

## Case Report

## Puerperal Gross Hematuria Complicating Postpartum Hemorrhage

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## Article History

Received: 26.08.2022

Accepted: 30.09.2022

Published: 13.11.2022

## Journal homepage:

<https://www.easpublisher.com>

## Quick Response Code



**Abstract: Case presentation:** We report a case of a 24-year-old African woman who was gravida 2 para 1 with no living child. who underwent an emergency caesarean section due to placenta previa at 37 weeks + 5 days. She gave birth to a male baby weighing 2.7 kg and had an Apgar score of 8 and 10 in 1<sup>st</sup> and 5<sup>th</sup> minute respectively. She sustained postpartum hemorrhage and anemia which was further complicated by gross hematuria post-delivery. After several days of conservative management with bladder irrigation and blood transfusions, she recovered and was discharged home; passing clear urine. **Conclusion:** Hematuria in puerperium can cause diagnostic dilemma to the obstetricians and has the potential of causing morbidity to patient.

**Keywords:** Puerperal Gross Hematuria; post-partum Hemorrhage.

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## INTRODUCTION

Maternal adaptation to pregnancy is achieved by the various physiological changes that occur in different systems of the body. Among them are changes pertaining to the renal system [1].

Hematuria is the presence of blood in urine. Microscopically, it is defined by the presence of more than three red blood cells per high power field [2]. Hematuria in the postpartum period is not common and has been reported in literature in a series of case reports [2, 3]. We share our experience of a patient who developed significant hematuria post caesarean delivery worsening her anemic state.

## CASE PRESENTATION

A 24-years-old African woman G2P1 at 37 weeks of estimated gestation age presented at our hospital with a 2-day history of a painless vagina bleeding accompanied fetal movements that were perceived to be reduced. She gave a negative history of trauma. She was normotensive and her pregnancy was without any complications. Previous pregnancy ended with a stillbirth at term of a 4.5kg baby. However, the pregnancy course was uneventful.

On examination, she was pale, hypotensive with blood pressure of 80/53mmHg and tachypneic pulse rates of 118b/m. The fundal height was 30cm, with a longitudinal fetal lie in cephalic presentation but not engaged. Two uterine contractions were palpated each lasting 10-20 seconds. Bedside obstetric ultrasound revealed fetal bradycardia, with fetal heart rates of 90 b/m and an anteriorly located placenta completely occupying the internal cervical os. Amniotic fluid volume measured 4cm in a single deepest pocket. Active bleeding was seen from the vagina. However, digital examination was not done because of the risk of torrential bleeding. Her hemoglobin was 9 g/dl with platelets of  $258 \times 10^3 / \text{mm}^3$ . Two liters of lactated ringer's solution was administered and preoperative, her urine was clear. An emergency lower segment caesarean section was performed for the indications of placenta previa with hemodynamic instability and fetal bradycardia. The placenta was pushed down and a baby boy with Apgar score of 8 and 10 in 1<sup>st</sup> and 5<sup>th</sup> minutes respectively weighing 2.7kg was delivered. The third stage of labor was complete and the uterus was repaired. Oxytocin 20 IU in 500 mls normal saline was administered as an infusion because the uterus was contracting intermittently hence the patient sustained postpartum hemorrhage. Estimated blood loss was 1400mls. Total fluids received intraoperative was 4 liters (Ringer's lactate alternating with 0.9% normal

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saline). Urine output at end of caesarean section was 2000 mls and was clear. A unit of blood was given intraoperatively.

During the 5<sup>th</sup> postoperative hour, blood-stained urine was noted collecting in the urine bag approximately 1700mls. Her blood pressure dropped to 78/57mmHg with heart rates of 120b/m. The abdomen was not distended, with a and dry surgical wound dressing. The uterus was well contracted and she had a normal lochia rubra. The urine bag was emptied and the patient was managed with intravenous crystalloid fluids and until the vitals stabilized. Other postoperative orders continued as prescribed. Iatrogenic bladder injury was suspected. Using 24fr sheath urethroscopy was done and there was normal urethral, and bladder neck, there was no obvious lesion or inflammation. A three-way catheter was inserted and continuous bladder irrigation was started. During subsequent patient reviews, significant blood kept collecting in the urine bag (Fig 1) however, adequate urine output was maintained (> 30mls /hour). Pallor increased. Repeat blood count showed a hematocrit of 22.2; with a drop in hemoglobin and platelets to 6.7 g/dl and  $158 \times 10^3/\text{mm}^3$  respectively. Tranexamic acid 1gm stat was administered and a second unit of blood was transfused.



