

# ANTEPARTUM HAEMORRHAGE

## DEFINITIONS

- Vaginal bleeding in the third trimester complicates 3-4% of all pregnancies. It is considered an obstetric emergency because hemorrhage remains the most frequent cause of maternal death and often leads to fetal death.
- *i.e defined as vaginal bleeding from 24 weeks to delivery of the baby.*
- It is estimated that 1% is attributed to placenta praevia, 1% is attributable to placental abruption and the remaining 1% is from other causes.

## Causes of antepartum bleeding

### COMMON (placental causes):

1. Placenta previae
2. Abruptio placentae
3. Vasa praevia

### UNCOMMON (Local causes)

1. Uterine rupture
2. Cervical or vaginal lacerations(trauma)
3. Cervical or vaginal lesions including cancer
4. Congenital bleeding disorder
5. Vaginal infections or cervicitis
6. Cervical ectropion
7. Unknown

## INITIAL EVALUATION

- If a patient is bleeding profusely, a team approach to the assessment and management should be instituted to maintain hemodynamic stability.
- This team should include an obstetrician, an anesthesiologist, and nurses who are knowledgeable about the management of the critically ill patient.
- At least one preferably two large-bore intravenous line should be placed. A central venous pressure line, or preferably a Swan-Ganz catheter, is helpful in the management of hypovolemic shock.
- Medical history should be checked for known bleeding disorders or liver disease.
- The vital signs and amount of bleeding should be checked immediately, as should the patient's mental status.
- A pelvic examination should not be performed until placenta previa has been excluded by ultrasonography.
- Once placenta previa has been excluded, a sterile speculum examination can be safely done to rule out genital tears or lesions (e.g., cervical cancer) that may be responsible for the bleeding. If none are identified, a digital examination may be performed to determine whether cervical dilatation is present.
- A complete blood count should be obtained and compared with previous evaluations to help assess the amount of blood loss.
- An assessment of the patient's coagulation profile should be done by obtaining a platelet count, serum fibrinogen level, prothrombin time, and partial thromboplastin time.
- \*The patient should be typed and cross matched for at least 6 units of blood (packed cells).
- The most accurate means of determining the cause of third-trimester bleeding is with ultrasonography.
- The ultrasonographic evaluation should include not only the location and character of the placenta but also an assessment of gestational age, an estimate of fetal weight, a determination of the fetal presentation, and a screening for fetal anomalies.
- Uterine activity and the fetal heart rate should be assessed with a monitored strip (CTG) to rule out labor and establish fetal well-being.

## PLACENTA PREVIA

- **Definition:** Placenta which has implanted partially or wholly in the lower uterine segment. The incidence of placenta previa is 0.5%-1%.
- Seventy percent of patients with placenta previa present with painless vaginal bleeding in the third trimester, 20% have contractions associated with bleeding, and 10% have the diagnosis made incidentally by ultrasonography or at term.

### Lower uterine segment:

- It forms after 28 week's gestation and it has 3 definitions
- Is that part of the uterus which measures about 5 cm from the internal os (metric definition used in U/S).
- Is that part of the uterus which stretches and dilates in labour (physiological definition occurs in labour).
- Is that part of the uterus which lies below the level at which the visceral peritoneum is reflected on the dome of the bladder from being ultimately adherent to the upper uterine segment (anatomical definition used in caesarean section).

## PREDISPOSING FACTORS

Factors that have been associated with a higher incidence of placenta previa include

1. Multiparity
2. Increasing maternal age
3. Prior placenta previa
4. Multiple gestations
5. Previous Caesarean Section
6. Smoking
7. Most have no known cause – presumed late implantation

*Patients with a placenta previa have a 4% to 8% risk of having placenta previa in a subsequent pregnancy.*

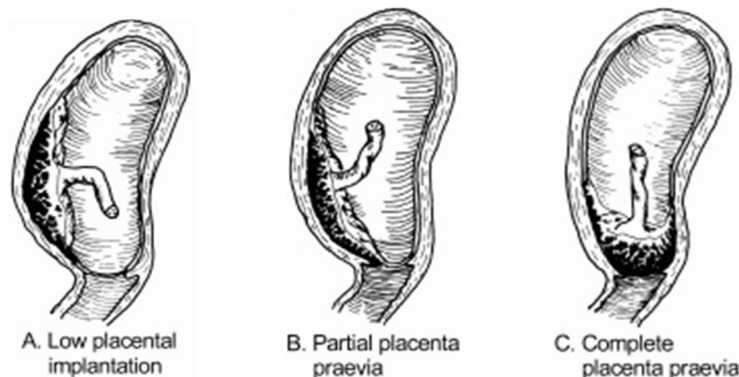
## CLASSIFICATION

Placenta previa is classified according to the relationship of the placenta to the internal cervical os.

- Grade 1: the placental edge is in the lower uterine segment but does not reach the internal os (low implantation).
- Grade 2: the placental edge reaches the internal os but does not cover it.
- Grade 3: the placenta covers the internal os when it is close and is asymmetrically situated (partial).
- Grade 4: the placenta covers the internal os and is centrally situated (complete)
- ❖ Grade 2: the placenta could be situated anteriorly or posteriorly.

