ANTEPARTUM HAEMORRHAGE

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DEFINITION

Antepartum haemorrhage **(A.P.H.)** is defined as bleeding from the genital tract between 28 completed weeks of pregnancy to the birth of the baby.

INCIDENCE

A.P.H. occurs in between 2 to 5% of pregnancies.

TYPES

1) PLACENTA PRAEVIA

This occur when the placenta is implanted partially or wholly within the lower uterine segment (**INEVITABLE HAEMORRHAGE).**

2) ABRUPTIO PLACENTAE (PLACENTAL ABRUPTION)

This is the separation of a normally situated Placenta **(ACCIDENTAL HAEMORRHAGE).**

3) INCIDENTAL CAUSES

These are other causes of antepartum haemorrhage.

PLACENTA PRAEVIA

The placenta lies (is inserted) partially or wholly within the lower uterine segment. Haemorrhage is especially likely to occur when uterine contractions dilate the cervix, thereby applying shearing forces to the placental attachment to the lower segment, or when separation is provoked by unwise digital vaginal examination.

Grades

Placenta praevia is divided into **4 grades.**

Grade I- The placenta encroaches on the lower segment but does not reach the internal cervical os.

Grade II - The placenta does reach the edge of the cervix but does not cover it

Grade III - The placenta does cover the internal os of the cervix but would not do so at full cervical dilatation.

Grade IV - The placenta is symmetrically implanted in the lower segment so that it covers, or is judged would cover the internal os of the cervix at full dilatation. Each of these can be **"A"** or **"B**": that is if these occur in the **"anterior"** or **"posterior"** portion of the uterus. Grades III and IV are **major degrees** of placenta praevia and Grades I and II are **minor degrees**. However, for the purpose of management, Grade IIB is regarded as a major degree. Grade I **is marginal**, II- **Lateral**, III and IV are **central.**

Frequency / Incidence

Between 0.4 and 0.8 % of pregnancies.

Causes/ Associated Factors

The causes of placenta praevia are frequently unclear and the low site of implantation of the placenta may merely represent an accident of nature. There are generally accepted associated factors. These include:

1) Multiparous women.

2) Multiple pregnancies. This is as a result of the encroaching of the lower uterine segment by the larger placental mass.

3) Previous caesarean section. This can result in **placenta accreta.**

4) Previous uterine damage. This can result from previous caesarean sections, dilatation and curretage, spontaneous abortion and evacuation of the uterus for retained products of conception.

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Clinical features

1) Asymptomatic - This is ultrasound diagnosed.
2) Vaginal bleeding - This can be **slight, moderate or heavy**.

- The bleeding is usually painless (in the absence of labour).
- It may have been preceded by **several slight ' warning haemorrhages'**

The abdomen is usually soft and non-tender to palpation and the fetal heart can be heard. The presenting part of the baby is high or the lie oblique or transverse. Breech presentation is common. (A persistently high presenting part or variable lie should raise the suspicion of placenta praevia even in the absence of vaginal bleeding).

*Vaginal examination is totally contraindicated. This may provoke profuse bleeding.

Diagnosis

This can be:

1) Clinical.
2) Ultrasound.
3) Examination in theatre ("Double set-up").

Although ultrasound imaging has transformed the practical diagnosis of placenta praevia, there remain cases in which the final diagnosis is confirmed, or excluded by vaginal examination in the operating theatre. In these patients they are prepared for caesarean section. At vaginal examination, placenta praevia is checked for. If major placenta praevia is confirmed or bleeding occurs then a caesarean section is performed immediately.

Examination in the theatre is done:

- If ultrasound expertise is unavailable.
- The patient is bleeding actively to a degree that delay to arrange or perform an ultrasound would be dangerous.
- "Grey area" of ultrasound (Minor degree or a normal placenta).

Management If the patient is bleeding per vaginam.

- Resuscitation of the patient should be paramount.
  Establish an intravenous access, P.C.V. (Packed cell volume), cross-match 4 units of whole blood (which should then be always available) and admit the patient to the hospital.

- Fetal viability must be confirmed and then monitored regularly with **CTG** (Cardiotocography) and **USS** (Ultrasound)
  Ultrasound should be done fortnightly for placental position and fetal growth.
- Expectant management should be followed if haemorrhage is not severe
  and pregnancy has not reached 36-37 weeks. Post pone delivery until 37 weeks unless earlier intervention is indicated for fetal or maternal reasons.
- If bleeding continues make sure that the blood is maternal rather than fetal using **Apt's test**, which distinguishes between them on the basis that fetal haemoglobin is relatively resistant to denaturation.

