ANTEPARTUM HEMORRAGE

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Definition

- It is bleeding from or into the genital tract, occurring from 24 weeks of pregnancy and prior to the birth of the baby.
- APH complicates 3–5% of pregnancies.
- Is a leading cause of perinatal and maternal mortality worldwide.

Causes

Obstetric

Placenta

- Placental abruption.
- Placenta previa.
- Maternal Bloody show .

Fetal blood

- Vasa previa .

Uterine rupture.

Non obstetric

Bleeding from the lower genital tract

Cervical bleeding : cervicitis, cervical neoplasm, cervical polyp.

Vagina bleeding : trauma, neoplasm.

Bleeding that may be confused with vaginal bleeding:

GI bleed : hemorrhoids, IBS.

Urinary tract bleed : Stone, cystitis, UTI.

Bleeding Disorders:

Congenital (Von-Willebrand's disease).

Acquired (DIC).

It is not uncommon to fail to identify a cause for APH ,it is then described as ‘unexplained APH’.

There are no consistent definitions of the severity of APH.

It is recognized that the amount of blood lost is often **underestimated** and that the amount of blood coming from the introitus may not represent the total blood lost (for example in a concealed placental abruption).

It is important therefore, when estimating the blood loss, to assess for **signs of clinical shock.** The **presence of fetal compromise** or **fetal demise** is an important **indicator of volume depletion**.

Spotting : staining, streaking or blood spotting noted on underwear or sanitary protection.

Minor hemorrhage : blood loss less than 50 ml that has settled.

Major hemorrhage : blood loss of 50–1000 ml, with no signs of clinical shock.

Massive hemorrhage : blood loss greater than 1000 ml and/or signs of clinical shock.

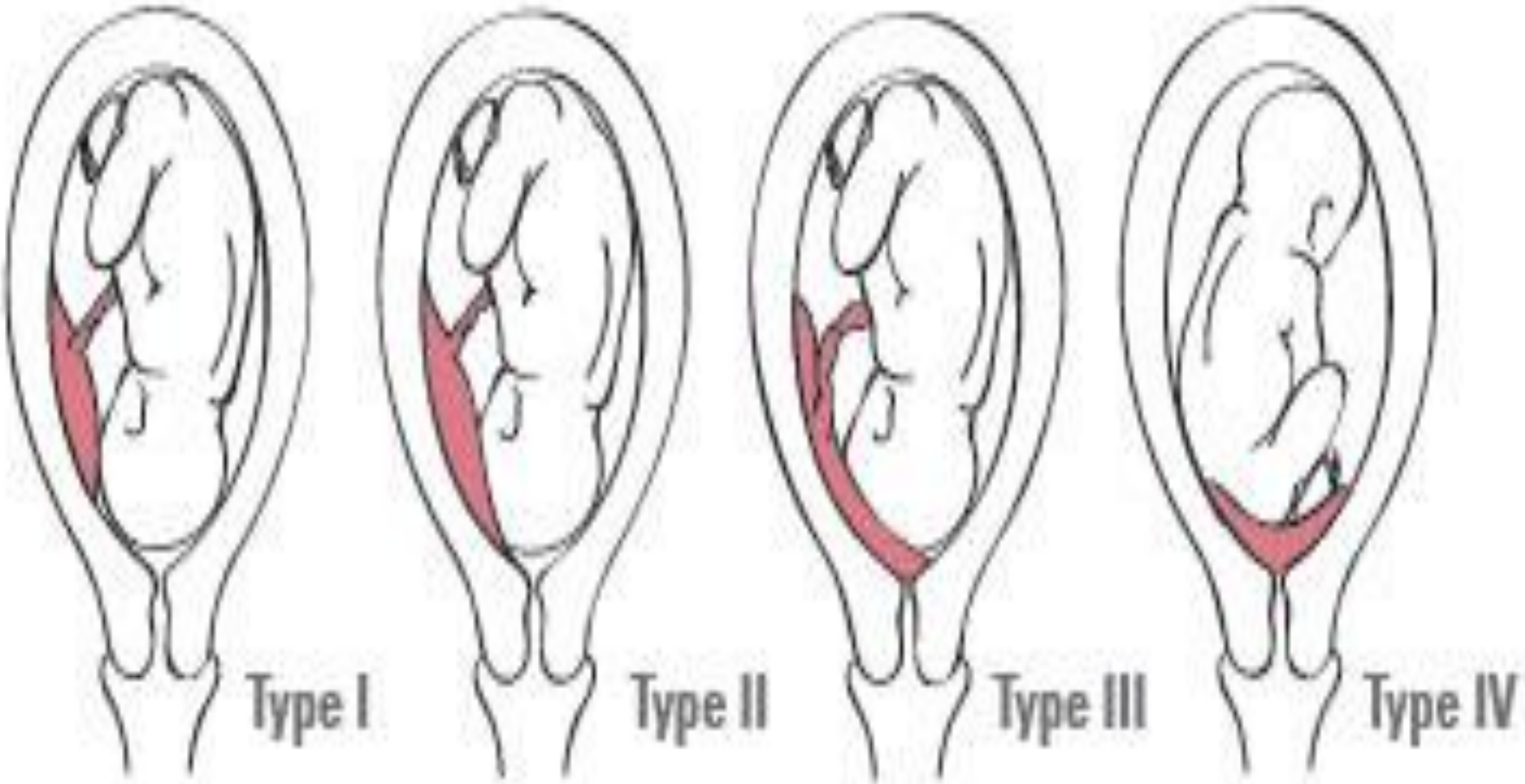
placenta praevia

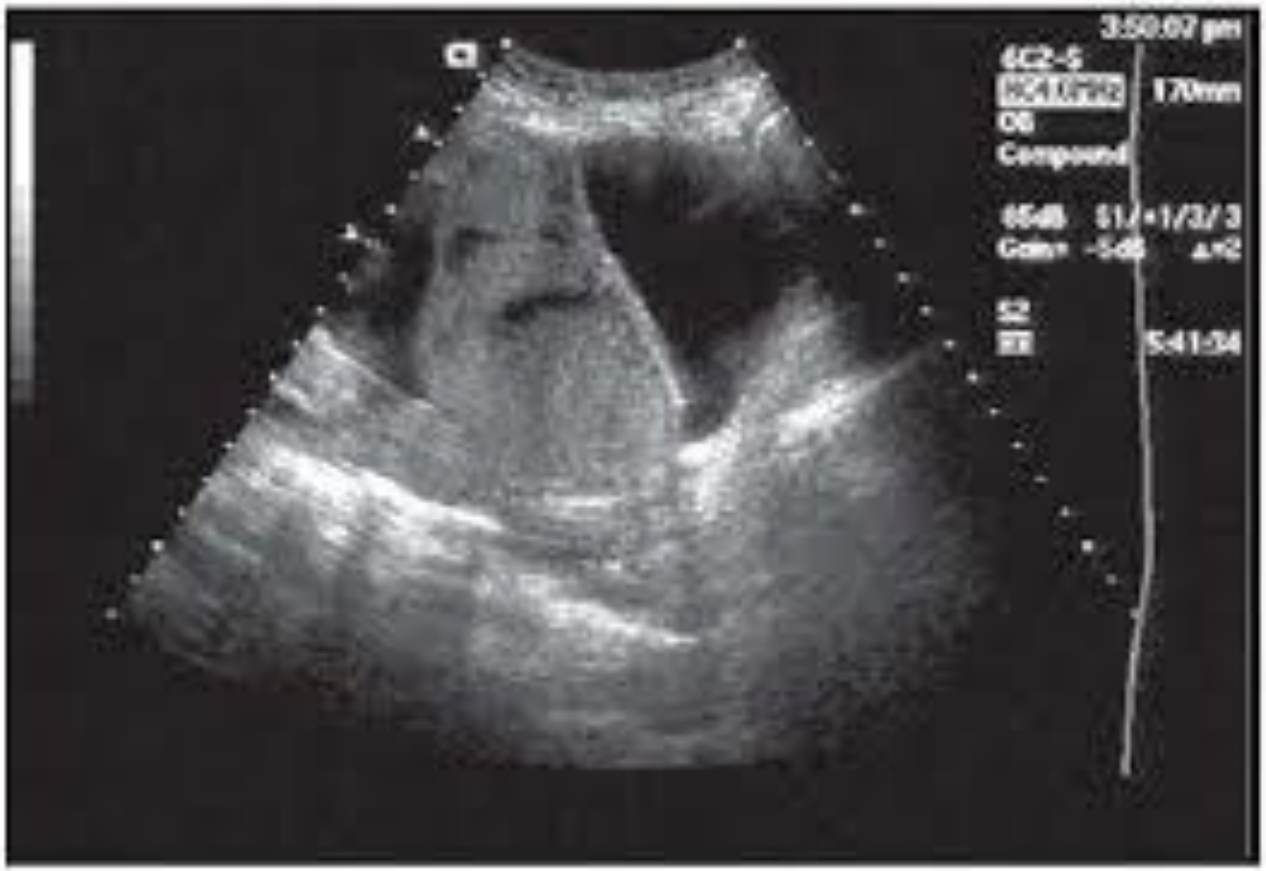
Insertion of the placenta, partially or fully, in the lower segment of the uterus.

