

Case Series

Close calls in obstetrics: lessons from maternal near miss cases at a tertiary hospital

M. Banumathy*, Preethikka

Department of Obstetrics and Gynecology, Sri Ramakrishna Hospital, Coimbatore, Tamil Nadu, India

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*Correspondence:

Dr. M. Banumathy,

E-mail: drmvkshirsagar@yahoo.co.in

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ABSTRACT

Maternal near-miss (MNM) events offer critical insight into the gaps and successes in obstetric care without the finality of mortality. Evaluating these cases helps identify missed opportunities, systemic weaknesses, and areas for improvement in clinical response. This case series includes nine MNM cases. Four cases had hypertensive disorders five had haemorrhagic complications. Two women in hypertensive group had Antepartum eclampsia around 32 weeks, both required emergency cesarean sections and intensive care. They are also screen positive for Preeclampsia and on aspirin prophylaxis. Another patient developed eclampsia on postpartum day 10 revealing posterior reversible encephalopathy syndrome (PRES). Fourth patient, a twin gestation at 33 weeks, an IVF conception presented with breathlessness and was diagnosed with peripartum cardiomyopathy. Among the five with haemorrhage complications, two had massive placental abruption at 35 weeks. One with Takayasu arteritis and one with dilated cardiomyopathy had Postpartum haemorrhage (PPH), managed with B-Lynch sutures. Third one had atonic PPH and fourth patient had traumatic PPH which required uterine artery embolization. The final case had postoperative intramyometrial haemorrhage on 2nd postoperative day after cesarean myomectomy, requiring emergency laparotomy. All patients received Packed red blood cell [PRBC] transfusion and intense monitoring done. All nine patients recovered without severe morbidity and length of hospital stay being 5-7 days. Enhanced antenatal screening, postpartum vigilance, and robust emergency systems are essential to reduce maternal morbidity, Early detection and initiation of action through the 4 R's: Readiness, Recognition, Response, and Reporting -is the mandate.

Keywords: Close calls, Maternal near-miss, Takayasu arteritis

INTRODUCTION

Maternal mortality serves as a crucial measure of the effectiveness and quality of maternal health care within a country. India has made significant progress towards achieving the sustainable development goal of reducing the maternal mortality ratio (MMR) to less than 70/lakh live births by 2030.

A maternal near-miss case refers to a woman who experiences a severe, life-threatening complication during pregnancy, childbirth or within 42 days of termination of pregnancy, but ultimately survives the episode.¹

Retrospective descriptive case series conducted in a tertiary care teaching hospital. 9 maternal near miss (MNM) cases caused by two major contributors to maternal mortality: Hypertensive disorders (4 patients),

Hemorrhagic complications (5 patients). The time period was of 2 months (March and April, 2025). To highlight the clinical spectrum, Management strategies, Outcomes of MNM cases, with a focus on identifying gaps and lessons to improve obstetric care. Detailed clinical data including patient demographics, antenatal history, presenting complaints, investigations, management, and outcomes were extracted and analyzed descriptively.

CASE SERIES

Case 1

31 years, G2P1L1, 33 weeks, previous LSCS, severe preeclampsia. She was diagnosed with gestational hypertension for 2 weeks, irregular intake of anti-hypertensives. She had complaints of bilateral lower limb swelling (15 days), facial puffiness, and headache (2 days). Developed GTCS at home, presented to emergency in post-ictal confusion.

On admission

BP 220/150 mmHg, pulse 112/min, pedal edema up to knees. Investigations showed thrombocytopenia, elevated LDH and uric acid, mild renal impairment, proteinuria, and mild cardiac changes. Managed with MgSO₄, anti-hypertensives, anticonvulsants, steroids, and taken up for emergency LSCS.

Intra operative findings

1000 ml ascitic fluid, 50 ml retroperitoneal clot, Baby weighed 1.489 kg with Apgar 6/10 and 7/10. Postpartum care included oral anti hypertensives, thrombo prophylaxis and BP monitoring. Discharged with stable maternal and fetal outcomes after 10 days.

