

South Australian Perinatal Practice Guidelines

Antepartum haemorrhage or bleeding in the second half of pregnancy

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Antepartum haemorrhage (APH) definition

- > Antepartum haemorrhage is defined as bleeding from the genital tract after the 20th week of pregnancy and before the onset of labour
- > Occurs in approximately 2-5 % of pregnancies (Navti & Konje 2011)

Causes

- > **Placenta praevia**
- > **Abruptio placentae**
- > **Distal genital tract / gynaecological bleeding**
- > **Unclassified bleeding**
- > **Abnormal placentation**
- > **Abnormal placental shape**
- > **Vasa praevia**

Initial assessment

If the woman is Haemodynamically unstable call for medical assistance and commence resuscitation following ABC (see flow chart)

- > Assess woman's condition
- > Obtain baseline maternal and fetal observations

History

- > Any bleeding throughout pregnancy, other relevant history (e.g. postcoital, trauma, exertion, cervical pap smear results if available), estimated date of delivery
- > Check last ultrasound (if available) for location of placenta

Maternal assessment

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ABC

- > Assess airway and breathing (may be compromised if severely hypotensive)
- > Apply oxygen at 8 litres via CIG or Hudson mask (variable performance) as required
- > Obtain **IV access** (x 2 if haemodynamically unstable)
- > Consider gentle abdominal palpation for fundal height, lie and presentation
- > **Ultrasound** for placental location (portable and/or formal)
- > **Blood loss** - Note the amount, colour, consistency, pattern and time of bleeding. Weigh pads, linen etc for ongoing accurate estimation of blood loss
- > **Pain** - Note patterns of pain including site, commencement, frequency, strength and duration
- > **Uterine activity** - Assess if tightenings or contractions present. Ask if contractions are painful, is pain associated with bleeding
- > **Uterine consistency** - Assess if soft, tense, tender or non-tender
- > **Bloods** - Complete blood picture, Group & Save (X-match 4 units if heavy bleeding), coagulation profile, Kleihauer if Rh negative
- > **IV fluids** as required to replace ongoing blood loss
- > **Speculum examination ONLY** – until placenta praevia excluded. Consider cervical Pap smear if one has not been done in the last three months and there is evidence of cervical bleeding
- > **Consider corticosteroids**
- > **Anti-D** if Rhesus (D) negative

Fetal wellbeing

- > Assess fetal wellbeing, commence CTG (depending on gestation)

Placenta praevia

Definition

- > Placenta is inserted wholly or partially in the lower uterine segment (RCOG 2011)

Classification

- > Placenta praevia is classified by ultrasound imaging according to what is relevant clinically:
 - > Major praevia: the placenta lies over the internal cervical os
 - > Minor or partial praevia: the leading edge of the placenta is in the lower uterine segment but not covering the cervical os (RCOG 2011)

Incidence

- > Approximately 0.5 %

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- > Only 10 % of low lying placentas identified at the 16-20 week ultrasound will remain low at term (Bricker, Neilson 2003)
- > The major causes of maternal and perinatal mortality and morbidity with placenta praevia are haemorrhage and (often elective) preterm birth

Risk factors

- > Large placental area e.g. multiple pregnancy
- > Advanced age
- > High parity
- > Deficient endometrium due to pre-existent
 - > Uterine scar (previous caesarean section)
 - > Endometritis
 - > Manual removal of placenta
 - > Curettage (especially for miscarriage or termination of pregnancy)
 - > Submucous fibroid
- > Placenta praevia with an anterior placenta and previous caesarean section significantly increases the risk of placenta accreta
- > Perinatal mortality and morbidity are proportional to how much of the placenta is placed centrally over the internal cervical os, i.e. how much of the placenta is adherent to the lower uterine segment
- > 16 % of cases of placenta praevia are associated with IUGR (especially in case of multiple episodes of bleeding) (Navti & Konje 2011)

