Antepartum Hemorrhage (APH)

- **Antepartum Hemorrhage**: is bleeding from the vagina during pregnancy from the 24th week (sometimes defined as from the 20th week) gestational age to term.
- It is a medical **emergency**
- It Complicates 4% of all pregnancies
- Is one of the leading causes of
  - antepartum hospitalization,
  - maternal morbidity, and mortality
  - operative intervention.

**causes and Differential diagnosis of APH :**

- **Obstetrics**
  1. Bloody show (sign of normal delivery) which is the release of the cervical mucus in the early stages of labor.
  2. Placental abruption (most common cause) is called **accidental hemorrhage**.
  3. Placenta previa (second most common cause)
  4. Vasa previa (commonly presented in delivery)
  5. Uterine rupture

- **Nonobstetrics**
  1. Bleeding from the lower genital tract:
     - Cervical bleeding (cervicitis, cervical neoplasm, cervical polyp)
     - Vaginal bleeding (trauma – neoplasm)
  2. Bleeding that may be confused with vaginal bleeding:
     - GI bleed - hemorrhoids, inflammatory bowel disease
     - Urinary tract bleed - urinary tract infection
  3. **Coagulation Disorder**
  4. **Neoplasia**
- **Function of placenta**: The placenta provides the fetus with oxygen and nutrients and takes away waste such as carbon dioxide via the umbilical cord.

**Risk factors of all APH:**

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<th>Placenta previa</th>
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<th>Uterine rupture</th>
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<td>Painful bleeding?</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
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### Placenta previa

- **Placenta Previa**: a placenta implanted in the lower segment of the uterus.
- It has major effect on the mother not on the fetus.
- It is an obstetric complication that classically presents as painless vaginal bleeding in the third trimester secondary to an abnormal placentation near or covering the internal cervical os.
- **Incidence**: about 1 in 200

**Classification of placenta previa**

- **Grade I**: low lying placenta: placenta lies in lower uterine segment but its lower edge does not about the internal cervical os (i.e lower edge 0.5-5.0 cm from internal os).
- **Grade II**: marginal Previa: placental tissue reaches the margin of the internal cervical os, but does not cover it.
- **Grade III**: partial Previa: placenta partially covers the internal cervical os.
- **Grade IV**: total or complete Previa: placenta completely covers the internal cervical os.
Grades I and II are termed a "minor" placenta Previa, Grades III and IV are termed a "major" placenta Previa

- **Pathology:**
  Bleeding in case of placenta previa results from small disruptions in the placental attachment during normal development and thinning of the lower uterine segment and it usually ceases spontaneously.

- **Risk factors**
  - Advancing *maternal age* (>35 y)
  - Multiparity
  - *Multifetal gestations*
  - *Prior cesarean delivery*
  - Smoking
  - Prior placenta previa

- **Clinical picture:**
  - The most characteristic event in placenta previa is painless bright red vaginal bleeding or bleeding without contraction, This bleeding often starts mildly and may increase as the area of placental separation increases.
  - This usually occurs after the second trimester.
  - It usually ceases spontaneously, only to recur.

*Note:* In more than 90% of women diagnosed with placenta previa in the second trimester, the placenta will correct itself by the end of the pregnancy.

- **Signs by Physical Examination:**
  - Abdominal examination usually finds **the uterus is non-tender, soft and relaxed.**
  - *(Avoid digital cervical examination)*
**Placenta previa may be associated with:**

1. **Placenta Accreta**: The placenta adheres to the uterine wall without the usual intervening decidua basalis.

2. **Placenta Increta**: The placenta invades the myometrium.

3. **Placenta Percreta**: The placenta penetrates the entire uterine wall, potentially growing into bladder or bowel.

**Note:**

- The risk of a morbidly adherent placenta increases with increasing numbers of previous Caesarean sections.
- Placenta previa increases the risk of puerperal sepsis and postpartum hemorrhage because the lower segment to which the placenta was attached contracts less well post-delivery (less muscle in the lower segment)

**Diagnosis:**

- The diagnosis can be confirmed by U/S.
- *Transabdominal Ultrasonography*: The simplest and safest method of placental localization
- *Transvaginal Ultrasonography*: Has practically improved diagnostic accuracy of placenta previa.

**Note:**

- Placental location should be repeated every month because majority of cases 90% the placenta migrates away from internal os between 18 and 20 weeks' gestation. Migration will not appear after 32 weeks of pregnancy.

**Management:**
• Admit to hospital ➔ Initial assessment and resuscitation if shocked ➔ Insert two wide bore cannula ➔ Take blood sample ➔ Fluid replacement ➔ Placental localization

- **Severe bleeding**
  - ➔ Resuscitate ➔ Caesarean section
  - ➔ Gestation ➔ <34/52 ➔ Unstable ➔ Conservative care
  - ➔ <34/52 ➔ Resuscitate Steroids ➔ Stable ➔ Conservative care

- **Moderate bleeding**
  - ➔ Gestation ➔ >34/52 ➔ Unstable ➔ Conservative care

- **Mild bleeding**
  - ➔ Gestation ➔ <36/52 ➔ Conservative care
  - ➔ >36/52 ➔ Conservative care

- Expectant management for stable women and stable fetus and less than 36 weeks ➔ home management (limitation of activity + no coitus)
- women or unstable fetus ➔ ER C.S
- Mode of Delivery is only by **Caesarean section**
- Occasionally Caesarean hysterectomy necessary (in case of placenta accrete increta or percreta) Or if uncontrolled bleeding
- If the patient reaches 36 weeks, fetal lung maturity should be determined by amniocentesis and the patient delivered by cesarean if the fetal lungs are mature.
- Elective delivery is preferable because spontaneous labor places the mother at greater risk for hemorrhage and the fetus at risk for hypovolemia and anemia

- **Complication:**
Approximately 10 per cent of cases of placenta praevia can also be complicated by placental abruption

**Abruptio Placenta**

- **Placenta Abruption**: the premature separation of the normally implanted placenta after 20 weeks of gestational age.
- It is the **common pathological** cause of APH and it is happened in 1-2 % of all pregnancy.

