Placenta praevia

What is placenta praevia?[1]

Placenta praevia is an important cause of maternal and fetal morbidity and mortality. Placenta praevia and placental abruption are the most important causes of antepartum haemorrhage. Antepartum haemorrhage is defined as any vaginal bleeding from the 24th week of gestation until delivery.

The term **placenta praevia** should be used when the **placenta lies directly over the internal os**.

For pregnancies at more than 16 weeks of gestation the term **low-lying placenta** should be used when the **placental edge is less than 20 mm from the internal os** on transabdominal or transvaginal scanning (TVS).

Placenta accreta (morbidly adherent placenta) is a rare but important complication of placenta praevia. See the separate Placenta and Placental Problems article.

Epidemiology

Placenta praevia affects 0.3% to 2% of pregnancies in the third trimester and the incidence is rising with the increasing caesarean section rate[2] .

UK data suggest the incidence of placenta acreta is 1.7 per 10,000 births but increases to 577 per 10,000 births in women with both a previous caesarean delivery and placenta praevia[3] .

Risk factors for placenta praevia[4]

- Previous history of placenta praevia.
- Previous caesarean section (risk increases with each additional caesarean section).

- Advancing maternal age.
- Increasing parity.
- Smoking.
- Cocaine use during pregnancy.
- Previous spontaneous or induced abortion.
- Deficient endometrium due to past history of, for example, endometritis, manual removal of placenta, curettage.
- Assisted conception.

Placenta praevia symptoms

- It may be an incidental finding on routine anomaly ultrasound.
- Painless bleeding starting after the 28th week (although spotting may occur earlier) is usually the main sign:
    - Typically, it is sudden and profuse but usually does not last for long and so is only rarely life-threatening.
    - Women with placenta praevia are reported to be 14 times more likely to bleed in the antenatal period compared with women without placenta praevia.
- There may be some initial pain in a small number of cases with coincidental placental abruption.
- There is a risk of preterm delivery.
- In a small proportion of cases, less dramatic bleeding occurs or does not start until spontaneous rupture of membranes or onset of labour.
- High presenting part or abnormal lie; it may be impossible to push the high presenting part into the pelvic inlet. In 15% of cases the fetus presents in an oblique or transverse lie.
- Usually, there is no indication of fetal distress unless complications occur.

Placenta praevia diagnosis

Clinical suspicion should be high in any woman with vaginal bleeding after 20 weeks of gestation. Irrespective of previous imaging results, a high presenting part, an abnormal lie and painless or bleeding provoked by sexual intercourse are highly suggestive of a low-lying placenta but may not be present. The definitive diagnosis relies on determining the site of the leading edge of the placenta on ultrasound imaging:

- This may be low at the 20-week scan but 'apparent' migration occurs during the second and third trimesters, due to the development of the lower uterine segment:
    - Migration is less likely if the placenta is posterior or if there has been a previous caesarean section.
    - A review of 714 women found that, even with a partial praevia, there was a 50% chance of persistence leading to a caesarean delivery if there had been a previous uterine scar, compared with 11% chance if there was no scar.
    - Even in women with overlap of 25 mm, migration is still possible
- A follow-up ultrasound examination including a TVS is recommended at 32 weeks of gestation to diagnose persistent low-lying placenta and/or placenta praevia [1] .
- Cervical length measurement may assist management decisions in asymptomatic women with placenta praevia. A short cervical length on TVS before 34 weeks of gestation increases the risk of preterm emergency delivery and massive haemorrhage at caesarean section.
- A persistent low-lying placenta or placenta praevia at 32 weeks of gestation (in asymptomatic individuals), should have an additional TVS at around 36 weeks of gestation to inform discussion about mode of delivery.

- Pre-operative and/or intraoperative ultrasonography may be useful to precisely determine placental location and the optimal place for uterine incision.

- Other investigations will depend on context but may include FBC, group and cross-match, fetal monitoring.

Placenta praevia treatment[1]

Women with asymptomatic placenta praevia confirmed at the 32-week follow-up scan who are being managed at home should be encouraged to ensure they have safety precautions in place, including having someone available to help them as necessary and ready access to the hospital.

- Women with asymptomatic placenta praevia or a low-lying placenta in the third trimester should be counselled about the risks of preterm delivery and obstetric haemorrhage, and their care should be tailored to their individual needs.
- It should be made clear to any woman being treated at home in the third trimester that she should attend the hospital immediately if she experiences any bleeding, including spotting, contractions or pain (including vague suprapubic period-like aches).
- A single course of antenatal corticosteroid therapy is recommended between 34+0 and 35+6 weeks of gestation for pregnant women with a low-lying placenta or placenta praevia and is appropriate prior to 34+0 weeks of gestation in women at higher risk of preterm birth.
- Tocolysis may be considered for women presenting with symptomatic placenta praevia or a low-lying placenta for 48 hours to facilitate administration of antenatal corticosteroids, but if delivery is indicated based on maternal or fetal concerns, tocolysis should not be used in an attempt to prolong gestation.