Clinical features

- > Painless vaginal bleeding, usually bright red, but variable amount
- > Uterine tenderness and irritability unusual
- > Fetal malpresentation or unusually high and mobile presenting part
- > May be an incidental ultrasound finding

Management

Expectant management

- > Expectant management refers to delivery delayed more than 24 hours from time of diagnosis. The objective is to prolong pregnancy to achieve fetal maturity while minimising maternal and fetal risks

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Place of care

- > If no or minimal bleeding the woman may be managed as an outpatient
 - > Explain the frequency and severity of recurrent bleeding is unpredictable and carries the risk of fetal and maternal complications
 - > Counsel to seek immediate hospital care if contractions or vaginal bleeding occur
 - > Ensure emergency transport access to hospital
- > Admit if active bleeding

Bloods

- > If inpatient, weekly complete blood picture and Group and Save (twice weekly if previously transfused) for optimisation of haemoglobin
- > Consider need for Anti-D

Correction of anaemia

- > Consider iron supplementation for optimal correction of anaemia
- > Stool softeners and high fibre diet to minimise constipation and avoid excess straining
- > Blood transfusion may be indicated

Ultrasound

- > Ultrasound every 2 weeks for fetal growth and placental location (colour Doppler ultrasound late in the third trimester to reassess the placental site / exclude Vasa Praevia)

Tocolysis

- > Some medical experts consider APH a contradiction to the use of tocolytics. If the judgement is that contractions are contributing to the bleeding from placenta praevia tocolysis may have a role in suppressing those contractions

Corticosteroids

- > Consider corticosteroid prophylaxis

Timing and mode of delivery

- > Elective caesarean section at 37 weeks gestation if remains stable

Active bleeding

- > Intravenous access and fluids
- > Resuscitate with adequate fluid replacement in relation to ongoing measured blood loss
- > Consider blood transfusion if signs of hypovolaemic shock or severe anaemia to optimise oxygen supply to the fetus

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- > Continuous electronic fetal monitoring to assess for signs of fetal compromise
- > An abnormal fetal heart rate may suggest some degree of placental abruption or vasa praevia
- > Consider rare but important vasa praevia (bleeding from vasa praevia mostly occurs in association with rupture of the membranes, the blood is of fetal origin, and the diagnosis is mostly made after signs of fetal compromise)
- > May use haemoglobin alkaline denaturation test (Apts test) to distinguish fetal from maternal blood loss
- > *No digital examination of the cervix except in a theatre prepared for caesarean section*
- > Depending on gestational age consider transfer to a centre with appropriate neonatal care facilities once condition is stable
- > If bleeding continues, but is neither profuse nor life-threatening and the gestation is more than 34 weeks, delivery is preferred after resuscitation is initiated
- > Examination in theatre may be indicated

Bloods

- > Complete blood picture, APPT and D-Dimer
- > Group and cross match 4 units red blood cells
- > Consider need for Anti-D

Ultrasound

- > Confirm diagnosis

Corticosteroids

- > Consider corticosteroid prophylaxis

Neonatology consult

- > Where appropriate (approximately 40 % will deliver before 37 weeks)

Anaesthetic consult

- > Arrange anaesthetic consult for assessment and consideration of the mode of anaesthesia. General anaesthesia may be necessary for ongoing bleeding or where major surgical bleeding is likely to occur, e.g. placenta accreta. This decision will depend on a variety of factors including degree or risk of bleeding, the woman's wishes and the preference of the anaesthetist

Ongoing management

- > Intravenous access
- > Consider need for prolonged hospitalisation
- > Maintain maternal haemoglobin
- > Consider social work consult
- > Advise woman to avoid intercourse
- > Aim to defer delivery until fetal maturity is reached
- > Obtain pre-operative consent from the woman for caesarean hysterectomy if required

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- > Experienced obstetrician must be present at delivery
- > There is an increased risk of post partum haemorrhage (PPH)

Abruptio placenta

Definition

- > Refers to bleeding due to the untimely separation of a normally sited placenta from its attachment to the uterus (Neilson 2003)