Pitfalls

Poor compliance with prescribed antihypertensive medication, lack of awareness and education on preeclampsia symptoms, delay in seeking medical attention despite warning signs.

Case 2

23 years old, primigravida, 31 weeks, severe preeclampsia and Stage II fetal growth restriction (FGR). She had early onset hypertension at 25 weeks and was on antihypertensives. Admitted at 25+6 weeks with facial puffiness, bilateral lower limb swelling, and excessive weight gain of 10 kgs in one month. Her BP controlled on Tab Nifedipine 10 mg thrice daily and Tab Labetalol 200 mg thrice daily. At 31 weeks, complained of headache and developed GTCS one episode.

Blood pressure was 160/90 mmHg at the time of episode. Lab values showed mild anemia (Hb 10), mild proteinuria, and normal renal function. Underwent emergency LSCS. The baby weighed 971 grams with Apgar scores 6 and 7. In postpartum, blood pressure was controlled on Tab Amlodipine and Enalapril, thromboprophylaxis given. Maternal and fetal outcomes were good. Discharged on POD-10.

Pitfalls

Delay in recognizing symptoms of impending eclampsia.

Case 3

26-year-old, P1L1, postoperative day 10 after emergency LSCS done for non-progression of labor, H/O GDM on OHAs. She presented with two episodes of GTCS at home and one in the hospital, each lasting about 30-45 seconds. Since delivery, she reported having headache and insomnia. Her blood pressure was normal throughout pregnancy but was 140/90 mmHg at presentation. Labs revealed mild anemia, elevated uric acid (19.4), and raised urine albumin-to-creatinine ratio (188.5). MRI showed symmetrical hyper intensities in bilateral cerebral gyri, basal ganglia, and thalami consistent with Posterior Reversible encephalopathy syndrome (PRES). Treated with MgSO₄, anticonvulsants (Levetiracetam and Lacosamide), and anti-hypertensives (Calcigard). Discharged with stable maternal and fetal condition after 3 days.

Pitfalls

Delay in recognition of persistent post-partum headache, inadequate awareness on symptoms.

Case 4

29-year-old, primigravida, 33 weeks, IVF conception, DCDA twins, gestational hypertension and hypothyroidism. She was admitted with complaints of breathlessness and bilateral lower limb for one day. She was diagnosed with gestational hypertension one week earlier, managed with Tab Labetalol 100 mg TDS.

Vitals were stable, BP-140/90 mmHg. PIH profile-normal. Echocardiography showed global hypokinesia with LVEF 40%, mild mitral and tricuspid regurgitation, pulmonary hypertension, and bilateral pleural effusion suggestive of peripartum cardiomyopathy (PPCM). Managed with diuretics, digoxin, hydralazine, labetalol, and supportive antibiotics. Elective LSCS was performed, delivering twin babies weighing 1.903 kg and 1.794 kg in stable condition. Both required ICU stay for 2 days post-delivery. Patient was discharged on Tab Lasix 40 mg OD, Tab Digoxin 0.25 mg OD, and Tab Hydralazine 25 mg BD after 5 days. Counselling given regarding follow up and future pregnancy planning.

Case 5

34 years old, G2P1L1, 34+5 weeks, previous LSCS, hypothyroidism. She has presented with bleeding per vaginum for 2 hours, bilateral leg swelling, and not able to perceive fetal movements for 2 hours.

On examination

BP 90/60 mmHg, tense uterus, fetal bradycardia (80 bpm), and PV bleeding. Emergency LSCS was performed for suspected placental abruption.

Intraoperative findings

Couvellaire uterus, 910 g retroplacental clot, true knot in cord, and 1 l blood loss. Baby weighed 2.8 kg, had poor Apgar scores (0/10, 1/10, 2/10), and poor outcome. Patient received 2 units PRBC and was managed with IV FCM and oral supplements postpartum

Pitfalls

Delay in reaching health care attributed to transport issues despite significant bleeding and absent fetal movements, Lack of awareness about warning signs of placental abruption.