Incidence : 1 in 200-300

Grades

- 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)


Type I
Type II
Type III
Type IV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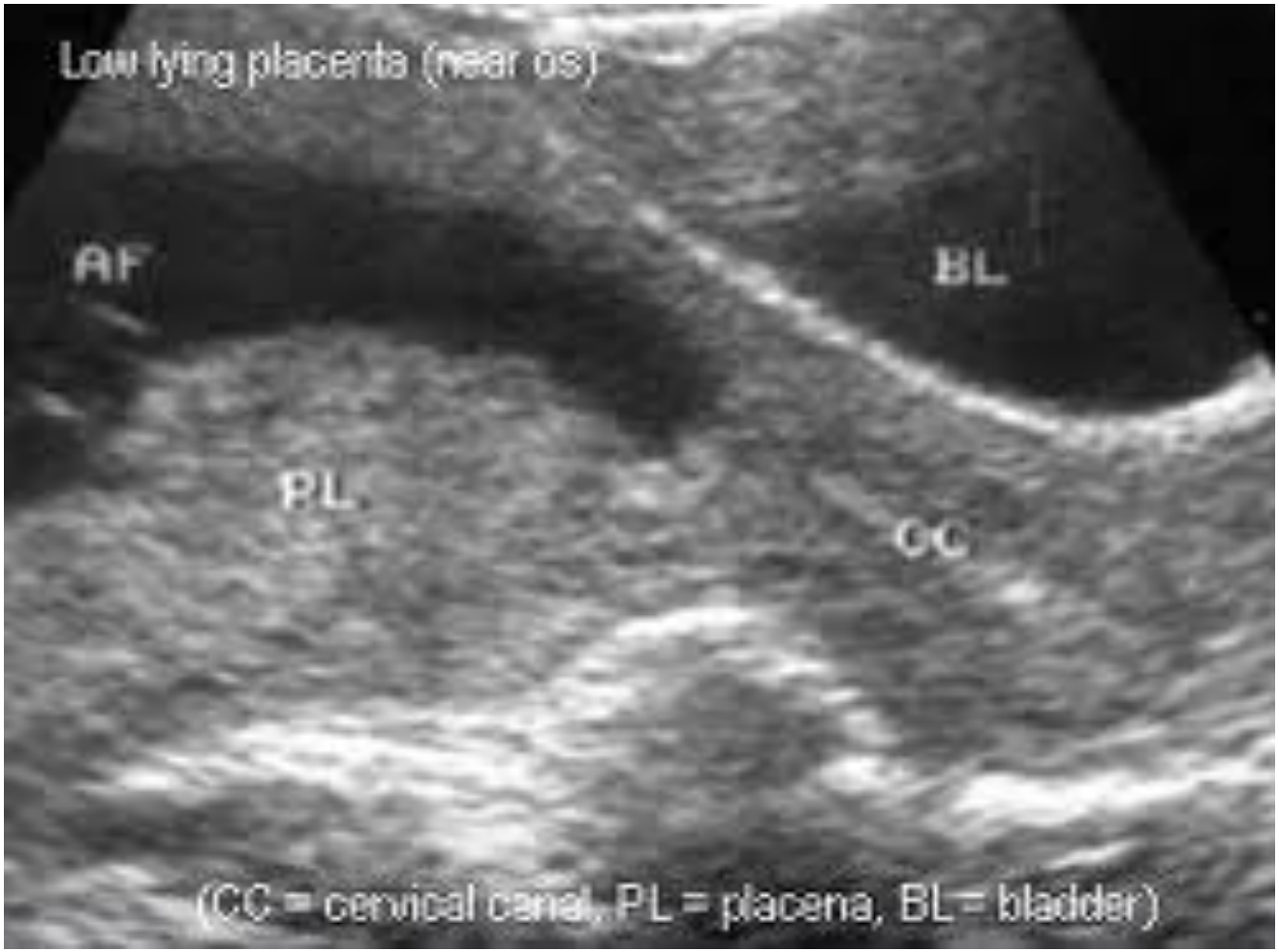
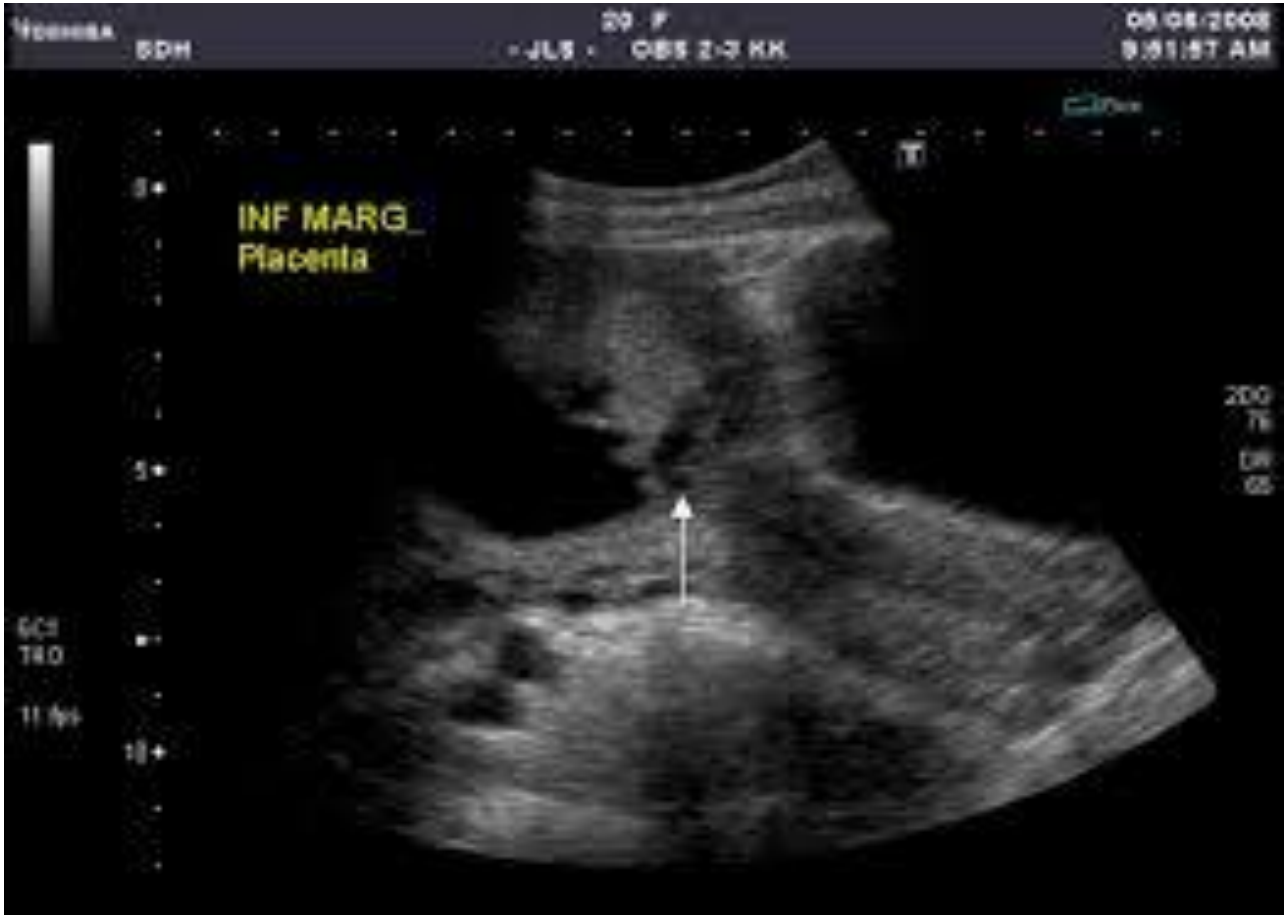
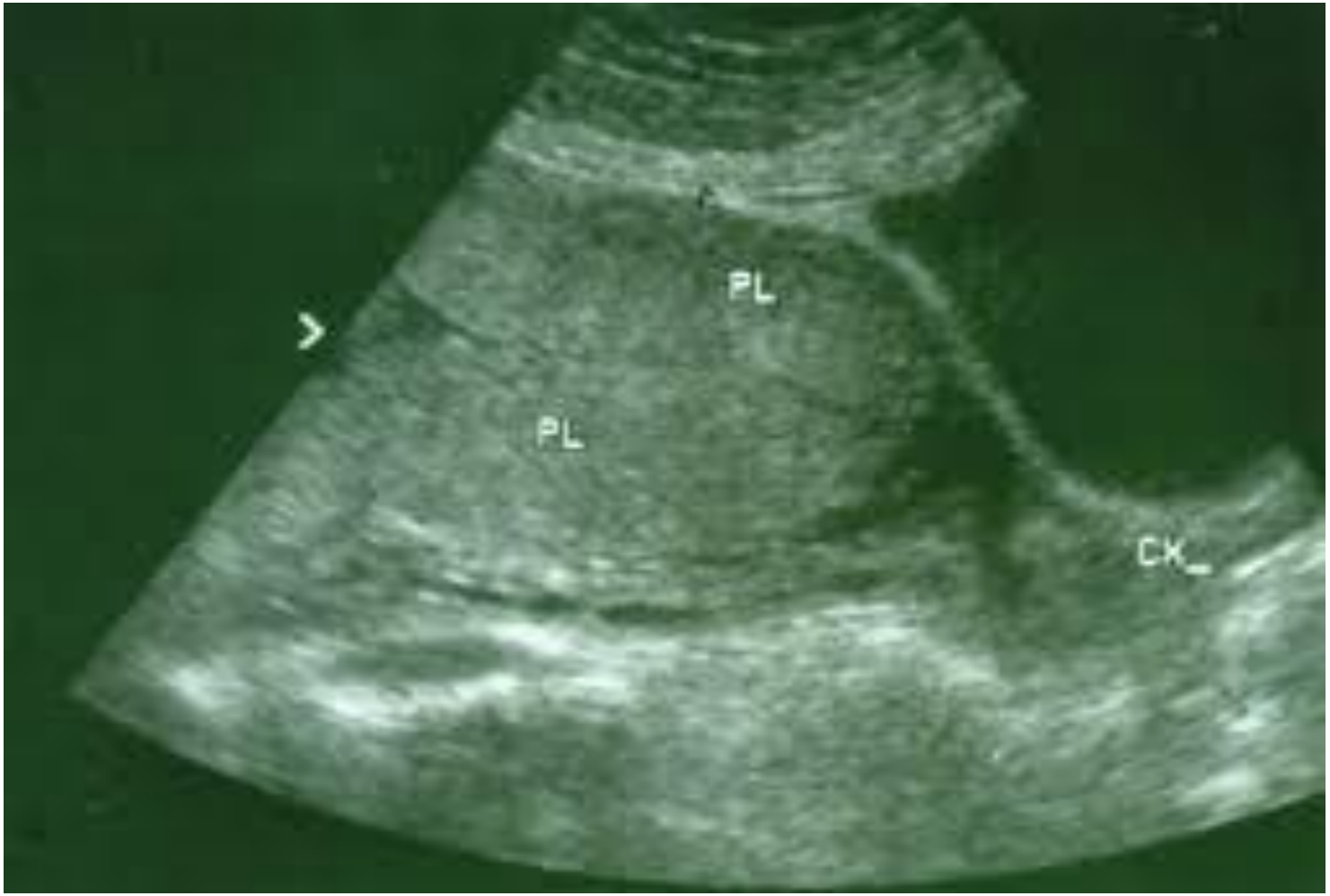