May be described as

- > Concealed
- > Revealed
- > Mixed

Incidence

- > Varies between 0.5-1.5 % of births
 - > Concealed in 20-35 %
 - > Revealed in 65-80 %
- > Perinatal mortality rate of 119 per 1000 (Neilson 2003)

Risk factors

Independent associations may occur with:

- > Severe IUGR
- > Prolonged rupture of membranes (especially early preterm prelabour rupture of the membranes)
- > Chorioamnionitis
- > Hypertension
- > Maternal thrombophilias
- > Increasing maternal age, attributed to parity
- > Cigarette smoking
- > Abdominal trauma e.g. motor vehicle accident

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- > Substance abuse (crack, cocaine, amphetamines)
- > Sudden decrease in uterine volume (e.g. SROM in the presence of polyhydramnios, or after delivery of a first twin)
- > External cephalic version (ECV)

Diagnosis

- > 50 % of women with placental abruption are in established labour
- > Diagnosis is usually made on clinical presentation
- > Ultrasound may be helpful if there is a large retroplacental haematoma
- > In mild cases, the diagnosis may not be obvious until after delivery, when a retroplacental clot is identified
- > Placental abruption causes vaginal bleeding (usually dark and non-clotting) associated with abdominal pain, uterine contractions, tenderness and / or irritability
- > May be faint and / or collapse
- > Signs of haemorrhagic shock
- > Consider concealed abruption if abdominal or back pain is present

Strongly associated with:

- > Preterm labour
- > Signs of fetal compromise and uterine irritability (contractions > 5 in 10 minutes) on CTG

Observe for

- > Clinical and haematological signs of disseminated intravascular coagulopathy
- > Be aware of increased risk of PPH

Management

Continuous assessment for early signs of maternal / fetal compromise allows early intervention that may be lifesaving

- > Intravenous (IV) access x 2
- > Indwelling catheter
- > Close maternal observations, commence fluid balance chart
- > Continuous electronic fetal monitoring to assess for signs of fetal compromise
- > Adequate resuscitation with intravenous fluids (plasma volume expanders, blood)
- > Group and cross match
- > Early consultation with anaesthetist / haematologist as indicated
- > Urgent complete blood picture, INR, APPT, D-dimer, thrombin time, fibrinogen levels, creatinine
- > Consider pre-eclampsia (link to [Hypertension in pregnancy](#))
- > May consider urine drug screen

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- > Anti D prophylaxis for Rh negative women

Delivery

- > Caesarean section if acute fetal compromise or other obstetric indications
- > Consider vaginal delivery with continuous electronic fetal monitoring and rapid recourse to caesarean section
- > Often precipitate labour (especially if multiparous)

If there is fetal death

- > Aim for vaginal delivery with ARM and oxytocin (Syntocinon®) when condition stable

Following delivery:

- > Recognise increased risk of PPH

Placental examination for:

- > Completeness
- > Any area of abruption
- > Associated pathological features e.g. abnormal degree of calcification
- > Send for histopathology

Conservative management:

In selected cases of very preterm small abruptions in the absence of fetal compromise:

- > Administer maternal corticosteroids
- > Neonatology consultation
- > Observe for further bleeding
- > Maintain maternal haemoglobin levels
- > Maternal and fetal observations as indicated (intensive electronic fetal monitoring, regular umbilical artery Doppler)
- > Monitor for IUGR
- > Discuss with woman need for hospital or home care

Distal genital tract / gynaecological bleeding

- > Speculum examination is indicated to inspect the genital tract
- > Swabs, papanicolaou smear may be helpful in diagnosis

Cervical

- > Heavy show / onset of labour
- > Carcinoma
- > Benign polyps
- > Ectropion / inflammation
- > Cervical malignancy requires consultation with a gynaecological oncologist to plan time of delivery

Vaginal

- > Tumours e.g. condylomata
- > Inflammation
- > Trauma * consider domestic violence