### New classification:

**Minor:** Enters LUS but does not cover os (grade 1, 2), **Major:** Covers internal os partially or completely (grade 3, 4)



## Clinical presentation

1. Bleeding: usually mild but it could be severe; recurrent, painless and causeless.
  2. Soft uterus and non - tender.
  3. Normal fetal heart rate (unless there is severe bleeding or associated abruption).
  4. High presenting part.
  5. Fetal malpresentation (breech/transverse/oblique).
- Vaginal examination is contraindicated.
  - 10% of placenta praevia cases can also be complicated by placental abruption.

## DIAGNOSIS:

- The classic presentation of placenta previa is painless vaginal bleeding in a previously normal pregnancy. The mean gestational age at onset of bleeding is 30 weeks, with one-third presenting before 30 weeks. Placenta previa is almost exclusively diagnosed today by ultrasonography.
- Between 4% and 6% of patients have some degree of placenta previa on ultrasonic examination before 20 weeks' gestation. With the development of the lower uterine segment, a relative upward placental migration occurs, with 90% of these resolving by the third trimester.
- Complete placenta previa is the least likely to resolve, with only 10% of cases resolving by the third trimester.
- When placenta previa is diagnosed in the second trimester, a repeat sonogram is indicated at 30 to 32 weeks for follow-up evaluation.
- Transabdominal ultrasonography has an accuracy of 95% for placenta previa detection. If the placenta is implanted posteriorly and the fetal vertex is low, the lower margin of the placenta may be obscured and the diagnosis of placenta previa missed.
- Transvaginal ultrasonography can accurately diagnose placenta previa in virtually 100% of cases. Theoretically, transvaginal ultrasonography could precipitate bleeding, so it should only be done in a hospital setting with informed consent.
- The double set-up procedure dictates that the patient be in the operating room prepared for cesarean delivery. A complete surgical team must be ready to operate should the vaginal examination (performed to determine whether a placenta previa exists) precipitate substantial bleeding.
- The only indication for a double set-up in modern obstetrics is when ultrasonography is inconclusive and the patient is in labor with non-life-threatening vaginal bleeding.

## MANAGEMENT

Once the diagnosis of placenta praevia is established, management decisions depend on:

1. The gestational age of the fetus and
  2. The extent of the vaginal bleeding.
- With a preterm pregnancy, the goal is to attempt to obtain fetal maturation without compromising the mother's health.
  - If bleeding is excessive (>1500 ml), delivery must be accomplished by cesarean section regardless of gestational age.
  - When the bleeding episode is not profuse or repetitive, the patient is managed expectantly in the hospital on bed rest.
  - If the patient reaches 36 weeks, fetal lung maturity should be determined by amniocentesis and the patient delivered by cesarean section if the fetal lungs are mature. Elective delivery is preferable, as spontaneous labor places the mother at greater risk for hemorrhage and the fetus at risk for hypovolemia and anemia.

### **Asymptomatic and minor bleeding:**

- Admission (minor). Asymptomatic PP admitted at 36 weeks.
- CBC, cross matching and preparation of blood.
- Coagulation profile.
- Maternal and fetal monitoring.
- Correction of anaemia.
- Anti-D if the mother is rhesus negative.
- Tocolytic: safe, gain 13 days, other than B-agonist to be used.
- Corticosteroids 48 hours before delivery.

**Vaginal delivery:** placenta >2cm from the internal os, low head, no bleeding. Do examination in theatre if in doubt

**C/S (of choice):** grade 4, 3, placenta within 2 cm of the internal os, high head, bleeding, presence of added factors.

### **MATERNAL-FETAL RISKS**

- The maternal mortality from placenta previa has dropped precipitously over the past 60 years from 30% to less than 1%. This has primarily been the result of the liberal use of cesarean section and careful expectant management.
- The rare maternal death is generally associated with complications of cesarean section or uncontrolled hemorrhage from the placental site (usually posterior).
- Disseminated intravascular coagulopathy (DIC) may result if a massive hemorrhage or an associated abruption occurs.
- The risk of antepartum or intrapartum hemorrhage, or both, is a constant threat to the patient with placenta previa. Bleeding may be caused by an associated morbidly adherent placenta, uterine atony, or the placenta previa itself.
- morbidly adherent placenta implies an abnormal attachment of the placenta through the uterine myometrium as a result of defective decidual formation (absent Nitabuch's layer). This abnormal attachment may be superficial (accreta), or the placental villi may invade partially through the myometrium (increta) or extend to the uterine serosa (percreta).
- Two-thirds of patients with this complication require hysterectomy. Patients with a history of uterine surgery are at greatest risk of developing an accreta. In fact, those with a prior cesarean section carry a 25% risk.
- Preterm delivery poses the greatest risk to the fetus. Fortunately, primarily as a result of advances in obstetric and neonatal care, the perinatal mortality rate (PMR) has declined over the past decade. The PMR is, however, significantly higher than in the general population and is presently quoted as 40 to 80 deaths per 1000 births.
- Twenty percent of pregnancies will be complicated by intrauterine growth restriction (IUGR), and there is a twofold higher incidence of congenital abnormalities. The incidence of malpresentation is 30%. In addition, there is a higher incidence of preterm premature rupture of the membranes in pregnancies complicated by placenta previa.

### **Complications of Placenta praevia (Summary)**

1. Preterm delivery and its complications
2. Preterm premature rupture of membranes.
3. IUGR (repeated bleeding).
4. Malpresentation; breech, oblique, transverse.
5. Fetal abnormalities (double in PP).
6. ↑ Number of C/S.
7. Morbid placentae: placenta accreta (80%), increta and percreta.
8. Postpartum haemorrhage: lower segment not contract and retract, morbid placenta, C/S.

