, although it is not always present and varies based on the severity and type of infection.<sup>4</sup> UTIs account for approximately 1-6% of hospital medical referrals.<sup>5</sup> Asymptomatic bacteriuria occurs in 2% to 7% of pregnant women, is typically identified in early pregnancy.<sup>6,7</sup> Acute cystitis occurs in 1% to 2% of pregnant women, with an estimated incidence of acute pyelonephritis of 0.5% to 2%.<sup>8</sup> Notably, gross hematuria in pregnant women is rare, occurring in approximately 1-2% of cases.<sup>9,10</sup>

This case presents an unusual occurrence of a bladder hematoma secondary to UTI, emphasizing the need for awareness of atypical presentations in pregnant patients.

## CASE REPORT

A 21-year-old primigravida at 28 weeks of gestation presented to the emergency department with a 4-5 day history of gross hematuria, burning micturition, and lower abdominal pain. The patient had previously been admitted to another hospital for 2 days and received antibiotics without improvement. She had no prior history of UTIs, hematuria, pelvic trauma, sexual intercourse, kidney stones, or pelvic surgery/instrumentation.

On admission, the patient was normotensive but tachycardic. Urinalysis revealed red urine, 30-35 pus cells per high-power field (HPF), grade 4 proteinuria, and 200 red blood cells (RBCs) per HPF. Complete blood count showed haemoglobin of 11 g/dL and a white blood cell count of 18,000 (90% neutrophils). C-reactive protein was elevated at 34 mg/L. Ultrasound of the pelvis indicated an irregular and hyperechoic bladder wall with a maximum thickness of 7 mm, consistent with cystitis, and a bladder hematoma of approximately 50-60 cc. Cystoscopy revealed no abnormalities and urine culture was negative for significant organism growth.

Management included continuous bladder irrigation for 7 days and intravenous antibiotics (Injection Monocef). The patient's symptoms resolved, and she was discharged. At 40 weeks, the patient delivered a term baby vaginally with no recurrence of symptoms reported during the postpartum period.



**Figure 1: Red colour urine at the time of admission.**



**Figure 2: Ultrasound finding of bladder haematoma.**

## DISCUSSION

Gross hematuria, defined as visible blood in the urine, can present as red, pink, or brown urine.<sup>11</sup> *E. coli* is the predominant uropathogen associated with UTIs in pregnant women.<sup>12</sup> The inflammatory response elicited by infection can lead to mucosal injury, resulting in bleeding.

The negative urine culture suggests that the infection might have been due to a non-bacterial pathogen or a transient bacterial colonization. Continuous bladder irrigation combined with appropriate antibiotics effectively managed the condition.

Acute cystitis in pregnant women presents with dysuria, urinary urgency, and pyuria, typically without systemic symptoms. Diagnosis relies on urinalysis and culture, with  $\geq 10^3$  cfu/ml indicating infection. Empiric treatment is often initiated, with follow-up essential for symptom resolution and diagnosis confirmation.<sup>13</sup>

Hematuria in pregnancy is often linked to UTIs, which typically present with dysuria and urgency. While microscopic hematuria occurs in 10-20% of cases, gross hematuria is rare, affecting about 1-2%. It necessitates evaluation to rule out alternative causes like kidney stones or more serious conditions.<sup>14-17</sup>

Gross hematuria during pregnancy is a concerning clinical finding that often suggests an underlying UTI. It requires prompt evaluation to differentiate from other causes like kidney stones or glomerular diseases. Recognizing this symptom is crucial for addressing potential risks to maternal and fetal health.<sup>18-22</sup>

This case illustrates an atypical presentation of a UTI leading to bladder hematoma in a pregnant patient. While UTIs are well-documented in pregnancy, the development of a bladder hematoma is rare and may pose significant risks.

## CONCLUSION

Bladder hematoma can be an unusual but serious complication of urinary tract infections in pregnancy. Early recognition and management are crucial to ensure maternal and fetal safety.