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Vulva

- > Varicosities
- > Trauma * consider domestic violence
- > Tumour
- > Inflammation

Non-genital tract

- > Haematuria
- > Rectal

Unclassified bleeding

- > More often painless
- > Commonly due to marginal haemorrhage from the edge of the placental insertion site (marginal haemorrhage)
- > Sometimes a circumvallate placenta (see below)
- > Sometimes associated with perinatal morbidity and mortality if associated with preterm birth
- > Monitor fetal growth by ultrasound
- > Anti D prophylaxis for Rh negative women

If there is no growth restriction or other pathology and a single mild episode, there is no evidence that elective delivery is needed at or before 40 weeks

Abnormal placentation

- > Normal placental implantation involves invasion of the trophoblasts into the decidual layer lining the endometrial cavity as well as into some of the uterine vasculature (Ozcan, Pressman 2008)
- > Abnormal placentation is where the trophoblasts continue to invade into the myometrial layers (Ozcan, Pressman 2008)

Types:

Placenta Accreta

- > Abnormal adherence of placenta with no plane of separation

Placenta Increta

- > Placenta penetrates into the myometrium

Placenta Percreta

- > Whole thickness of myometrium is invaded up to the serosal surface or beyond

Causes:

- > Implantation over previous caesarean section scar

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- > Manual removal of placenta after a previous pregnancy
- > Placenta praevia
- > Previous vigorous or repeated curettage (particularly postpartum)
- > Previously treated intrauterine synechiae (adhesions)
- > Presence of submucous myomata
- > Pregnancy in uterine diverticulum

Incidence

- > Placenta accreta increases with
 - > The number of previous caesarean sections
 - > Previous caesarean section with a placenta that is anterior, low lying or praevia in the current pregnancy
 - > Maternal age (Ozcan, Pressman 2008)

Management

- > If densely adherent placenta, do not try to remove
- > Remove any non-adherent portions of the placenta
- > Trim cord
- > Observe closely – [antibiotics](#) if indicated
- > In the woman who is stable, hysterectomy may be avoided by the use of methotrexate [see references] (Gupta, Sinha 1998; Flam et al. 1999; Nijman et al. 2002)
- > The woman may need uterine artery embolisation, a hysterectomy or ligation of internal iliac arteries

Abnormal placental shape

Circumvallate and circummarginate placentas

Circumvallate placenta

- > Abnormality of placental shape resulting from chorioamniotic membrane insertion toward the centre rather than the edge of the placenta
- > Features include
 - > An irregular edge
 - > An uplifted margin or a placental sheet or shelf resulting from the infolding of the fetal membrane upon the fetal surface of the placenta (plication) during the middle of the second trimester

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- > The thickened ridge of tissue can be accompanied by haemorrhage or infarction
- > Associated with increased risk for placental abruption, preterm birth, preterm rupture of the membranes (Ozcan, Pressman 2008)

Circummarginate placenta

- > When no plication of the membranes occurs, it is called a circummarginate placenta (Baergen 2011)

Multilobate placentas

Bilobed placenta

- > Two roughly equal sized placental lobes are separated by a segment of membranes and the umbilical cord may insert in either of the lobes, or more commonly, in a velamentous fashion, in between the lobes (Baergen 2011)
- > There are always membranous vessels connecting the two lobes. If one lobe is much smaller than the other, the placenta is said to have a succenturiate or accessory lobe
- > As the membranous vessels are devoid of Wharton's jelly, they are susceptible to damage from compression, rupture, or thrombosis and may occasionally present as vasa praevia with bleeding (Baergen 2011)

