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Case Report

From perill to progress:a maternal near miss-secondary postpartum hemorrhage

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ABSTRACT

Maternal near miss (MNM) refers to a situation in which a woman nearly dies but survives a life-threatening complication during pregnancy, childbirth, or within the postpartum period. This case report describes the management of a 22-year-old, para 2, living 2 woman who presented with secondary postpartum hemorrhage (PPH) on postoperative day 13, having been transferred from another center. Initial stabilization included broad-spectrum antibiotics and vasopressors. Ultrasound revealed suspected retained products of conception or clots, leading to suction and evacuation, with laparotomy as a contingency. Despite balloon tamponade, ongoing hemorrhage required escalation to peripartum hysterectomy with concurrent bladder rent repair. A multidisciplinary approach involving obstetricians, anaesthetists, and urologists was critical to the successful outcome. The postpartum period was uneventful, and the patient made a full recovery. This case underscores the importance of timely identification, calm decision-making, and coordinated multidisciplinary care in managing MNM scenarios, ultimately saving the patient's life.

Keywords: Maternal near miss, Secondary PPH, Blood transfusion, Peripartum hysterectomy

INTRODUCTION

The maternal healthcare landscape faces persistent challenges, notably maternal near misses and secondary postpartum hemorrhage (PPH). Maternal near misses are severe complications that occur during or after childbirth but do not culminate in maternal death. These incidents serve as critical indicators of healthcare quality and outcomes, reflecting gaps in care that need urgent attention.[1] Identifying and understanding the factors contributing to maternal near misses can guide improvements in clinical practice and policy, ultimately enhancing maternal safety.

Secondary PPH, defined as excessive bleeding occurring more than 24 hours after delivery, remains a significant risk factor for maternal morbidity. It complicates postpartum recovery and may lead to severe complications, including shock, anemia, and even death if not adequately managed.[2] The relationship between maternal near misses and secondary PPH is critical to understanding maternal health. Both issues are intertwined, as ineffective management of secondary PPH can result in severe complications that qualify as near misses. Studies indicate that nearly 50% of maternal near misses are related to complications such as PPH, underscoring the need for a comprehensive understanding of these phenomena.[3] Establishing clear criteria for defining and measuring maternal near misses and secondary PPH is vital for developing targeted strategies that can improve maternal health outcomes and inform healthcare policies.[4]

CASE REPORT

A 22-year-old woman, P2L2, was admitted on postoperative day 13 after a lower segment cesarean section (LSCS) with complaints of vaginal bleeding for two days. She had been treated at another facility with uterotonics and transfused with three units of packed red

cells before being transferred to our center for further management. On admission, the patient was anemic, febrile-temperature 101°F, tachycardic-pulse 130/min, and hypotensive -BP 80/50 mmHg. Her GCS was 15/15, and oxygen saturation was 96% on room air. On abdominal examination, the uterus was palpable at 24 weeks size. Per vaginal bleeding at the time of examination was within normal limits.

Figure 1: Balloon tamponde drained 1 litre of blood in 10 minutes.

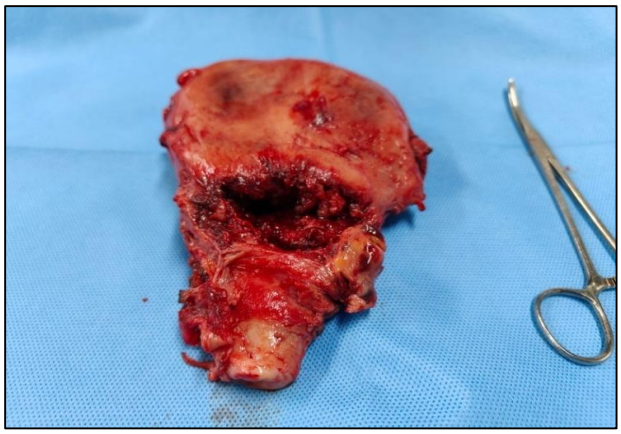

Figure 2: Scar dehiscence in the lower segment.

Blood investigations revealed anemia and signs of systemic infection. A bedside ultrasound showed an enlarged uterus (15×8.9×11.3 cm) with mixed echogenic areas (6.5×5.4 cm), consistent with retained products of conception. Bilateral ovaries appeared normal. The patient was stabilized with inotropic support, IV fluids, and broad-spectrum antibiotics for sepsis. A transfusion of one unit of packed red cells was administered. Suction and evacuation under ultrasound guidance were performed, removing placental fragments and clots followed by balloon tamponade. Despite the insertion of a balloon tamponade to control bleeding, it was unsuccessful, leading to the decision to proceed with a laparotomy.