Case 6

24 years, G2A1 at 35+5 weeks, known case of Takayasu arteritis, dilated cardiomyopathy (DCMP), and hypo thyroidism. She had two prior admissions at 30 and 34 weeks for antepartum bleeding, managed conservatively. Labor was induced with prostaglandins (2 doses), following which she developed sudden PV bleeding.

On examination

PR 82/min, BP 120/80 mmHg, increased uterine tone, clots on PV examination. Emergency LSCS was performed due to bleeding. Intraoperatively, blood-stained liquor, 200 ml retroplacental clot, and atonic PPH were noted; B-Lynch suturing was done. Baby weighed 2.272 kg with good Apgar scores (8/10, 9/10).

Patient received 1-unit PRBC and was discharged on iron and calcium.

Case 7

28 years, primigravida at 40 weeks, had induced labor (Foley+Misoprostol+Oxytocin), delivered a 3.524 kg baby vaginally with episiotomy. Developed atonic PPH (~1000 ml) 1 hour after delivery.

On examination

Atonic uterus, vitals were PR 90, BP 100/70. Vaginal exam under GA revealed bleeding from vault tear. Hb dropped from 10.5 to 6.9 g/dl post-delivery. She was managed with Inj Oxytocin 20 units over 2 hours, Tab Misoprostol 600 mcg per rectally, and underwent vaginal exploration under general anesthesia. Bleeding was noted from the right lateral vaginal wall near the vault, which was sutured. She received 2 units of packed red blood cells (PRBCs).

Pitfalls

Delayed recognition of vault tear as the source of bleeding.

Case 8

29 years, primigravida at 38+1 weeks with hypothyroidism, Class II Obesity, had spontaneous labor and assisted vaginal delivery. She delivered a 2.793 kg baby, followed by atonic PPH (1000 ml) 30 minutes later. On examination, her vitals showed PR 106/min, BP 80/50 mmHg, SpO₂ 96%, uterus atonic. Investigations revealed Hb 10.4 g/dL, Hct 30.7%, platelet count of 1.9 lakh, and normal LFT, RFT, and coagulation profile. Management included Inj Oxytocin 20 units, Inj Methylergometrine 0.2 mg IM (two doses). However, as bleeding persisted even after medical management, uterine artery embolization (UAE) was performed, which successfully controlled the hemorrhage.

Case 9

28 years, primigravida at 36+3 weeks with large intramyometrial fibroid. She underwent elective LSCS with myomectomy (12×8 cm Type 5 fibroid). She delivered a 2.525 kg baby with Apgar scores of 7/10 and 8/10.

On POD-2

Developed abdominal bloating and giddiness, Hb drop from 11→6.6 g/dl. USG showed hemoperitoneum + intramyometrial collection. She underwent an emergency laparotomy, during which 250 ml of hemoperitoneum was drained. Intraoperatively, 50 ml of intramyometrial hemorrhage was also noted, and the uterus was atonic. She was treated with Inj Oxytocin 20 U and Inj Prostadin 250 mcg intramyometrial, after which uterine tone was regained. She was transfused with 2 units PRBCs.

Pitfalls

Undertaking myomectomy during LSCS carries hemorrhage risk; decision requires high caution.

DISCUSSION

Maternal morbidity is an indicator of the quality of a country's maternal health services. MNM events provide an unique opportunity to review the quality of obstetric care and identify modifiable factors that could prevent progression to maternal mortality. Based on WHO criteria MNM ratio (MNMR) mentions to the number of maternal near-miss cases per 1000 live births (LB). Compared with Maternal Death Review, the fear of blame and punishment is less in near-miss review. So, a near-miss review if performed effectively, can easily lead to implementation of changes, that will improve the quality of services. In a systemic review conducted in 2019 by Abdollahpour et al the weighted pooled worldwide prevalence of MNM, was 18.67/1000 (95% CI: 16.28-21.06) and among the studies that had been conducted in India, weighted pooled prevalence of MNM was 28.22.2 In another review conducted in 2021 by Kulkarni et al,

the incidence of MNM varied widely from 3.9 to 379.5 per 1000 live births and 7.6-60.4 per 1000 deliveries. MNM: Maternal Death varied from 1.7:1 to 21.8:1.3 They concluded that hypertensive disorders and anaemia were the leading direct and indirect causes of MNM, respectively.

