CASE REPORT

Torrential epistaxis in the third trimester: a management conundrum

Rosa Elizabeth Mary Crunkhorn,¹ Alistair Mitchell-Innes,² Jameel Muzaffar³

¹Queen Elizabeth Hospital, Birmingham, UK

²Department of ENT, Shrewsbury and Telford Hospitals, Telford, UK

³Department of Ear, Nose and Throat Surgery, Burton Hospital NHS Foundation Trust, Burton upon Trent, UK

Correspondence to
Alistair Mitchell-Innes,
alistair.mitchell-innes@nhs.net

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SUMMARY

Although epistaxis is common during pregnancy, large volume epistaxis is rare. Many standard epistaxis management options are limited in pregnancy due to absolute or relative contraindications. Ear, nose and throat surgeons need to be aware of what options can be used safely and effectively. We present a case of a 32-year-old woman, 32 weeks pregnant, who was admitted with heavy epistaxis refractive to conservative management. Several potential interventions including bismuth iodoform paraffin paste (BIPP) and Floseal were contraindicated or involved additional risk in pregnancy necessitating unorthodox management. This challenging case highlights suitable alternatives for managing large volume epistaxis during pregnancy, as well as discussing the differential diagnosis and relevant investigations.

BACKGROUND

Small volume epistaxis is common in pregnancy, affecting approximately 20% of women compared with 6% of the non-pregnancy age-matched female population.¹ Large volume epistaxis, however, is very unusual in pregnancy for patients without pre-existing risk factors or conditions, such as concurrent use of anticoagulants or pre-existing clotting disorders. Owing to this, there is a lack of familiarity regarding appropriate management options of heavy epistaxis in pregnant patients, as many potential treatment modalities are contraindicated or carry additional risks in pregnancy.

We hope that our experience with this challenging case and our exploration of potential management options may help others when faced with similarly challenging clinical situations.

CASE PRESENTATION

A 32-year-old woman who was 32 weeks pregnant presented with spontaneous onset heavy left-sided epistaxis. Her medical history was unremarkable other than for gestational diabetes treated with metformin. One previous pregnancy was unremarkable and featured no epistaxis. She had no known drug allergies. Routine blood tests were normal on admission with haemoglobin 130 g/L, platelet count 309 and International Normalised Ratio 0.8 on admission.

The bleeding was refractive sequentially to silver nitrate cautery, anterior packing with Merocel packs, posterior packing with a Foley catheter and anterior packing with paraffin-soaked ribbon gauze, over a 2-day period. No bleeding point was identified during this time, despite efforts of the on call Senior House Officer and Registrar. Haemoglobin dropped from 130 on admission to 69 g/L.

Following obstetric review, emergency theatre was planned for examination under anaesthesia of the nose and arrest of haemorrhage.

Operative findings were of profuse bleeding from the middle meatal area with generally inflamed and traumatised nasal mucosa. Pre-operative nasal preparation included topical lidocaine 2% with epinephrine. A sphenopalatine artery (SPA) ligation was attempted by a consultant ear, nose and throat surgeon, but bleeding was too profuse to proceed. Bipolar cautery was performed to mucosa around the SPA, the nose repacked with paraffin gauze, and a posterior nasal space pack placed. Following transfusion of four units of red blood cells haemoglobin stabilised at 100 g/L.

The obstetric team continued to review with twice daily cardiotocographs and daily blood tests monitoring for pre-eclampsia and HELLP syndrome (named for 3 features of the disease; Hemolysis, Elevated Liver enzyme levels, and Low Platelet levels). Fortunately there were no obstetric complications.

The posterior nasal space pack was removed 2 days later on the ward and was initially dry, but bleeding restarted later that same day. Theatre was arranged again and obvious bleeding from within the SPA territory was noted and arrested with bipolar diathermy. Nasopore packs were inserted bilaterally and a left-sided posterior nasal space pack placed.

Over the next few days, there were several small episodes of blood and clots but no bleed of significant volume. The packs were removed 5 days later and the patient was discharged home the following day with Naseptin cream and ferrous sulfate.

OUTCOME AND FOLLOW-UP

On follow-up in clinic 2 weeks later, the patient remained well with no reports of further bleeding. She underwent an elective C-section 1 month later giving birth to a healthy baby.

DISCUSSION

Epistaxis is a common problem in pregnancy with one in every five women experiencing at least two nosebleeds in pregnancy.¹ It is usually a relatively minor problem that is easily managed with conservative measures.^{2 3} However, if conservative measures fail, epistaxis in pregnancy can be a complex problem and has a distinct differential diagnosis.⁴ Rarely, life-threatening cases have been reported requiring operative management and even urgent delivery of the baby due to maternal and fetal compromise.^{2 3 5 6} There is limited evidence regarding the management of severe epistaxis in pregnancy, complicated by the fact that certain products are contraindicated.