Low lying placenta (near os)
AF
BL
PL
CC
(CC = cervical canal, PL = placena, BL = bladder)


INF MARG_
Placenta


PL
PL
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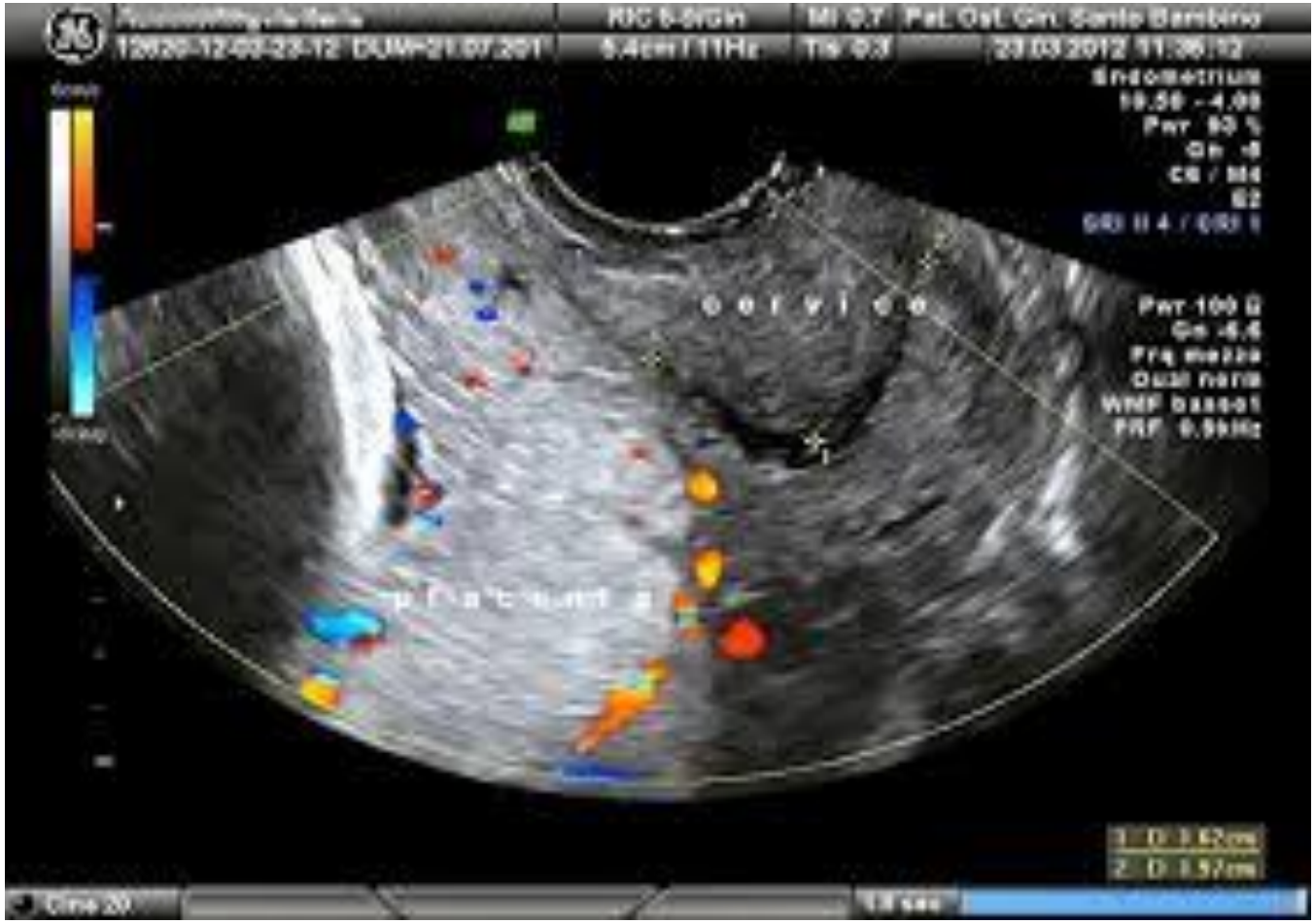
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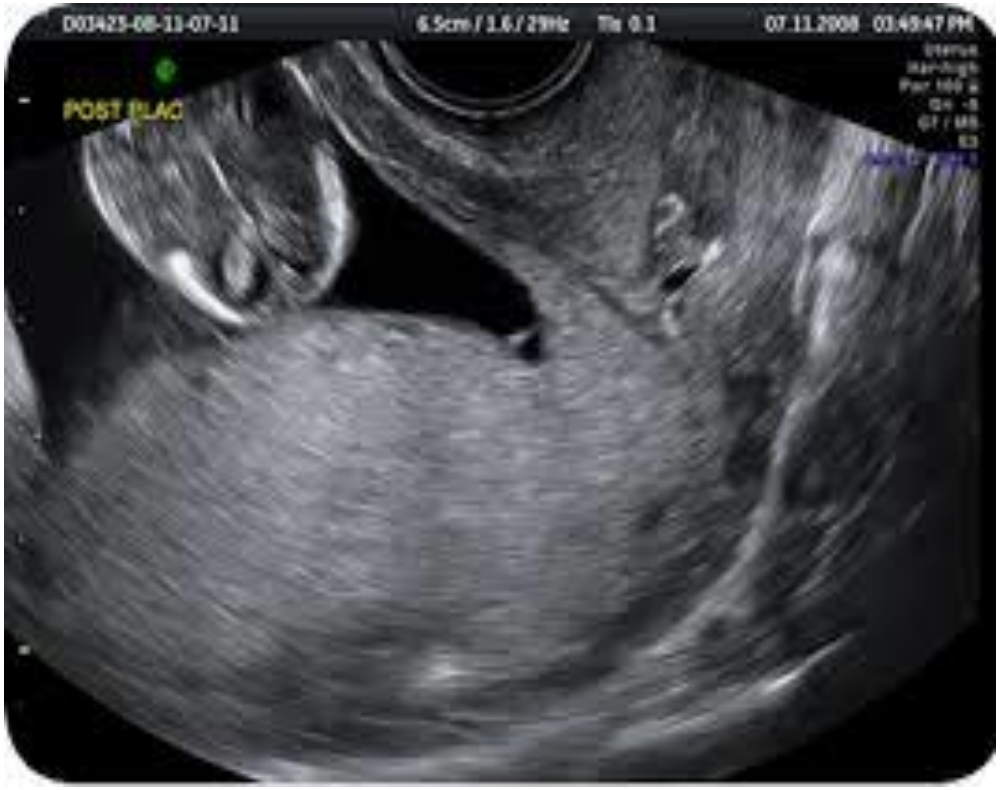
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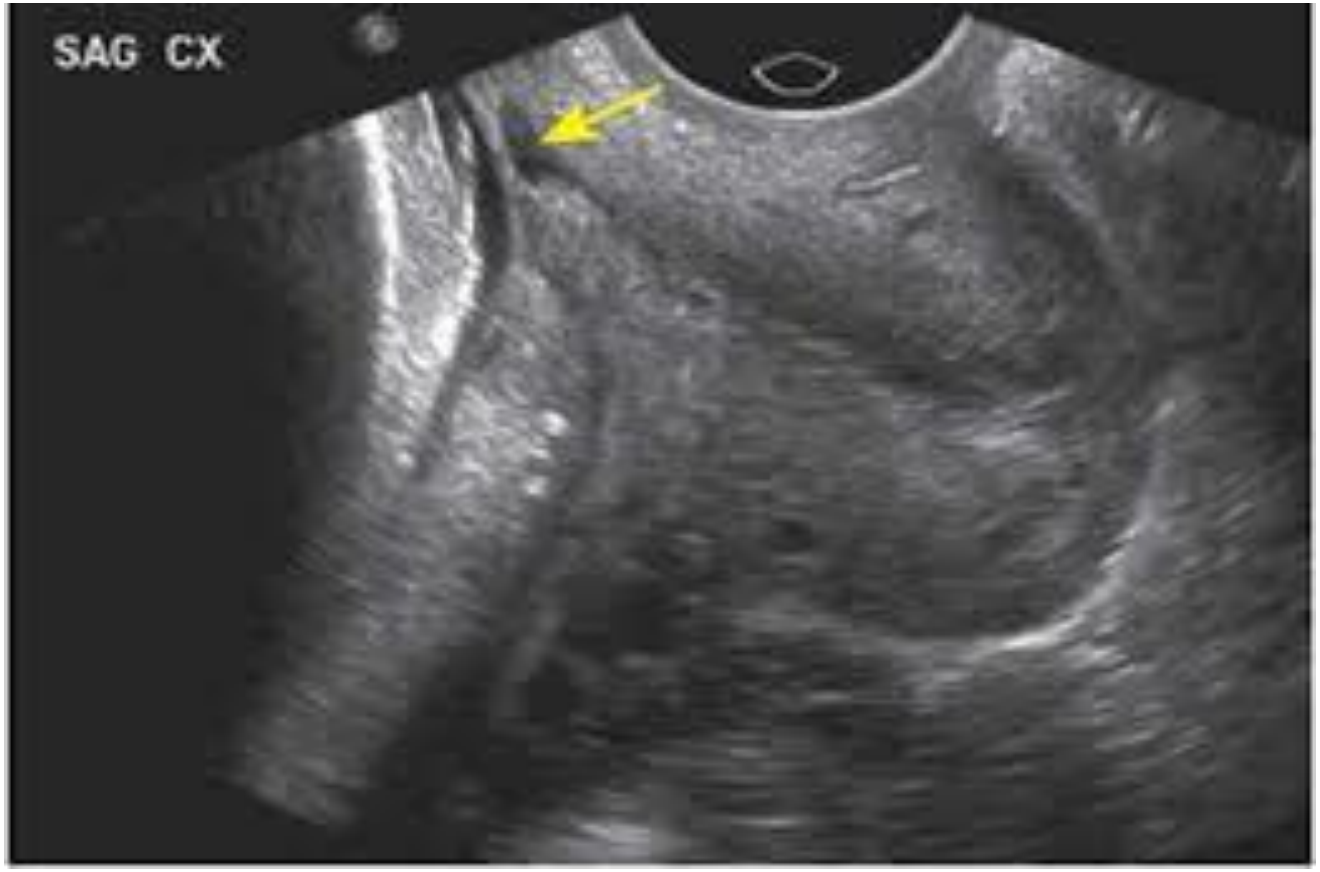

SAG CX

Risk factors

- Previous placenta praevia .
- Deficient endometrium due to presence or history of:
  - uterine scar
  - endometritis
  - manual removal of placenta
  - curettage
  - sub mucous fibroid
- Multiparity.
- Advanced maternal age (>40 years).
- Multiple pregnancy.
- Smoking.
- Uterine anomaly.
- Assisted conception

Clinical presentation

- At 18-23 weeks **scan**, 5% will have low placenta and 10% of those will be previa at 30-32 weeks gestation.

- **Bleeding**: usually mild but it could be severe; recurrent, (70%painless).

- Bleeding presents at around 30 weeks gestation.

Diagnosis

- Bleeding with soft uterus .
- High presenting part.
- Fetal malpresentation (breech/transverse/oblique).
- Normal fetal heart rate (unless there is severe bleeding or associated abruption).

- U/S: transabdominal scan is 95% accurate , while transvaginal scan is 100% mainly for the placental edge in posterior previa.
- MRI: expensive.??
- Examination in the theatre : (double set up) if no facilities or in doubt.