**Figure 1: The image above was taken from the patient within 36 hours post caesarean section. It shows extent of gross hematuria the patient had**

Clearing of urine color was noted on the 3<sup>rd</sup> postoperative day. Less blood was seen collecting in the urine bag. The patient's urine was monitored and observed for the clearance of blood for the next 2 days during which she was kept on continuous bladder irrigation. Each day was marked by much improvements in the urine color as it was clearer than that observed in the previous day.

A full blood picture control done on day 4 post-operative showed modest changes in the levels of hemoglobin (7.2g/dl) and platelets ( $195 \times 10^3/\text{mm}^3$ ). The hematocrit was almost unchanged (21.9).

Eventually on day 5 post-operative, the patient had maintained clear urine collecting in the urine bag

devoid of any macroscopic blood collection or stains in the 24 hours preceding. Foley catheter was removed and the patient was discharged home with hematinics.

## DISCUSSION

The finding of persistent blood-stained urine in a patient post caesarean section posed a perplexity in diagnosis. Her antepartum history was negative for hematuria. Moreover, she did not have any obstetric or medical comorbidity that could have explained the finding of hematuria in puerperium. Presence of pre-eclampsia/eclampsia and urinary tract infections among others can cause hematuria during pregnancy which can persist in puerperium if not managed promptly and appropriately [2].

Not surprisingly, an iatrogenic bladder injury was thought of though, a cystoscopy ruled it out. Moreover, there was no report of bladder injury to this patient in the post-operative notes. No difficulties were encountered in making the bladder flap. Iatrogenic bladder injuries are common and if undetected and unrepaired, commonly presents with urine leakage into the peritoneum that may culminate in chemical peritonitis [4]. Clinically such patients would present with an abdominal distension coupled with reduced urine output (as much of it would be accumulating in the peritoneal cavity), all of which were absent in this patient

Hematuria in relation to placenta previa has been documented and can occur if placenta percreta is present [5] which was not the case in our patient.

Placenta previa is a notable risk factor for PPH. Our patient succumbed to it but anemia was further compounded by the post-operative blood losses in the urine. This necessitated additional blood for transfusion. Reports of PPH due to urinary losses has been documented in literature [3].

Sonographic evaluations in case reports have revealed blood clots in the bladder in case reports [2] and an intravenous pyelography is the imaging modality of choice in such circumstances.

Our patient was conservatively managed with bladder irrigation. Nevertheless, a three-way urine catheter is better suited for bladder irrigation. Improvements were noted as the hematuria subsided gradually in consecutive days and the urine became clearer. A conservative approach has been used in previous such cases and good outcomes have been achieved [2].

## CONCLUSION

Postpartum hematuria can pose a diagnostic dilemma. It can be due to idiopathic causes as was the case in this patient or it can have identifiable causes. It

has the potential of causing maternal morbidity such as significant anemia.

**Patient's perspective:** The care provided was timely with full explanation of the diagnosis and prognosis was explained to the patient and plan of follow up made.

**Acknowledgement:** We acknowledge the support of Obstetrics and Gynecological department and Department of urology that was consulted during the management of this patient.

**Authors' Contribution:** HM and FM played equal roles in the preparation of this case report and management of the patient. The other co-authors contributed to the management of the patient and writing of the case report. All authors read and approved the final manuscript.

**Funding:** The family member of the patient covered the cost of care offered to this patient and cost to prepare and publish this manuscript was covered by authors

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**Cite This Article:** Fridolin Mujuni, Hija Hamadi, Hamis Matalu, Happiness Mbena, Elieza Chibwe, Richard Kiritta (2022). Puerperal Gross Hematuria Complicating Postpartum Hemorrhage. *East African Scholars Multidiscip Bull*, 5(11), 261-263.