

A Rare Hemorrhagic Complication in Hypertensive Pregnancy: Epistaxis in a Case of Preeclampsia with HELLP Syndrome

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Abstract: ***Background:** Epistaxis is a rare but potentially dangerous side effect of pregnancy - related hypertension diseases. While mucosal congestion due to hormonal changes may contribute to minor nasal bleeding during pregnancy, spontaneous and refractory epistaxis, especially in association with preeclampsia and HELLP syndrome, is rare and underreported. **Case:** We have reported an incident of a 31 year primigravida at 33+3 weeks of gestation with chronic hypertension on labetalol and nifedipine, who presented with preeclampsia and HELLP syndrome. Labour induction was initiated with prostaglandin E2 following multidisciplinary clearance. During the latent phase, the patient experienced a sudden rise in blood pressure (170/110 mmHg) and developed spontaneous, persistent epistaxis. Initial measures, including escalation of antihypertensives, magnesium sulfate (Zuspan regimen), and ENT interventions (Trotter's method, tranexamic acid), failed to control the bleeding. An emergency lower - segment cesarean section was carried out under general anesthesia due to fetal discomfort. Significant intraoperative and postoperative bleeding necessitated transfusion of platelets, packed cells, and fresh frozen plasma. Persistent uncontrolled hypertension (BP up to 200/100 mmHg) leading to nasal/oral bleeding required anterior and posterior nasal packing under general anesthesia. The patient was managed in the ICU with antihypertensive infusions and magnesium sulfate. Bleeding resolved after 48 hours, allowing gradual weaning from ventilatory and inotropic support. The patient was stabilized and discharged on dual oral antihypertensives. **Conclusion:** This case highlights epistaxis as a rare yet significant hemorrhagic manifestation in preeclampsia with HELLP syndrome. Prompt recognition, aggressive blood pressure control, ENT intervention, and a multidisciplinary approach are essential for optimal maternal outcomes.*

Keywords: Epistaxis, Preeclampsia, Hypertensive Disorder of pregnancy, HELLP Syndrome, Obstetric Emergency

1. Introduction

One of the main causes of maternal and perinatal morbidity and mortality worldwide, hypertensive disorders during pregnancy, such as gestational hypertension, preeclampsia, and HELLP (Hemolysis, Elevated Liver enzymes, Low Platelet count) syndrome, account for up to 10–15% of maternal deaths in developing nations. ^[1, 2] About 2–8% of pregnancies are complicated by preeclampsia, which is defined as end - organ failure or new - onset hypertension with proteinuria after 20 weeks of gestation. ^[3] A severe form of preeclampsia, HELLP syndrome is linked to thrombocytopenia, hepatic dysfunction, coagulation abnormalities, and a significant risk of maternal complications, including disseminated intravascular coagulation, placental abruption, and renal failure. ^[4, 5]

Although hemorrhagic complications in preeclampsia are most commonly associated with placental pathology and postpartum hemorrhage, epistaxis is an unusual and rarely documented manifestation. Physiological changes in pregnancy, including increased plasma volume, mucosal vascular engorgement, and hormonal effects on vascular permeability, can predispose to nasal bleeding ^[6]. However, the combination of endothelial dysfunction, uncontrolled hypertension, and thrombocytopenia in HELLP syndrome can render such bleeding episodes persistent and medically challenging.

The literature on epistaxis in hypertensive pregnancies is limited to isolated case reports, often highlighting delayed

recognition and the need for urgent ENT and critical care support ^[7, 8]. Severe epistaxis, if refractory, can lead to significant maternal morbidity due to hypovolemia, airway compromise, and transfusion - related complications.

This case report presents a rare but life - threatening occurrence of spontaneous, refractory epistaxis in a patient with preeclampsia and HELLP syndrome, emphasizing significance of multidisciplinary collaboration and timely intervention in managing atypical hemorrhagic complications in pregnancy.

2. Case Presentation

A 31 - year - old primigravida at 33+3 weeks with a known history of chronic hypertension since 12 weeks gestation (on labetalol 100 mg BD and Nifedipine 10 mg BD) admitted for induction of labour due to preeclampsia and HELLP syndrome. Following Gastroenterology and hematology clearance, induction was initiated using prostaglandin E2 gel.

During the latent phase of labour, her blood pressure spiked to 170/110 mmHg. She subsequently developed spontaneous epistaxis. Immediate management included:

- Tablet Nifedipine 20 mg
- Initiation of MgSO₄ (Zuspan regimen)
- IV Labetalol 20 mg over 20 minutes

Despite these measures, BP remained elevated (170/110 mmHg). ENT consultation was sought. Trotter's method and Inj. Tranexamic acid 1 g IV failed to relieve the epistaxis.

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Anterior nasal packing was attempted but was ineffective. A total of 80 mg IV labetalol was administered.