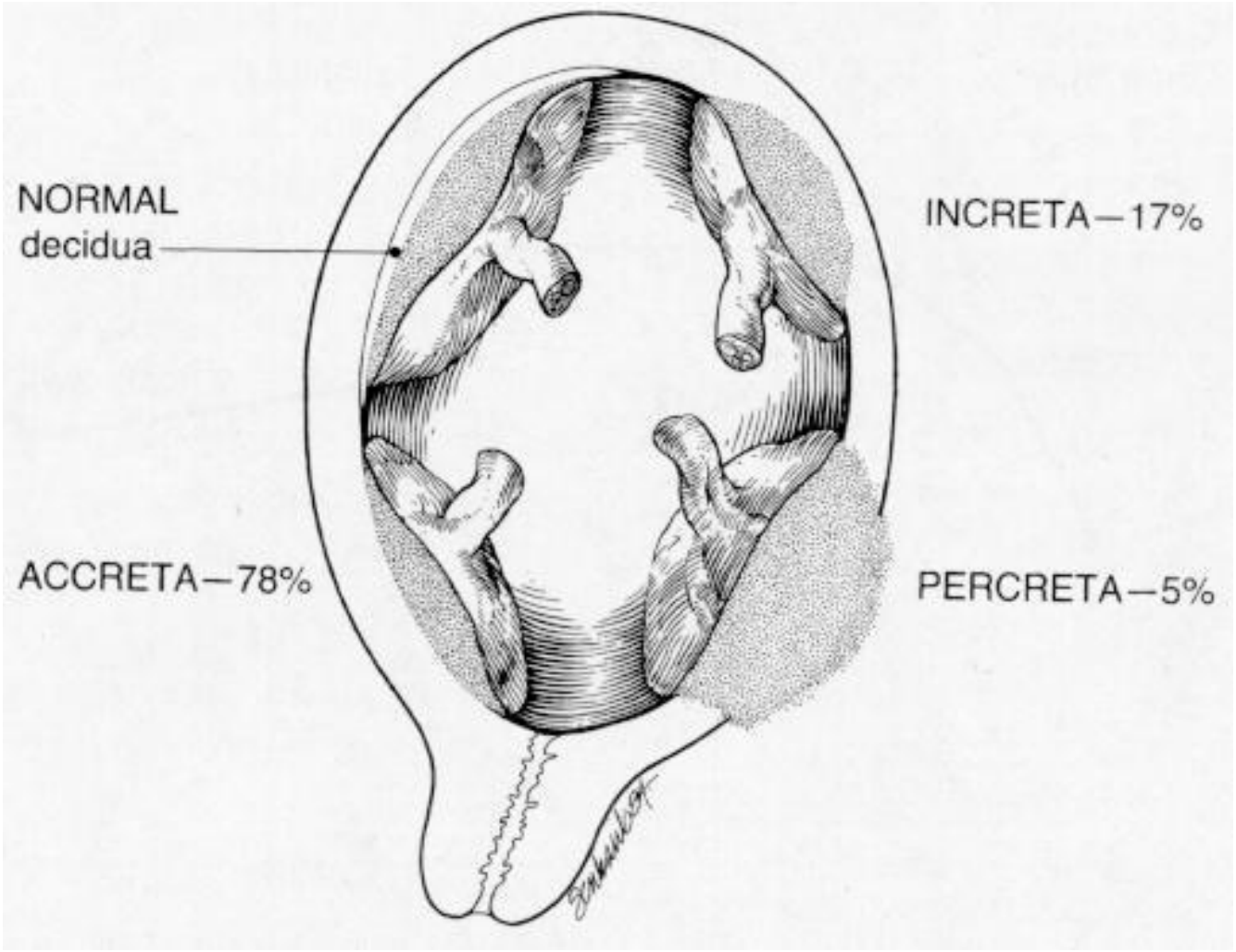
Vaginal examination is contraindicated.

Maternal and fetal risks

- Preterm delivery.
- Preterm premature rupture of membranes.
- IUGR (repeated bleeding).
- Malpresentation; breech, oblique, transverse.
- Fetal abnormalities.
- The maternal death is usually due to complications of the CS or uncontrolled hemorrhage from placental bed.
- DIC is due to massive bleeding or associated abruption.

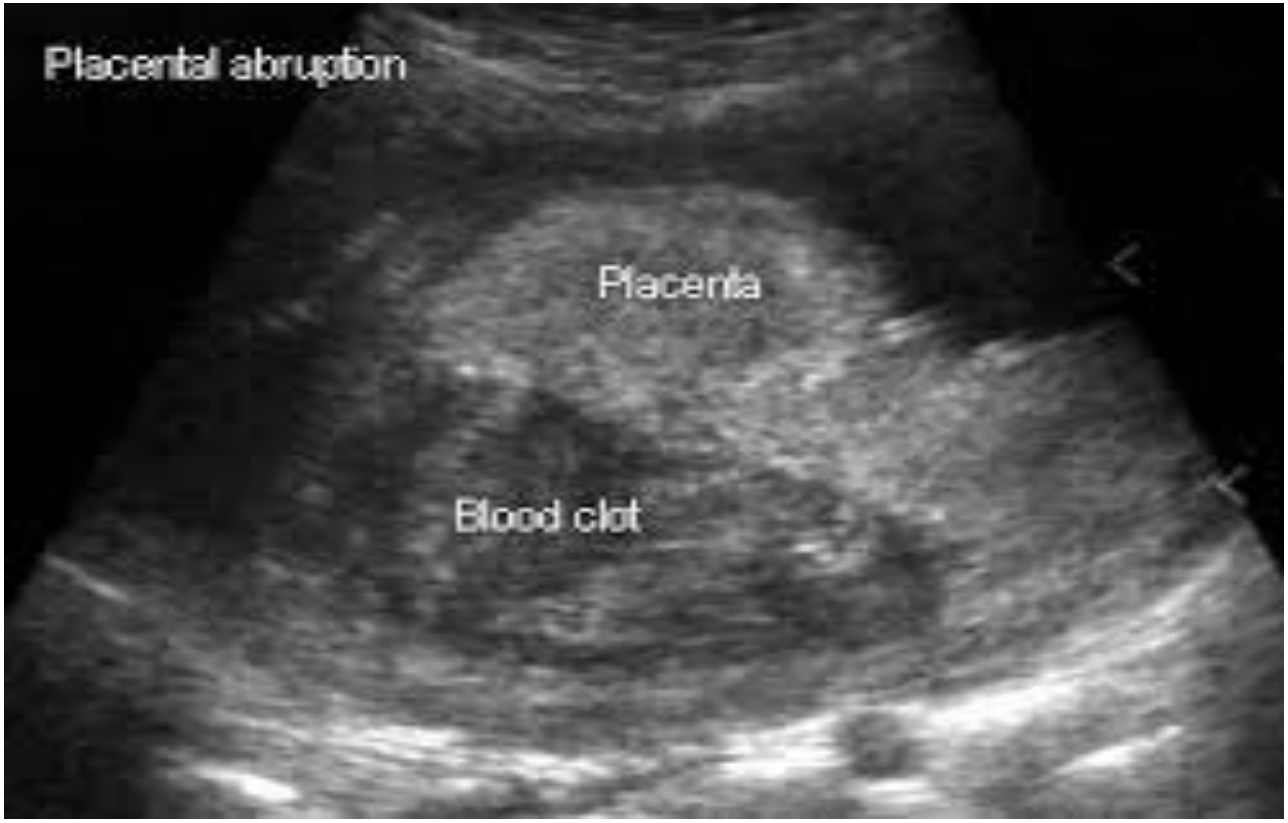
- Morbidly adherent placenta: placenta acreta, increta and percreta.