During the laparotomy, intraoperative findings revealed a significantly enlarged uterus, approximately 24 weeks size, with complete scar dehiscence at the lower uterine segment near the previous cesarean scar. The bladder was densely adherent to the lower uterine segment, with omental adhesions present on the anterior surface of the uterus. The subcuticular tissue was unhealthy, showing signs of pus and slough. Due to ongoing hemorrhage, despite balloon tamponade, the patient underwent a peripartum hysterectomy and bladder rent repair. The total estimated blood loss during the procedure was between 2.2 and 2.5 liters, and the patient required transfusion with four units of packed red cells, four units of each fresh frozen plasma (FFP) and platelets.

Postoperatively, the patient was stabilized in the intensive care unit, where her supports were gradually tapered off. In view of her hypoalbuminemia, intravenous human albumin was administered. After 48 hours, she was transferred to the general ward and was discharged in stable condition on postoperative day six. Histopathological examination of the hysterectomy specimen revealed mild chronic cervicitis in the cervix, inactive endometrial glands with stromal hemorrhage, fibrin clots, and vascular congestion. The myometrium showed signs of vascular congestion, while the LSCS scar area exhibited subacute endometritis with superficial myonecrosis.

Table 1: Investigations done during the hospital stay.

Investigation	14/09/2023	15/09/2023	16/09/2023
Hemoglobin (g/dl)	8.0	8.6	8.3
Total count (/mm³)	10150	14020	-
Differential count (N/l)	N-92% L-6%	N-90% L-6%	-
Platelet count (/mm³)	150,000	195,000	145,000
S. Albumin	2.4	-	-
Urea (mg/dl)	18	17	23
Creatinine (mg/dl)	0.8	0.5	0.6
Prothrombin Time+INR	16.6/1.48	18.4/1.68	14.9/1.33
S. Fibrinogen	267	197	320

DISCUSSION

Secondary PPH occurs between 24 hours and 6 weeks post-partum and its uncommon following a caesarean section. Most common causes of secondary PPH includes retained placental tissue, subinvolution, infection, endomyometritis, AV malformation of the uterus.[6]

It is essential to diagnose the cause of PPH. Labarotory panel which includes Complete Blood count, coagulation profile, renal function and liver function test should be done to assess the severity of the blood loss. Diagnosing PPH is essential. Ultrasound (USG), Doppler USG are the primary imaging techniques used to identify the cause of

PPH.CT Angiogram is preferred to identify the exact source of bleeding if there is a suspicion of extraperitoneal hematoma.[7] Postpartum hemorrhage (PPH) remains one of the most challenging obstetric emergencies, particularly in cases of secondary PPH, such as the one presented in this report. PPH is often complicated by the difficulty in accurately estimating blood loss, which can lead to cognitive biases and delay critical management steps. Although more accurate methods of measuring quantitative blood loss have been developed, these have not consistently demonstrated improvements in clinical outcomes.[8] This suggests that, beyond precise measurement, the timely recognition and multidisciplinary management of PPH are critical for improving maternal outcomes.

In both primary and secondary PPH, interprofessional approaches have proven effective in reducing morbidity. PPH management bundles and perinatal quality collaboratives have been introduced in various healthcare settings to ensure a standardized approach to managing hemorrhage. These frameworks promote early identification and prompt intervention for conditions such as uterine atony, genital tract lacerations, retained placental tissue, and coagulopathy, which are common causes of PPH. In our case, the suspected retained products of conception identified on ultrasound required immediate attention, underscoring the importance of systematic screening and surgical readiness. Prevention strategies remain a cornerstone of reducing PPH-related complications. Active management of the third stage of labor, including controlled cord traction and uterotonic administration, has been shown to significantly reduce the incidence of primary PPH.[9] Additionally, prenatal identification of high-risk factors such as previous uterine surgery, uterine anomalies, and placental abnormalities allows for better planning and preparedness during labor and delivery

It also highlights the necessity of escalated intervention when conservative measures fail. Despite initial stabilization efforts, including broad-spectrum antibiotics, vasopressors, and balloon tamponade, ongoing hemorrhage required the decision to proceed with peripartum hysterectomy, which ultimately saved the patient’s life. In such cases, surgical intervention becomes necessary as a last resort, particularly when bleeding is refractory to medical management and more conservative procedures.

CONCLUSION

In conclusion, vigilance and prompt intervention are critical in mitigating the morbidity and mortality associated with PPH. This case further emphasizes the importance of multidisciplinary teamwork and the need for swift, decisive action in cases of maternal near miss due to secondary PPH. The timely and coordinated efforts of obstetricians, anaesthetists, and surgeons played a pivotal role in ensuring a positive outcome for our patient, reflecting the value of comprehensive and proactive care in obstetric emergencies

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