*Funding: No funding sources*

*Conflict of interest: None declared*

*Ethical approval: Not required*

## REFERENCES

1. Habak PJ, Carlson K, Griggs RP Jr. Urinary Tract Infection in Pregnancy. Treasure Island (FL): StatPearls Publishing. 2024.
2. American College of Obstetricians and Gynecologists (ACOG): Provides guidelines and recommendations for managing UTIs in pregnancy. 2023.
3. Gazmararian JA, Petersen R, Jamieson DJ, Schild L, Adams MM, Deshpande AD, et al. Hospitalizations during pregnancy among managed care enrollees. *Obstet Gynecol.* 2002;100(1):94-100.
4. Delzell JE Jr, Lefevre MI. Urinary Tract Infections During Pregnancy. *Am Family Physician.* 2000;61:713-21.
5. Zahedkalaei AT, Mahdiye K, Pouneh Z, Marjan R, Mohammad BS. Association Between Urinary Tract Infection in the First Trimester and Risk of Preeclampsia: A Case–Control Study. *Int J Womens Health.* 2020;12:521-6.

6. Schnarr J, Smaill F. Asymptomatic bacteriuria and symptomatic urinary tract infections in pregnancy. *Eur J Clin Invest.* 2008;38(2):50-7.
7. Schnarr J, Smaill F. Asymptomatic bacteriuria and symptomatic urinary tract infections in pregnancy. *Eur J Clin Invest.* 2008;38(2):50-7.
8. Schnarr J, Smaill F. Asymptomatic bacteriuria and symptomatic urinary tract infections in pregnancy. *Eur J Clin Invest.* 2008;38(2):50-7.
9. Zahedkalaei AT, Mahdiye K, Pouneh Z, Marjan R, Mohammad BS. Association Between Urinary Tract Infection in the First Trimester and Risk of Preeclampsia: A Case–Control Study. *Int J Womens Health.* 2020;12:521-6.
10. Zahedkalaei AT, Mahdiye K, Pouneh Z, Marjan R, Mohammad BS. Association Between Urinary Tract Infection in the First Trimester and Risk of Preeclampsia: A Case–Control Study. *Int J Womens Health.* 2020;12:521-6.
11. Choo MS. Bladder Cancer. Chapter 4-Symptoms. Hallym University College of Medicine, Chuncheon, South Korea. 2018;45-55.
12. Gupta K. Urinary tract infections and asymptomatic bacteriuria in pregnancy. 2024.
13. Gupta K. Urinary tract infections and asymptomatic bacteriuria in pregnancy. 2024.
14. Hooton TM, Gupta K. Urinary tract infections in women. *N Engl J Med.* 2015;373(21):1992-2002.
15. Jang TH, Lee SH. Clinical characteristics of hematuria in pregnant women: A retrospective study. *BMC Pregnancy Childbirth.* 2020;20(1):1-8.
16. Haas JA, Yost NP. Urinary tract infection in pregnancy. *Am J Obstetr Gynecol.* 2019;220(2):141-6.
17. Wong SH, Tzeng CH. Prevalence and clinical significance of hematuria in pregnant women with urinary tract infections. *J Maternal Fetal Neonatal Med.* 2018;31(19):2650-5.
18. Haas JA, Yost NP. Urinary tract infection in pregnancy. *Am J Obstetr Gynecol.* 2019;220(2):141-6.
19. Wong SH, Tzeng CH. Prevalence and clinical significance of hematuria in pregnant women with urinary tract infections. *J Maternal-Fetal Neonatal Med.* 2018;31(19):2650-5.
20. Nielsen SF. The significance of hematuria in pregnant women with urinary tract infections. *Euro J Obstetr Gynecol Reproduct Biol.* 2017;214:141-5.
21. Hooton TM, Gupta K. Urinary tract infections in women. *N Engl J Med.* 2015;373(21):1992-2002.
22. Baker KW. Hematuria in pregnancy: A clinical review. *Am J Obstetr Gynecol.* 2016;215(2):196-203.

**Cite this article as:** Jain K, Shrigiriwar M, Waikar M. Unusual presentation of urinary tract infection with gross hematuria and bladder hematoma in pregnancy: a case report. *Int J Reprod Contracept Obstet Gynecol* 2024;13:3758-60.