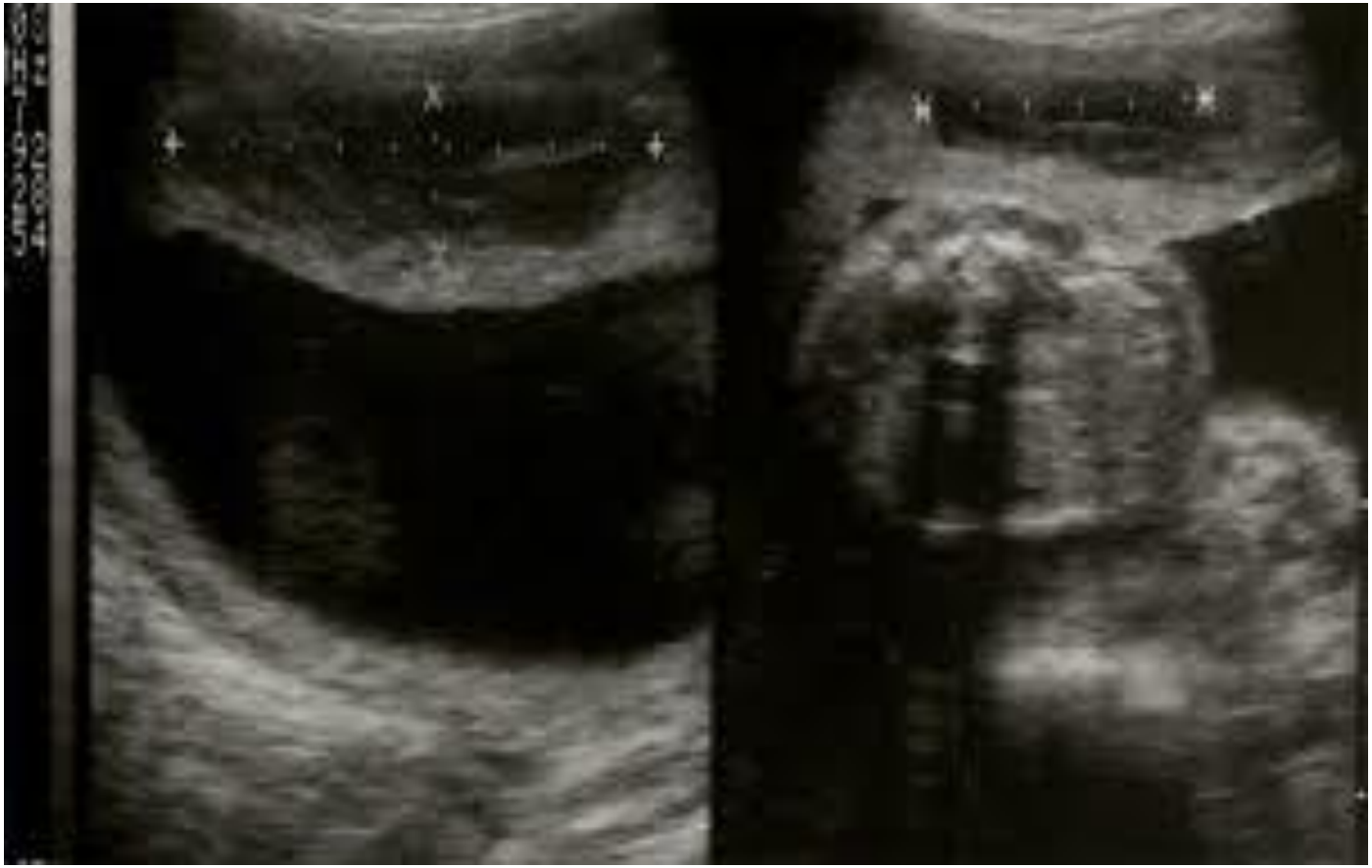
- PPH: Atony ,placenta accreta or placenta previa (lower segment does not contract and retract).