Haemorrhage was one of the causes for MNM events (18-63.4 %) whereas hypertensive disorders ranged between 11.8 and 40.5 per cent.^{4,5} In a study done by Tallapureddy et al severe anaemia (65.6 %) was a leading indirect cause for MNM cases.⁶ In this series, hypertensive disorders and obstetric hemorrhage emerged as the two predominant contributors to MNM, consistent with national and global trends.

Hypertensive disorders in pregnancy

Four of the nine cases were attributed to hypertensive complications, including two cases of antepartum eclampsia, one case of postpartum eclampsia with PRES, and one case of PPCM. Notably, in the antepartum eclampsia cases, both women were positive for early preeclampsia screening and on aspirin prophylaxis, yet experienced severe complications. This raises concerns about the adequacy of follow-up and patient compliance. The postpartum case highlights the importance of extended monitoring beyond delivery, especially when warning signs like persistent headache are present. PPCM, though rare, underscores the need for cardiac evaluation in patients with breathlessness, even in the absence of overt cardiac history. A common pitfall across HDP cases was delayed symptom recognition and poor antenatal compliance, reflecting a gap in patient education and antenatal engagement.

Obstetric hemorrhage

Five of the nine cases involved hemorrhagic complications, including abruptio placentae, postpartum hemorrhage (PPH), traumatic PPH, and post-cesarean hemorrhage. Two cases presented with abruptio placentae with significant blood loss, demonstrating the life-threatening nature of undiagnosed or poorly managed antepartum hemorrhage. Three others experienced severe PPH due to uterine atony, vault tear, and post-myomectomy bleeding, respectively-requiring interventions like B-Lynch sutures, uterine artery embolization, and emergency laparotomy. This group of cases underlines the importance of timely recognition of hemorrhage, rapid transfusion availability, and surgical readiness. The decision to perform a cesarean myomectomy, although successful, nearly resulted in a complication. Preoperative planning, counselling and readiness to tackle complications resulted in good outcome. Across all cases, PRBC transfusion was universally required, indicating the critical need for accessible and functional blood banks. All patients survived without major long-term morbidity, which reflects the efficacy of care at the tertiary level. However,

preventable delays and suboptimal initial responses were common, pointing to deficiencies in primary and secondary care levels.

This aligns with the well-known "Three Delays" model: delay in seeking care, delay in reaching care, and delay in receiving appropriate care-all of which were evident in this series. In a systemic review by Ragini Kulkarni et al. the first-level delay (D1)-encompassing delays in recognizing complications and seeking appropriate care-has been reported to account for 6.3% to 60.6% of MNM cases. Second-level delays (D2), including transport difficulties and referral inefficiencies, have been implicated in 20.8% to 30.3% of cases. Additionally, third-level delays (D3) occurring within healthcare facilities-due to factors such as lack of infrastructure, essential medications, or blood availability-have been shown to contribute to 2.7% to 19.9% of MNM cases.^{7,8,9,10,11} Collectively, these findings reinforce that first- and second-level delays remain the predominant contributors to maternal near-miss events in low- and middle-income settings.

To reduce maternal morbidity and mortality, a focus on the "4 R's"—Readiness, Recognition, Response, and Reporting—is essential: Readiness through improved antenatal risk stratification and emergency preparedness, Recognition of danger signs by both healthcare providers and patients, Response with timely and evidence-based interventions, Reporting for learning and continuous quality improvement.

CONCLUSION

This case series reaffirms that maternal near-miss events are sentinel indicators of gaps in the healthcare delivery system. Hypertensive disorders and obstetric hemorrhage continue to be leading causes of MNM. The analysis highlights that most cases could have been mitigated through improved antenatal surveillance, patient education, early referral, and proactive multidisciplinary intervention.

Maternal near-miss audits, when used systematically, can be powerful tools for shaping safer, more responsive obstetric care systems.

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