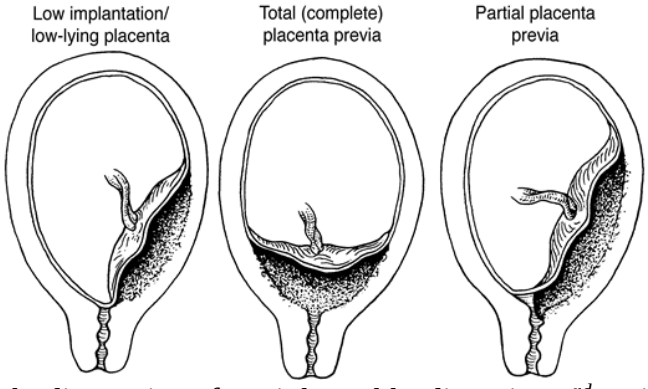
- **Bleeding in early pregnancy (1st trimester):**
  - **Painless**: threatened abortion.
  - **Painful**: inevitable abortion or ectopic pregnancy.
    - ✓ How to differentiate between abortion (miscarriage) and ectopic pregnancy?
      - ❖ *Miscarriage*: bleeding starts first (large amount with fresh clots) followed by pain.
      - ❖ *Ectopic pregnancy*: pain starts first followed by bleeding (dark brown blood).
- **Bleeding in late pregnancy (3rd trimester):**
  - **Painless bleeding:**
    - ✓ Placenta previa: in which the placenta is implanted in the lower segment of the uterus with different degrees of coverage of the internal os.
      - ❖ *There are grades of placenta previa:*

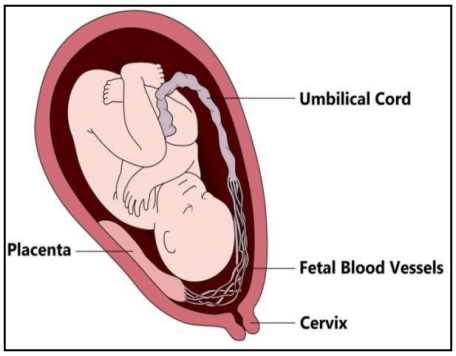
Grade-I	The placenta is near the internal os but still not covering it
Grade-II	The placenta is partially covering the internal os
Grade-III	The placenta is completely covering the internal os



      - ❖ *Differential diagnosis of painless bleeding in 3rd trimester of pregnancy:*
        - ➢ Cervical polyp.
        - ➢ Cervical erosion.
        - ➢ Cervical cancer.
      - ❖ *How to diagnose placenta previa?*
        - ➢ Due to high parity in the middle-east, placenta previa is more common because intrauterine pressure is decreased.
        - ➢ History of the patient: painless vaginal bleeding.
        - ➢ Physical examination: abdomen is soft and relaxed; abnormal fetal lie (it will oblique or transverse because the lower uterine segment is occupied by the placenta). In addition, engagement will not occur.
        - ➢ Ultrasound is used to confirm your diagnosis. MRI will only be used in a female who had a cesarean section previously and is now having placenta previa (why?) → to know the level of invasion to the scar (accreta: only invading the endometrium; increta: reaching the myometrium; percreta: invading the uterine serosa or into the bladder).
        - ➢ Notice that in antepartum hemorrhage, you must never do bimanual vaginal examination!!

❖ *Management:*
- ➢ Bed-rest.
- ➢ Non-stress test or biophysical profile (which includes the following five variables: fetal heart rate, fetal breathing, fetal movement, fetal tone and amniotic fluid index).
- ➢ Wait until term and deliver via cesarean section (if delivery is indicated before 34 weeks → administer corticosteroids).

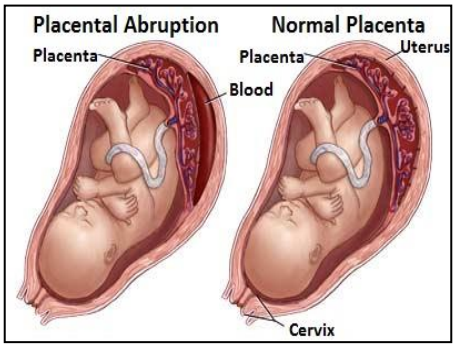
✓ Vasa previa: where fetal vessels traverse the fetal membranes over the internal cervical os.



❖ *Etiology*: These vessels may be from either a velamentous insertion of the umbilical cord or may be joining an accessory placental lobe to the main disk of the placenta. Rupture of these vessels result in fetal death.

❖ *Diagnosis*: ultrasound with color-flow Doppler.

❖ *Management*: Immediate cesarean delivery of the fetus.



- **Painful bleeding:**

✓ Placental abruption: premature separation of a normally implanted placenta –with bleeding- before delivery of the fetus.

❖ *Degrees of placental abruption:*

Mild (< 500 ml of blood)	• There are no hemodynamic changes in the mother • It is important that you differentiate this condition from pre-term labour which is characterized by regular contractions and cervical dilation
Severe (500-1000 ml of blood)	• Characteristics: high pulse, pallor and tenderness over the abdomen • This is the most dangerous obstetric emergency. • A large cannula is placed in the femoral artery to push a high amount of blood. • What to check: coagulation factors (because there is increased risk of DIC → if there is a problem in these factors → fresh frozen plasma is given), CBC and Rh

❖ *Management*: normal vaginal delivery unless bleeding is uncontrolled or there is fetal distress.