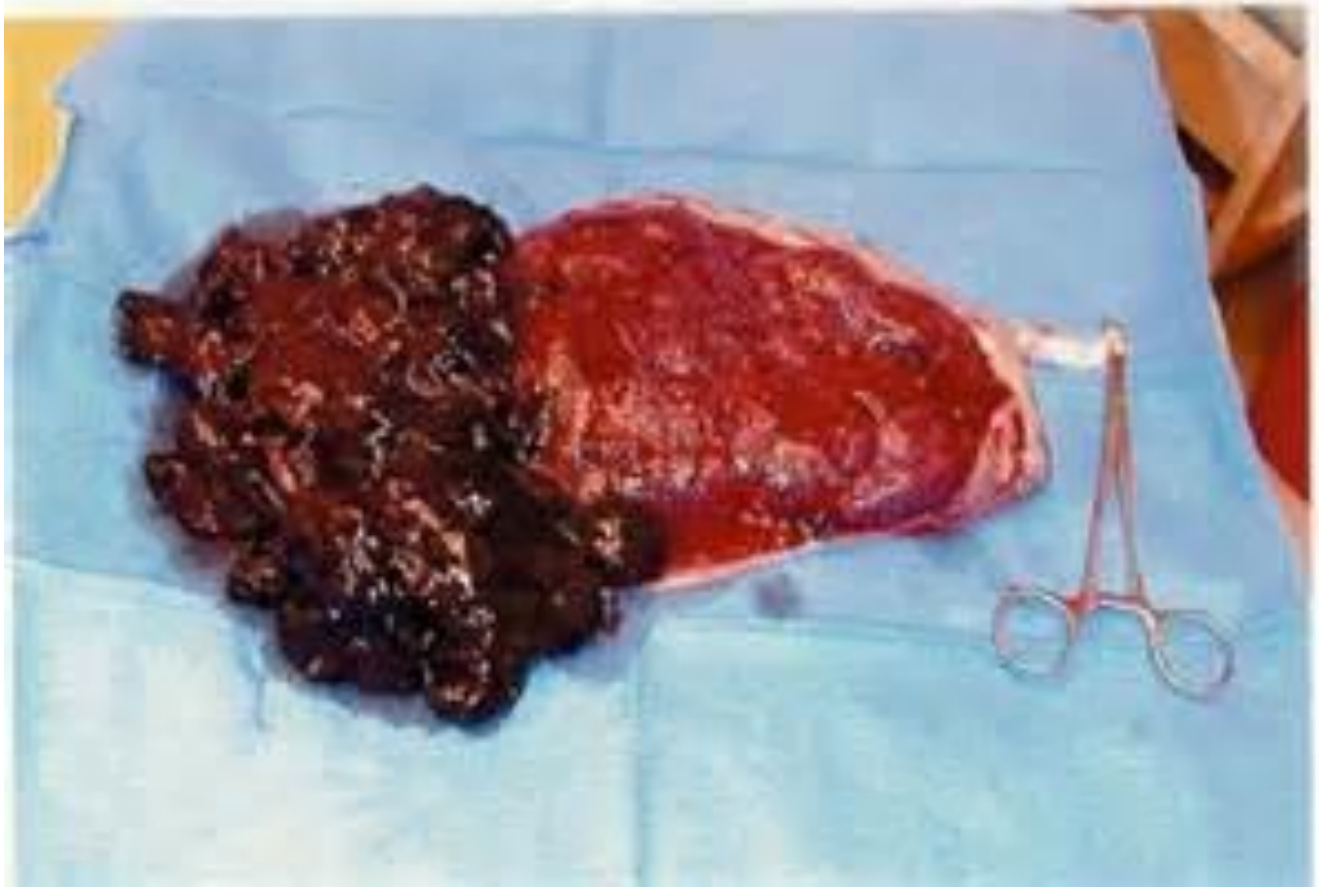

NORMAL
decidua
INCRETA—17%
ACCRETA—78%
PERCRETA—5%

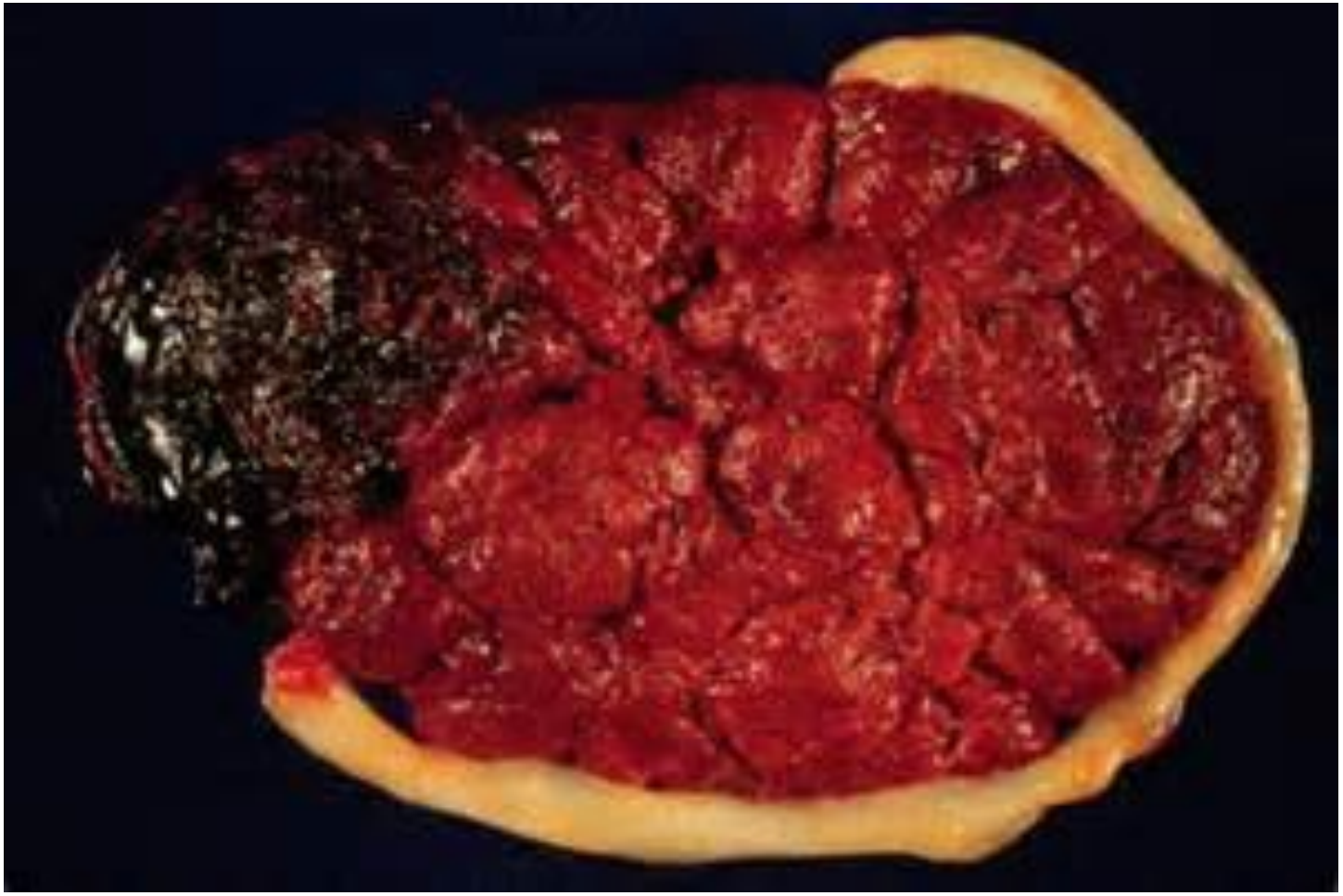
Placental abruption

- It is the separation of the placenta from its site of implantation before delivery of the fetus after 24 weeks gestation.
- Incidence:1/100-120 deliveries.
- Types: Total or partial, Concealed or revealed.


Placental abruption
Placenta
Blood clot







Risk factors

- The most predictive factor is abruption in a previous pregnancy. (it recurs in 4.4% in second pregnancy and 19–25%).
- Pre-eclampsia.
- Polyhydramnios
- advanced maternal age.
- Multiparity
- Low body mass index (BMI).
- Fetal growth restriction.
- Non-vertex presentations.

Risk factors

- Drug misuse (cocaine and amphetamines)
- smoking.
- Intrauterine infection
- Pregnancy following assisted reproductive techniques.
- Premature rupture of membranes.
- Abdominal trauma (both accidental and resulting from domestic violence).
- first trimester bleeding and especially if scan showed a hematoma.
- Maternal thrombophilia.
- Folate deficiency.

This information may be used to assign women to high-risk or low-risk antenatal care.

Complications

Maternal complications :

- Maternal shock.
- Anemia .
- Infection .
- Renal tubular necrosis .
- Consumptive coagulopathy.
- Postpartum hemorrhage.
- Prolonged hospital stay.
- Psychological sequelae.
- Sheehan syndrome.
- Complications of blood transfusion.

Fetal complications:

- Fetal hypoxia
- Small for gestational age .
- Fetal growth restriction.
- Prematurity (iatrogenic and spontaneous).
- Fetal death.

Clinical presentation

- Painful vaginal bleeding.
- Uterine tenderness or back pain.
- Fetal distress (decreased fetal movement).
- High frequency contractions.
- Hypertonic uterus.
- IUFD.

Differential diagnosis

Revealed:

may present like placenta previa or local causes.

Concealed:

- Intraperitonial hemorrhage.
- Ruptured uterus.
- Acute polyhydramnious.
- Degenerated fibroid or complicated ovarian cyst.
- Abdominal pregnancy
- Volvolus & Peritonitis.

Diagnosis

The diagnosis is clinical.

U/S: is to

•Confirm fetal viability, assess fetal growth & normality, measure liquor, do umbilical artery Doppler velocities.

•Exclude placenta praevia.

• 2% only can be diagnosed by scan.