Mode of delivery and timing

Placenta praevia and anterior low-lying placenta carry a higher risk of massive obstetric haemorrhage and hysterectomy. Delivery should be arranged in a maternity unit with on-site blood transfusion services and access to critical care.

- In women with a third trimester asymptomatic low-lying placenta, the mode of delivery should be based on the clinical background, and the woman's preferences, and supplemented by ultrasound findings, including the distance between the placental edge and the fetal head position relative to the leading edge of the placenta on TVS.
- Delivery timing should be tailored according to antenatal symptoms and, for women presenting with uncomplicated placenta praevia, delivery should be considered between 36+0 and 37+0 weeks of gestation.
- Late preterm (34+0 to 36+6 weeks of gestation) delivery should be considered for women presenting with placenta praevia or a low-lying placenta and a history of vaginal bleeding or other associated risk factors for preterm delivery.

If the placenta is transected during the uterine incision, immediately clamp the umbilical cord after fetal delivery to avoid excessive fetal blood loss.

If pharmacological measures fail to control haemorrhage, intrauterine tamponade and/or surgical haemostatic techniques should be used sooner rather than later. Interventional radiological techniques should also be urgently employed where possible. Early recourse to hysterectomy is recommended if conservative medical and surgical interventions prove ineffective.

Acute bleeding

See also the separate Antepartum Haemorrhage article.

Transfer the patient to hospital immediately.

DO NOT PERFORM A VAGINAL EXAMINATION, as this may start torrential bleeding in the presence of placenta praevia.

- Blood loss is assessed and cross-matched for possible transfusion.
- Resuscitation if indicated; the mother is the priority and should be stabilised prior to any assessment of the fetus.

- Appropriate surgical intervention may be required:
    - In severe bleeding, the baby is delivered urgently whatever its gestational age.
    - Hysterectomy should also be considered in severe cases.
- If immediate delivery is not likely, maternal steroids may be indicated in order to promote fetal lung development and reduce the risk of respiratory distress syndrome and intraventricular haemorrhage .

Placenta praevia complications

- Potentially fatal hypovolaemic shock resulting from severe antepartum, intrapartum or postpartum bleeding.
- Venous thromboembolism is associated with prolonged inpatient care and the hazards of prophylactic anticoagulation in women at high risk of bleeding.
- Rare: placenta accreta, increta and percreta
- Fetal haemorrhage, prematurity, intrauterine asphyxia or birth injury.

Prognosis

- A prospective study of 328 European women demonstrated the high maternal and neonatal morbidity associated with placenta praevia[5] :
    - 42.3% antepartum haemorrhage.
    - 7.1% postpartum haemorrhage.
    - 30% maternal anaemia.
    - 4% co-existing placenta accreta.
    - 5.2% hysterectomy.
    - 54.9% preterm birth.
    - 35.6% low birth weight <2500 g.
    - 1.5% fetal mortality.

- A 2020 retrospective study of >12,000 births observed that placenta praevia significantly increased ($P<0.05$) the risk of LBW and neonatal mortality [6] .
- A 2018 study also found maternal hemorrhagic morbidity was more common in women with praevia (19 vs 7%, aRR 2.6, 95% CI 1.9-3.5) [7] . Atony requiring uterotonics (aRR 3.1, 95% CI 2.0-4.9), red blood cell transfusion (aRR 3.8, 95% CI 2.5-5.7), and hysterectomy (aRR 5.1, 95% CI 1.5-17.3) were also more common with praevia. Additional findings also showed that for women with praevia, factors associated with maternal haemorrhage were pre-delivery anaemia, thrombocytopenia, diabetes, magnesium use, and general anesthesia.
- Maternal mortality secondary to haemorrhage is 0.58 per 100,000 maternities in the UK: there were three reported deaths between 2016-2018 due to placenta praevia or placenta praevia percreta [8] .

Further reading

- Huque S, Roberts I, Fawole B, et al; Risk factors for peripartum hysterectomy among women with postpartum haemorrhage: analysis of data from the WOMAN trial. BMC Pregnancy Childbirth. 2018 May 29;18(1):186. doi: 10.1186/s12884-018-1829-7.
- Jain V, Bos H, Bujold E; Guideline No. 402: Diagnosis and Management of Placenta Previa. J Obstet Gynaecol Can. 2020 Jul;42(7):906-917.e1. doi: 10.1016/j.jogc.2019.07.019.

Authored by:	Peer Reviewed by: Dr Colin Tidy, MRCGP	
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