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Table 1 Treatment options for epistaxis in pregnancy

Silver nitrate cautery	Not possible in this case due to volume of haemorrhage but potentially viable in pregnancy
Anterior nasal packing (eg, Merocel or Rapid Rhino packs)	Suitable for pregnant individuals
bismuth iodoform paraffin paste (BIPP)-soaked ribbon gauze	Contraindicated in pregnancy
Paraffin-soaked gauze	Suitable for pregnant individuals
Posterior nasal packs (eg, Brighton balloon, Foley catheter)	Suitable for pregnant individuals
Floseal haemostatic matrix	Producer (Baxter Pharmaceuticals) contacted—no data for use in pregnancy so manufacturer advises to avoid
Sphenopalatine artery ligation	Risks of general anaesthetic in pregnancy Low-risk surgical procedure
Anterior ethmoidal artery ligation	Risks of general anaesthetic in pregnancy Low-risk surgical procedure
Posterior ethmoidal artery ligation	Risks of general anaesthetic in pregnancy Low-risk surgical procedure
Radiological embolisation	Risks unquantified but include risk of cerebrovascular accident and potential loss of fetus

Hormonal changes during pregnancy alter nasal physiology, with oestrogen causing vascular congestion, mucosal oedema and rhinitis, known as the ‘rhinitis of pregnancy’,^{2–7} affecting 20% of pregnant women.^{3–8} Progesterone causes an increase in blood volume, which may both exacerbate vascular congestion and hence bleeding, and may mask blood loss in the event of severe epistaxis due to apparently effective cardiovascular compensation.^{2–6} Placental growth hormone has systemic effects including vasodilation.² Indirect hormonal effects include vascular inflammatory and immunological changes that may predispose to nasal hypersensitivity and hence to problems such as nasal granuloma gravidarum.²

In addition to hormonal changes, pregnancy-related coagulopathies can cause epistaxis, such as gestational thrombocytopaenia, idiopathic thrombocytopaenic purpura,⁹ HELLP syndrome,⁵ and even coagulopathy caused by vitamin K deficiency linked to hyperemesis gravidarum¹⁰ and extremely low dietary folic acid.¹¹

Nasal granuloma gravidarum is an uncommon rapidly growing bleeding lesion, which is histologically similar to a pyogenic granuloma or a lobular type of capillary haemangioma.^{12–13} These are hormonally dependent and usually regress after pregnancy but can cause significant epistaxis. If symptoms of epistaxis and obstruction are significant or there are concerns over possible malignancy, they are best treated by surgical excision.^{12–13}

Treatment of severe epistaxis must always prioritise the safety of the mother with conservative measures first-line, followed by rapid escalation as needed.¹⁴ Effective resuscitation is paramount and may include the use of blood transfusions, which carry the usual risks of haemolytic reactions, isoimmunisation and infection transmission.⁹ Early involvement of the obstetric team is crucial, as well as involving haematology and anaesthetics as necessary.

Local treatment options include silver nitrate cautery or anterior packing with packs such as Merocel and Rapid Rhino, and are suitable as a first-line. In our patient, posterior packing was attempted, which again has no specific contraindication although it is advisable to monitor for hypoxaemia.² bismuth iodoform paraffin paste (BIPP) packing, which is commonly used in conjunction with posterior packing, however, is contraindicated in pregnancy. We used paraffin-soaked gauze as an alternative and the patient was given antibiotics. Many centres in the UK are also now using Floseal in epistaxis with promising results particularly in patients who are at high risk or unsuitable for surgery.¹⁵ If suitable this would be an ideal treatment option for epistaxis in pregnancy, but currently is advised against by manufacturers due to a lack of evidence of safety in pregnancy.

Given the topical nature of Floseal, and the low theoretical risk of harm to the fetus in the 3rd trimester, it could be argued that the benefits of using Floseal may have outweighed the risks in this case. However, a full and frank discussion with the patient about the risks and benefits and the manufacturer’s current advice would obviously be needed prior to use.

If packing fails, surgical management in the form of vessel ligation is usually carried out. In pregnancy this requires specific consideration due to the risk involved in administering a general anaesthetic. The effects of intravenous and inhaled anaesthetics on the fetus are not fully understood, however, there is known to be an increased risk of preterm labour, particularly during the first two trimesters of pregnancy.⁷ Other considerations include the need for a rapid sequence induction due to an increased risk of gastric aspiration and use of a left lateral tilt on the operating table to prevent aortocaval compression.⁶ Local anaesthetic and topical vasoconstrictor nasal preparation may be considered but should be used with caution due to the risk of systemic absorption causing decreased uterine blood flow.⁴ Issues with recreational cocaine use causing fetal problems are well known, therefore cocaine-based nasal preparations in particular should be avoided.⁴ Radiological embolisation may be considered in some cases but current guidance suggests only if absolutely necessary, due to the unknown risks of intravenous contrast on the fetus and the potential for contrast-induced neonatal hypothyroidism.⁷ Table 1 illustrates a summary of the available treatment options and any known contraindications in pregnancy.

Large volume epistaxis is uncommon in pregnancy. Management options are limited due to absolute or relative contraindications during pregnancy as discussed above. We presented this challenging case in the hope that our experience and exploration of potential management options may help others when faced with similarly challenging clinical situations.

Learning points

- ▶ Large volume epistaxis is unusual in pregnancy, particularly without pre-existing risk factors (eg, bleeding disorders or anticoagulant use).
- ▶ Several common management options for epistaxis are relatively or absolutely contraindicated in pregnancy.
- ▶ Management should be by a best interest principle following discussion with the patient.
- ▶ Early involvement of the obstetric team is crucial.

Competing interests None.

Patient consent Obtained.

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