Antepartum Haemorrhage

Antepartum haemorrhage (APH) is usually defined as bleeding from the birth canal after the 24th week of pregnancy.\(^1\) It can occur at any time until the second stage of labour is complete; bleeding following the birth of the baby is postpartum haemorrhage.

Bleeding before 24 completed weeks of pregnancy is miscarriage, which is discussed in the separate Miscarriage (Spontaneous Abortion) article.

Epidemiology

In the 2009-2012 UK and Ireland Confidential Enquiries into Maternal Deaths and Morbidities (MBRRACE) Report, the mortality rate due to obstetric haemorrhage, which also includes postpartum haemorrhage, was 4.9 per million maternities.\(^2\) There were three deaths due to APH: two followed placental abruption and one was from placenta praevia percreta. Worldwide, obstetric haemorrhage is responsible for 27% of all maternal deaths, most of which occur in low- and middle-income countries.\(^3\)

- It affects 3-5% of all pregnancies.\(^1\)
- Up to 20% of very preterm babies are born in association with APH, which explains the association between APH and cerebral palsy.

Aetiology\(^1\)

No definite cause is diagnosed in about 50% of all women who present with APH; however, placenta praevia and placental abruption are the major identifiable causes:

- Placenta praevia: insertion of the placenta, partially or fully, in the lower segment of the uterus. See separate Placenta Praevia article.
- Placental abruption: premature separation of a normally placed placenta. See separate Placenta and Placental Problems article.
- Local causes - eg, vulval or cervical infection, trauma or tumours.
- Partner violence is common in pregnancy, occurring in 2.8% of pregnant women in a Canadian population-based study.\(^4\) It may result in APH. Women should be asked about this, particularly if there are repeated episodes. See separate Domestic Violence article.
- Vasa praevia: bleeding from fetal vessels in the fetal membranes, leading to high risk of fetal haemorrhage and death at rupture of the membranes. See separate Placenta and Placental Problems article.
- Uterine rupture: rare but very dangerous for both mother and baby. See separate Uterine Rupture article.
- Inherited bleeding problems are very rare, occurring in 1 in 10,000 women.\(^5\)
- Whilst risk factors for APH, in particular for placenta praevia and placental abruption, have been identified, APH cannot be predicted; 70% of cases of placental abruption occur in low-risk pregnancies.
- There is limited evidence that APH can be prevented but women should be encouraged to change modifiable risk factors such as smoking and cocaine and amphetamine abuse.
- Antenatal anaemia should be investigated and treated. Iron-deficiency anaemia not only reduces a woman’s tolerance to bleeding but may also contribute to uterine atony.\(^2\)

Presentation

- Bleeding, which may be accompanied by pain (suggestive of abruption) or be painless (suggesting praevia).
- Uterine contractions may be provoked.
There may be malpresentation or failure of the fetal head to engage, with placenta praevia.

There may be associated signs of fetal distress.

If the bleeding is severe, the mother may show signs of hypovolaemic shock; however, young, fit, pregnant women can compensate very well until sudden and catastrophic decompensation occurs.\(^2\)

**Management**\(^1\)

Always admit the patient to hospital for assessment and management, even if bleeding is only a very small amount; there may be a large amount of concealed bleeding with only a small amount of revealed vaginal bleeding. Phone 999/112/911 if there are any major concerns regarding maternal or fetal well-being.

- Estimate amount of blood loss. This is often underestimated and needs to combined with an assessment of signs of clinical shock:
  - Minor haemorrhage = blood loss <50 ml and has stopped.
  - Major haemorrhage = blood loss 50-1000 ml with no signs of shock.
  - Massive haemorrhage = blood loss >1000 ml and/or signs of shock.

- The mainstays of management of massive haemorrhage are effective communication between clinical staff, resuscitation, monitoring and accurate diagnosis of the underlying cause. The bleeding will be arrested by delivery of the fetus.
- Severe bleeding: the mother's life should take priority. Any decision regarding the delivery of the baby should wait until the mother's condition is stable.
- Fetal distress: urgent delivery of the baby, irrespective of gestational age. Fetal compromise is an important indicator of reduced circulating blood volume.
- No vaginal examination should be attempted, at least until a placenta praevia is excluded by ultrasound. It may initiate torrential bleeding from a placenta praevia.
- Resuscitation can be inadequate because of underestimation of blood loss and misleading maternal response, especially in small women. For example, a woman who weighs 55 kg will have lost almost 30% of her blood volume if she loses 1500 ml of blood, whereas for a woman of 70 kg, this represents about 20% of her blood volume.\(^2\)

**Blood tests:**
- FBC and 'group and save'. \textbf{NB}: initial Hb may not reflect degree of blood loss. Low platelet count may suggest significant abruption.
- Clotting studies, if platelet count is abnormal, as coagulopathy is common and should be anticipated.
- Crossmatch four units and check U&Es and LFTs, if there is major or massive haemorrhage.

- Gentle palpation of the abdomen to determine the gestational age of the fetus, presentation and position.
- Fetal monitoring.
- Arrange urgent ultrasound to exclude placenta praevia; ultrasound cannot exclude placental abruption, which is a clinical diagnosis.
- With every episode of bleeding, a rhesus-negative woman should have a Kleihauer test and be given prophylactic \textit{anti-D immunoglobulin}.\(^6\)
- Maternal corticosteroids should be offered to any woman at risk of preterm birth, who is between 24\(^{+0}\) and 35\(^{+6}\) weeks of gestation.\(^7\)

**Further management**
- Further management will depend on fetal distress, the cause of the APH, the extent of bleeding and gestation.
- All women need to be assessed individually, taking into account not only the amount of blood loss but also any relevant current or past medical and obstetric history.
- Placenta praevia: see separate \textit{Placenta Praevia} article.
- Moderate or severe placental abruption: see separate \textit{Placenta and Placental Problems} article.
Complications

- Premature labour.
- Disseminated intravascular coagulopathy.
- Acute kidney injury.
- Postpartum haemorrhage.
- Placenta accreta: this may complicate cases of placenta praevia but is rare in the absence of placenta praevia or previous caesarean section. See separate Placenta and Placental Problems article.
- Anaemia.
- Infection.
- Prolonged hospital stay.
- Psychological sequelae.
- Fetal complications:
  - Fetal hypoxia.
  - Fetal growth restriction.
  - Prematurity, both iatrogenic and spontaneous.
  - Fetal death.

Prognosis

- One population-based study found that bleeding in the second half of pregnancy is an independent risk factor for perinatal mortality.\(^9\)
- Maternal mortality is low if managed by an experienced obstetrician and if no vaginal examination is performed before admission to hospital.
- Perinatal mortality is 119 per 1,000 births complicated by abruption.\(^10\)
- In pregnancies when the cause of APH is not known, there is still a greater risk of preterm delivery and induced labour but no increase in perinatal mortality after adjusting for gestational age.\(^11\)

Further reading & references

1. Antepartum Haemorrhage; Royal College of Obstetricians and Gynaecologists (December 2011)
6. BCSH guideline for the use of anti-D immunoglobulin for the prevention of haemolytic disease of the fetus and newborn; British Committee for Standards in Haematology (Jan 2014)
7. Antenatal Corticosteroids to Reduce Neonatal Morbidity and Mortality; Royal College of Obstetricians and Gynaecologists (October 2010)
8. Placenta Praevia, Placenta Praevia Accreta and Vasa Praevia: Diagnosis and Management; Royal College of Obstetricians and Gynaecologists (January 2011)

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