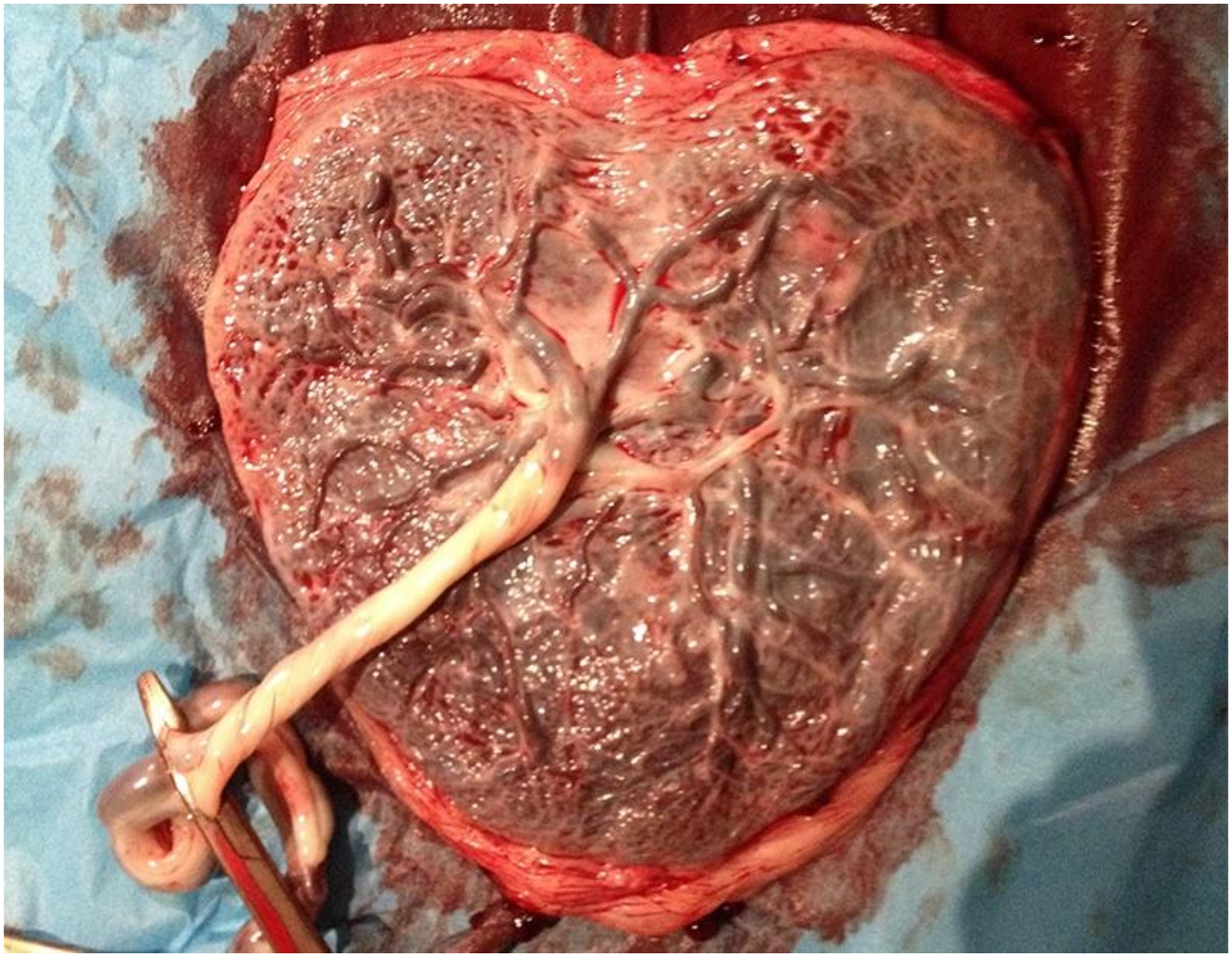
Vasa previa

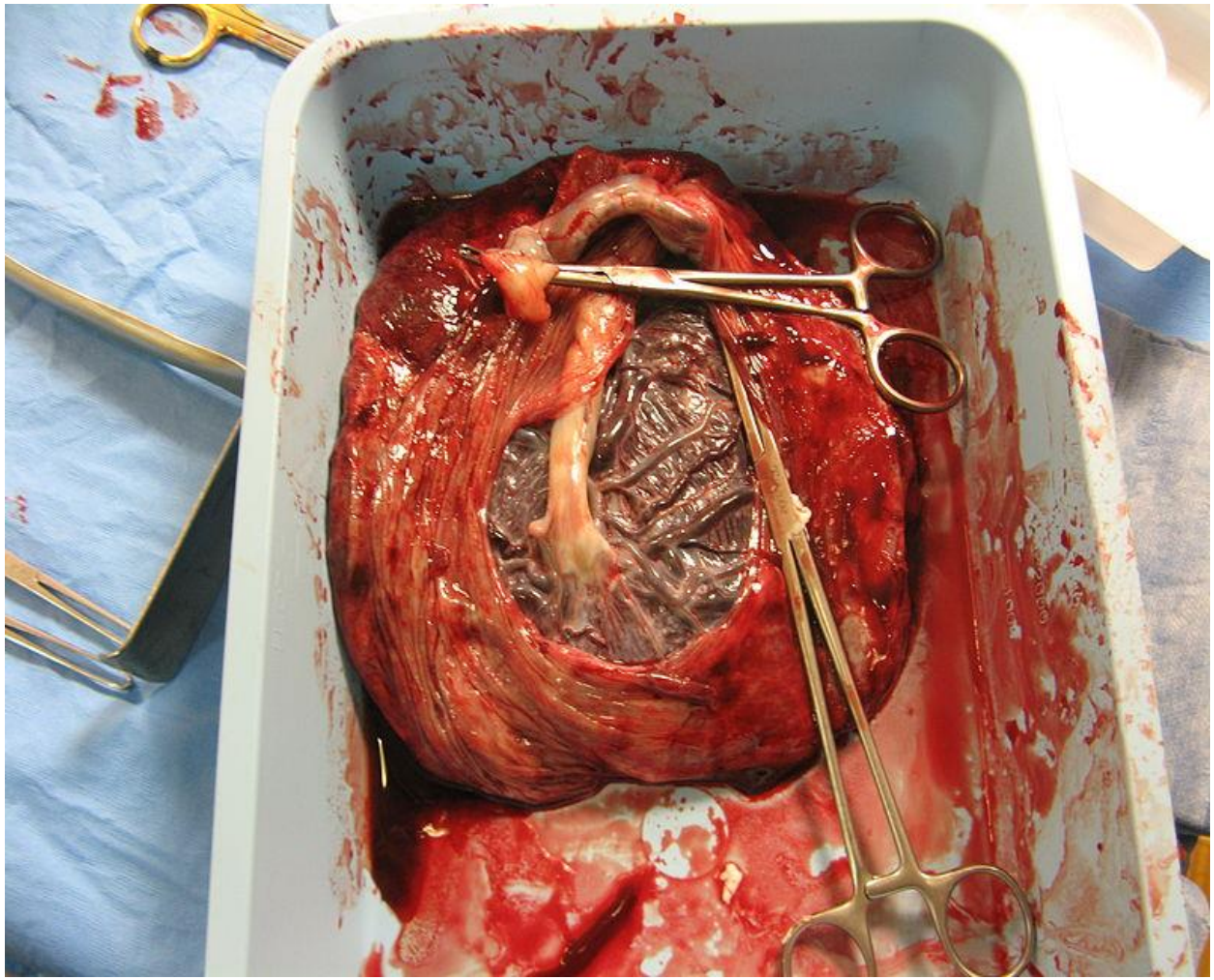
- It occurs when the fetal vessels from the umbilical cord attach to the membranes instead of the placenta ,and those vessels traverse the