Succenturiate lobe

- > The presence of one or more small lobes of placental tissue located in the membrane at a distance to the main placenta. The umbilical cord most commonly inserts into the dominant lobe. A placental artery and vein extend from and within the membrane of the main placenta to each lobe then divide into smaller vessels supplying individual cotyledons
- > They differ from bilobed placentas only in the size and number of accessory lobes
- > Approximately one half are associated with infarction or atrophy of the succenturiate lobe/s
- > Increased incidence of velamentous insertion of the umbilical cord and vasa praevia
- > Bilobed and succenturiate lobe placentas are more common in twins and multiparous women and in pregnancies conceived via assisted reproductive technology
- > Complications associated with multilobed placentas include fetal compromise, antenatal bleeding, postpartum haemorrhage, placenta praevia and risk of infection in cases of retained placental tissue (Baergen 2011)

Vasa praevia

- > Vasa praevia describes fetal vessels coursing through the membranes over the internal cervical os and below the fetal presenting part, unprotected by placental tissue or the umbilical cord.
 - > Vasa praevia type 1: Secondary to a velamentous cord insertion in a single or bilobed placenta
 - > Vasa praevia type 2: Arises from fetal vessels running between lobes of a placenta with one or more accessory lobes (RCOG 2011)
- > Vasa praevia is rare with a reported incidence varies between 1:2000 and 1:6000

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- > Vasa praevia is of no major maternal risk, but carries a high risk of fetal mortality from exsanguination (58 – 73 %), particularly at the time of membrane rupture (fetal blood volume at term is approximately 250 mL)
- > Even in the absence of bleeding, vessel compression may result in compromise of the fetal circulation (Zeltzer 2008)

Risk factors

- > Bilobed placenta
- > Invitro fertilisation
- > Low lying placenta
- > Multiple pregnancy
- > Succenturiate lobe
- > Velamentous insertion of the cord

Clinical presentation

- > Advances in imaging techniques (colour Doppler, transvaginal ultrasound) have improved antenatal detection rates. Vasa praevia may occur where a low-lying or even placenta praevia “migrates” to be out of the lower segment but some fetal vessels continue to traverse the cervix or lower segment. The diagnosis is confirmed when umbilical arterial waveforms are documented at the same rate as the fetal heart rate
- > Usually presents in labour with the acute onset of fresh vaginal bleeding at the time of membrane rupture and subsequent fetal heart abnormalities such as decelerations, bradycardia, a sinusoidal trace or even fetal death
- > May also be detected during vaginal examination by palpation of the fetal vessels within the membranes during labour
- > If there is unexplained bleeding, an haemoglobin alkaline denaturation test (Apts test) or Kleihauer-Betke test can distinguish fetal from maternal red blood cells

Management

- > All women with a history of a low lying placenta require a colour Doppler ultrasound late in the third trimester to reassess the placental site
- > An antenatal diagnosis requires elective caesarean section
- > If the diagnosis of vasa previa is strongly suspected in the presence of fetal compromise in labour, or if haemorrhage is significant, [emergency caesarean section \(category I\)](#) is required, early notification of neonatal team, followed by neonatal resuscitation including volume replacement with O negative blood

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Abbreviations

ACOG	American College of Obstetricians and Gynecologists
APH	Antepartum haemorrhage
BCSH	British Committee for Standards in Haematology
CBP	Complete blood picture
CTG	Cardiotocograph
DNA	Deoxyribonucleic acid
FBS	Fetal blood sampling
FHR	Fetal heart rate
G&S	Group and save
HDN	Haemolytic disease of the newborn
IMVS	Institute of Medical and Veterinary Science
IU	International units
IUT	Intra uterine transfusion
LSCS	Lower segment caesarean section
MFM	Maternal Fetal Medicine
mL	Millilitre(s)
NHMRC	National Health and Medical Research Council
OD	Optical density
Rh	Rhesus factor
UK NSCPD	United Kingdom National Screening Committee Policy Database
USA	United States of America
USS	Ultrasound

Version control and change history

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1.0	07 June 04	01 Sept 08	Original version
2.0	01 Sept 08	17 Jan 12	Review
3.0	17 Jan 12	20 Feb 12	Review
4.0	20 Feb 02	06 Aug 12	Review
5.0	06 Aug 12	Current	

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Antepartum haemorrhage flow chart