- Check for fetal-maternal transfusion in **Rh-D-negative** women and give **Anti-D immunoglobulin** as necessary.
- If the diagnosis of significant placenta praevia is confirmed the patient
  Should remain in hospital.

Mode of delivery

At 36-37 week's presentation, a final ultrasound should be performed and acted upon:

A) Major degrees of placenta praevia should have a caesarean section between 37 and 38 weeks gestation by an experienced obstetrician.

B) If the presenting part is below the lower edge of

the placenta, i.e. minor degrees of placenta praevia (I and II anterior), then it is safe to wait until labour and these women can be expected to deliver vaginally.

Complications

A) Maternal Risks

1) Postpartum haemorrhage The risk is increased because of the less efficient contractility of the lower uterine segment.
2) Abnormally adherent placenta **(accreta)** may occur in about 15% of women with placenta praevia. If the woman has been delivered by caesarean section in a previous pregnancy there is a risk of **placenta percreta** in which the trophoblast has invaded though the entire thickness of the myometrium.
3) Anaesthetic and surgical complications-More likely if inexperienced medical personnel carry out caesarean section as an emergency in face of major haemorrhage.
4) Recurrence in 4-8% of women who have had placenta praevia in one pregnancy will have it again in the next.
5) Maternal death.

B) Fetal Risks

1) Prematurity.
2) IUGR (Intrauterine growth restriction).

This is particular if multiple episodes of bleeding have occurred.

3) Fetal haemorrhage. This may be life-threatening if a fetal placental vessel crosses the cervical os and ruptures **(vasa praevia).**
4) Both placenta praevia and abruption are associated with a two-fold increased in risks of congenital malformations.

PLACENTAL ABRUPTION (ABRUPTIO PLACENTAE)

Definition

This is haemorrhage arising from separation of a normally situated placenta. It may occur antepartum or intrapartum. *It is a self-extending process with the accumulating blot clots causing more separation and thus more haemorrhage until the edge of the placenta is reached. After this, blood can escape through the potential spare between the **chorion** and the **decidua** until it reaches the cervix.

1) Revealed haemorrhage---- The blood tracks between the membranes and the uterine wall and escapes at the introitus.
2) Concealed haemorrhage ---- A large haematoma forms between the placenta and uterus. No external bleeding occurs.
3) Mixed haemorrhage ---- combines the features of both. This is the most common.

Classification

A) Major Abruptio placenta

This is clinically obvious and may result in death of the fetus. It is also life-threatening to the mother and usually involves separation of more than one-third of the placenta.

B) Minor Abruption - placenta

This is premature separation of small areas of the placenta, which may result in placental infarcts, which can sometimes be seen on ultrasound. Several small abruptions may precede a large abruption.

Incidence

It occurs in 1% of pregnancies. The recurrence rate is about 6%

Causes of abruption placenta

The basic causes are unknown.

Associated factors

1) Maternal hypertension/pre-eclampsia.

This is due to associated placenta bed damage.

2) Trauma to the abdomen.

RTA-Road Traffic Accidents (including seat belt injuries), iatrogenic trauma (e.g. insertion of intrauterine catheters during labour).

3) Fibroids.

Where the site of the placenta attachment covers a fibroid.

4) High Parity.

5) **Sudden uterine decompression**.

This is from Artificial Rupture of the fetal Membranes (**ARM**) or when a patient with hydramnious losses a large volume of liquor.

6) External cephalic version. (E.C.V.)

7) Previous abruption

8) Multiple pregnancy

9) Cocaine

The use of 'crack', the heat-stable smokable cocaine alkaloid increasingly blights the
lives of inner city habitants in the USA and elsewhere.

10) The 'sick placenta'

Some cases of abruption are associated with poor placentation and this may be a reoccurring problem. The findings of high mid-pregnancy levels of maternal serum alpha fetoprotein **(AFP)** in the absence of fetal abnormality indicates an increased risk of later complications that include intrauterine growth restriction (IUGR), preterm labour and placental abruption. The high levels of AFP can perhaps be seen as an early manifestation of the 'sick placenta' syndrome allowing excessive fetomatermal transfer of AFP in mid-pregnancy and diminished 'adhesiveness' later.

11) Folic acid defficiency

The evidence for this is not convincing.