- **Pathology**:
  Hemorrhage into the decidua basalis → decidua splits → decidural hematoma → separation, compression, destruction of the placenta adjacent to it.

- **Types**:
  - Placenta separates partly or completely from uterus before delivery of fetus.
  - Central separation lead to blood accumulates behind placenta in uterine cavity , this called (concealed hemorrhage )
  - Partial separation or lateral lead to blood lost through cervix ,
this called (external hemorrhage)

- **Clinical picture:**
  - The hallmark symptom of placental abruption is pain which can vary from mild cramping to severe pain.
  - Sometimes it is associated with bleeding and sometimes not concealed bleeding
  - The amount of external bleeding may not accurately reflect the amount of blood loss.
  - Bleeding with placental abruption is almost always maternal.
  - Significant fetal bleeding is more likely to be seen with traumatic abruption.
  - In this circumstance, fetal bleeding results from a tear or fracture in the placenta rather than from the placental separation itself.

- **Examination:**
  - A firm, tender uterus and a possible sudden increase in fundal height on exam.

- **Diagnosis :**
  - Ultrasonography Position of placenta, severity of abruption, survival of fetus
  - Signs in US : retroplacental hematoma.

**Note :**
- Negative findings do not exclude placental abruption
- Ultrasound only shows 25% of abruptions.

**Complication of placenta abruption in severe type :**
- Shock
- DIC ( damaged vessels releasing of thromboplastins widespread intravascular coagulation microthrombi dissolve by plasmin releasing of fibrin degradation product with all the result is consuming of coagulation DIC )
- Renal failure (due to shock or microthrombi has escaped and deposited in the renal vessels)
- Fetal death
- Couvelaire Uterus (Black colored uterus, due to bleeding inside it's myometrium).

- **Management :**
- Type of delivery: vaginal delivery or CS and in case of fetal distress the CS is preferred.

- In case of severe bleeding + family size is completed ➔ hysterectomy.

  ![Vasa previa](image)

  - **Vasa previa**: vessels lie before the baby in the birth canal and in the way and is an uncommon obstetric complication in which fetal blood vessels cross or run near the internal orifice of the uterus.
  - This is rarely confirmed before delivery
  - Incidence is 1 in 2500

  - **Causes**:
    1. Bi-lobed placenta
    2. Velamentous insertion of the umbilical cord
    3. Succenturiate (Accessory) lobe

  - **Risk factors**: (see table above)

  - **Symptoms**: The classic triad of the vasa previa is: membrane rupture, painless vaginal bleeding and fetal bradycardia.

  - **Complications**: the bleeding is from fetal circulation ➔ high fetal mortality rate (50%-95%) resulting from the vessels tearing during labor
- **Diagnosis:** Transvaginal ultrasound with color dopplers showing vessels passing over the internal os.

- **Management:**
  - When vasa previa is detected prior to labor, the baby has a much greater chance of surviving.
  - When vasa previa is diagnosed prior to labor, elective caesarian is the delivery method of choice.

- **Uterine rupture:** Separation of the muscular wall of the uterus.

  - It is a life-threatening event for mother and baby.
  - Typically occurs during active labor, but may also develop during late pregnancy.
  - 13% of all uterine ruptures occur outside the hospital.
  - The most common maternal morbidity is hemorrhage.
  - Fetal morbidity is more common with extrusion.

- **Classic presentation includes:**
  1. Vaginal bleeding
  2. Abdominal pain and tenderness
  3. Cessation of contractions
  4. Absence/deterioration of fetal heart rate
  5. Easily palpable fetal parts
  6. Profound maternal tachycardia and hypotension

- **Risk factors:** (see table above)

- **Management:**
  - Emergency C.S
  - Uterine Rupture following obstructed labor or trauma generally requires hysterectomy.
  - Uterine Rupture of caesarean scar generally can be sutured.
- **General complications of third trimester bleeding:**
  a. Hemorrhagic shock
  b. DIC
  c. Postpartum hemorrhage
  d. Renal failure (ischemic necrosis of the kidney)
  e. Sheehan syndrome (ischemic necrosis of anterior pituitary)

- **Management of APH:**

  1. Admission
  2. Hx (IMP: ask about **pain, amount of bleeding, duration of bleeding**)
  3. Ex (without vaginal examination until we exclude placenta previa)
  4. Blood withdrawal for Hemoglobin level to assess anemia (more hemorrhage more anemia) and for cross match, blood grouping and coagulation profile.
  5. Restoring the blood lost (fresh blood or crystalloid or colloid fluid)
  6. If coagulation defect or DIC → fresh blood, frozen blood plasma, fibrinogen, blood platelet + Heparin + Anti-fibrinolysis
  7. US → to assess fetal heart, placenta localization, amniotic fluid index, fetal presentation + lie
  8. CTG → to assess fetal distress → if there is fetal distress → immediate delivery
  9. Kleihauer-Betke test
     - Is a blood test used to measure the amount of fetal hemoglobin
     - transferred from a fetus to the mother's bloodstream.
     - Indicated to all APH and after delivery in women with – RH.
     - Used to determine the required dose of Rh immune globulin.
  10. Apt test: clinician to determine whether the blood originates from the infant or from the mother. (vasa previa originate from fetus)
  11. The mother may be given Anti-Rh negative and the father Rh positive.