In view of persistent bleeding and non-reassuring fetal status, the patient underwent emergency lower segment caesarean section under general anesthesia. Intraoperatively, 6 RDPs, 1 PCV, and 1 FFP were transfused. Postoperatively, epistaxis continued; she was not extubated and was transferred to the ICU.

Laboratory parameters:

- Pre-op: Hb 13.6 g/dL, WBC 18,000, Platelets 60,000
- Post-op: Hb 7.3 g/dL, WBC 19,400, Platelets 69,000
- DIC profile: Normal

A cumulative transfusion of 4 RDPs, 4 PCVs, and 1 FFP was given during ICU stay. Given ongoing nasal/oral bleeding due to uncontrolled hypertension (BP 200/100 mmHg), both anterior and posterior nasal packing was done in ENT Operation Theatre. She received 6 RDPs, 6 FFPs, and 4 PCVs during this period.

Antihypertensive management included:

- NTG drip (titrated at 15 ml/hr)
- IV labetalol infusion (5 mg/hr)
- Oral labetalol 200 mg TDS
- Nicardipine 20 mg QID

Inj. MgSO₄ was continued till 24 hours post-delivery by Zuspan regimen. Following 48 hours, nasal packs were removed in OT. There was no recurrence of epistaxis with control of hypertension. The patient was slowly weaned from ventilation and inotropes and was shifted to the ward.

A single episode of nasal spotting was noted, determined by ENT and chest medicine to originate from the upper respiratory tract. Treatment included saline nasal spray, Hemocoagulase nasal drops SOS.

Echocardiography revealed a trileaflet aortic valve with no structural abnormality and Ejection fraction of 60%. Lipid profile was deranged; dietary advice was given. The patient was discharged on dual oral antihypertensives after multidisciplinary clearance.

3. Discussion

Hypertensive disorders of pregnancy, including gestational hypertension, preeclampsia, and HELLP syndrome, affect approximately 5–10% of all pregnancies and remain a leading cause of maternal and perinatal morbidity and mortality worldwide [1, 2]. Preeclampsia is a multisystem disorder that typically manifests after 20 weeks of gestation and may involve severe hypertension, renal impairment, hepatic dysfunction, and hematologic abnormalities [3, 4]. HELLP syndrome, a severe form of preeclampsia, is defined by hemolysis, elevated liver enzymes, and low platelet count, and is associated with increased risk of maternal complications including disseminated intravascular coagulation, placental abruption, and organ failure. [4, 5]

Epistaxis, or nasal bleeding, is a relatively common occurrence in pregnancy, often attributed to hormonal changes that increase mucosal vascularity and capillary

fragility. [6] However, severe and refractory epistaxis in the setting of preeclampsia or HELLP syndrome is rare, and may represent a more serious underlying hemostatic imbalance or vascular insult. [7–9] In our patient, spontaneous epistaxis developed in association with uncontrolled blood pressure and thrombocytopenia. The presence of HELLP syndrome may have contributed to increased mucosal vessel fragility and impaired clotting function, despite normal DIC profile, highlighting the complex interplay of endothelial dysfunction and platelet consumption in this condition [5, 10].

Only a few case reports have described epistaxis as a significant clinical complication in hypertensive pregnancies. Bakhshi et al. and Prabhu et al. have reported cases where nasal bleeding was persistent and unresponsive to standard measures, necessitating ENT intervention and hemodynamic stabilization [7, 8]. Our patient required aggressive blood pressure management using labetalol and nitroglycerin infusions, magnesium sulfate for seizure prophylaxis, and anterior and posterior nasal packing under general anesthesia. Such escalation in care underscores the potential severity of this uncommon presentation.

Management of epistaxis in pregnancy should not be delayed, particularly in women with hypertensive disorders, as it may indicate vascular instability and carry the risk of significant maternal morbidity. Multidisciplinary collaboration between obstetricians, ENT surgeons, anesthesiologists, and intensivists is essential in such cases to achieve optimal outcomes. [3, 7]

Furthermore, HELLP syndrome is frequently associated with abnormal coagulation profiles and increased transfusion needs [11]. In this case, transfusion of platelets, packed cells, and fresh frozen plasma was necessary to stabilize the patient. It is also important to recognize that postpartum recovery in such cases must include careful monitoring of blood pressure, organ function, and signs of bleeding, as recurrence or delayed complications are possible. [2, 12]

This case reinforces that severe epistaxis, although rare, may serve as an early warning sign of underlying hypertensive or coagulopathic crisis in pregnancy. Clinicians should maintain a high index of suspicion and act promptly to ensure maternal and fetal safety.

4. Conclusion

This case emphasizes that epistaxis, although rare, should be recognized as a possible complication in hypertensive pregnancy, especially with HELLP syndrome. Early ENT intervention, aggressive BP control, and coordinated multidisciplinary care are crucial to prevent morbidity.

Patient Consent: The patient provided written, informed consent for this case report to be published.

Conflict of Interest: The authors declare no conflict of interest.

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