12) Chorio-amnionitis

There is a three - fold increase after prolonged rupture of membranes.

Clinical features

- Intense, constant abdominal pain with or without vaginal bleeding. (Concealed / Revealed bleeding). (Pain increases in severity). There is usually no periodicity until uterine contractions start and super- imposed additional intermittent pain.
- A degree of shock out of proportion to the extent of blood loss.
- Tender uterus perhaps large for dates and increasing in size (The uterus is extremely hard and tender increasing in size and it does not relax).
- Fetal parts may be difficult to feel.
- Fetal heart sounds may be irregular or absent.
- Proteinuria
- D.I.C. (Disseminated intravascular coagulopathy) may develop.
- Oiguria or anuria in really severe cases.

Diagnosis

- Usually clinically. This is also confirmed by **retro- placental blood clots** indenting the placenta substance.

Differential diagnosis

Among them are:

- Placental praevia.
- Uterine rupture.
- Degeneration of a fibroid.
- Rectus sheath haematoma.

- Acute hydramnios.
- Acute surgical conditions.

Management

Major placenta abruption is a life threatening condition for both the mother and baby.

A) If the fetus is still alive

1) Insert 2 large-bore I.V. cannulae and commence infusion of normal saline. (To correct shock and hypovolemia)
2) Send blood for cross matching of 4 units of blood, P.C.V. and coagulation studies.
3) Perform an immediate caesarean section to save the baby's life.
4) Ensure adequate fluid replacement following the caesarean section.
5) Leave an indwelling urinary catheter to monitor urinary output.

B) If the fetus is dead

Then the woman should be allowed to deliver vaginally. This usually happens rapidly (within 4-6 hours) as the abruption stimulates labour. If not in labour, rupture of fetal membranes followed by judicious oxytocin usually leads to quick delivery.

In labour:

1) Insert 2-large- bore I. V. cannulae and start normal saline infusion. (To correct shock and hypovoleamia).
2) Send blood for cross matching of 4 units of blood, P.C.V. and coagulation studies.
3) Epidural anaesthesia/analgesia is contra-indicated because of the risk of coagulopathy.
4) If coagulopathy has developed or the woman starts to bleed she should be managed in conjunction with the **Haematologist**. Even if coagulation studies are not available, coagulation failure usually becomes apparent if blood taken for tests has not clotted.
   a) Give 4 units of fresh Frozen Plasma (FFP).
   b) Ask for platelets (6 units to be ready).
   c) Give platelets, cryoprecipitate or fibrinogen as advised by the **Haematologist**

The consumptive coagulopathy begins to improve immediately the uterus has been evacuated of its contents. Even marked abnormalities of the coagulation tests resolve within 4-6 hours of delivery of the placenta.

Evidence of Coagulopathy

- Decreased fibrinogen levels.
- Decreased concentration of platelets.
- Raised levels of Fibrin degradation products (FDPs).

Complications

A) Maternal Risks

1) Disseminated intravascular coagulopathy (D.I.C.)
2) Hypovoleamic shock. Blood loss is often under estimated, particularly if 'concealed'.
3) Postpartum haemorrhage. This is associated with D.I.C. or bleeding into the myometrium interfering with uterine contractions **('Couvelaire uterus').**
4) Renal failure. Acute tubular necrosis may result from hypovolaemia and intravasucular coagulation within the kidney.
5) Maternal death.
6) Recurrence. This may be as high as 17% after one and 25% after two previous placenta abruptions.

B) Fetal Risks

1) IUGR.This is due to the association with pre-eclampsia.
2) Perinatal death. About 50% of perinatal deaths are still births.
3) Perinatal morbidity including birth asphyxia

OTHER CAUSES OF ANTEPARTUM HAEMORRHAGE.

A) Local causes

Bleeding from the lower genital tract may produce A.P.H.

A gentle speculum examination will help to detect these:

1) Vaginitis.
2) Cervical polyp.
3) Cervical erosion
4) Carcinoma of the cervix.
5) Trauma.
6) Varicosities of the vagina.

B) Coagulation defects

E.g. Von Willebrands disease or warfarin treatments may also cause bleeding.

C) Vasa Praevia

A placental blood vessel lies in front of the presenting part of the fetus usually as a result of a velamentous insertion of the cord in the placenta. Bleeding from this will cause vaginal bleeding but also exsanguination of the fetus. Fetal haemoglobin can be checked for by **sodium hydroxide** or by performing a **Kleihauer test.**

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