membranes in the lower uterine segment in advance of the presenting part.

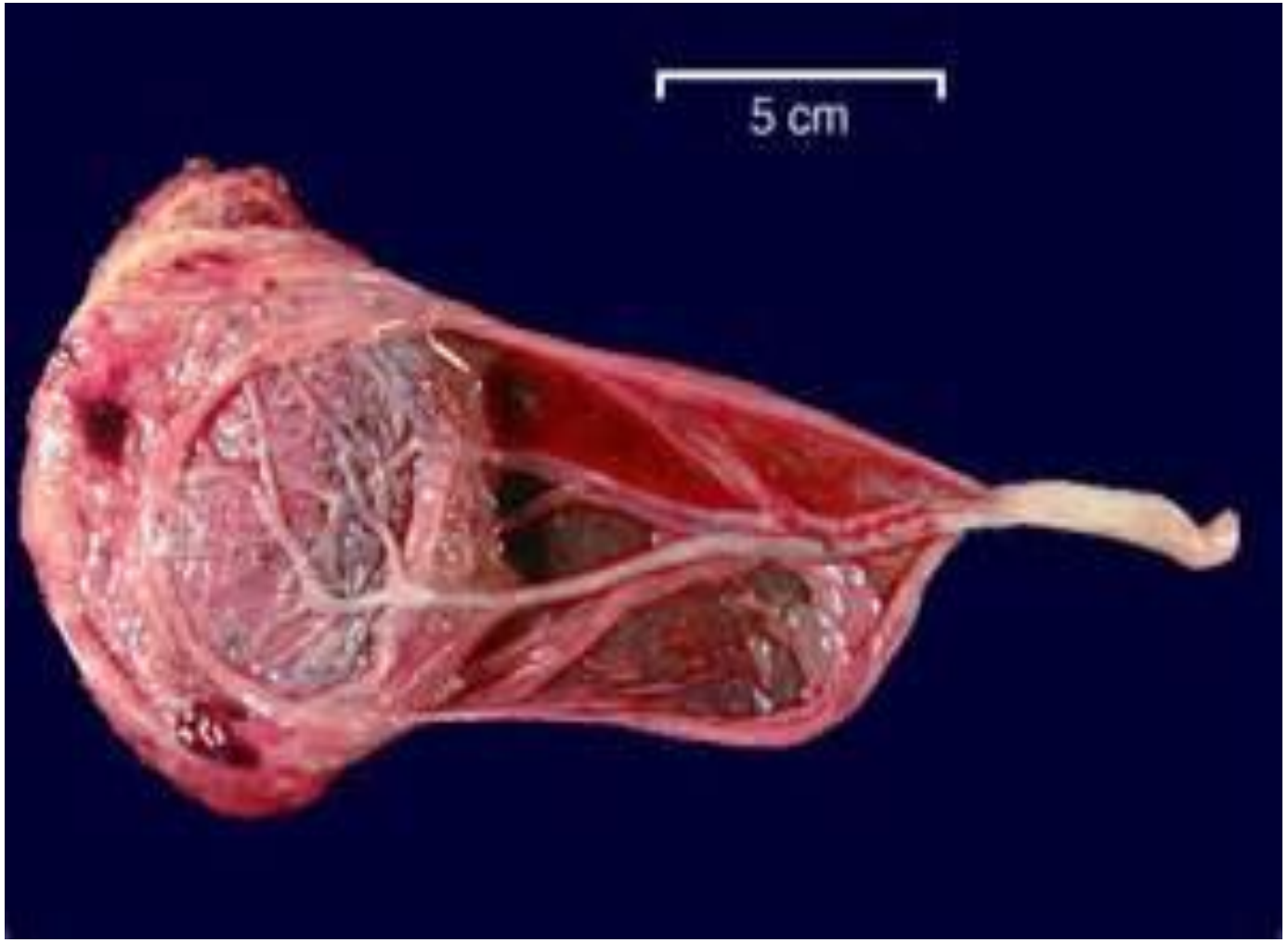
- Rupture of these vessels can occur with or without rupture of the membranes and frequently leads to fetal demise .

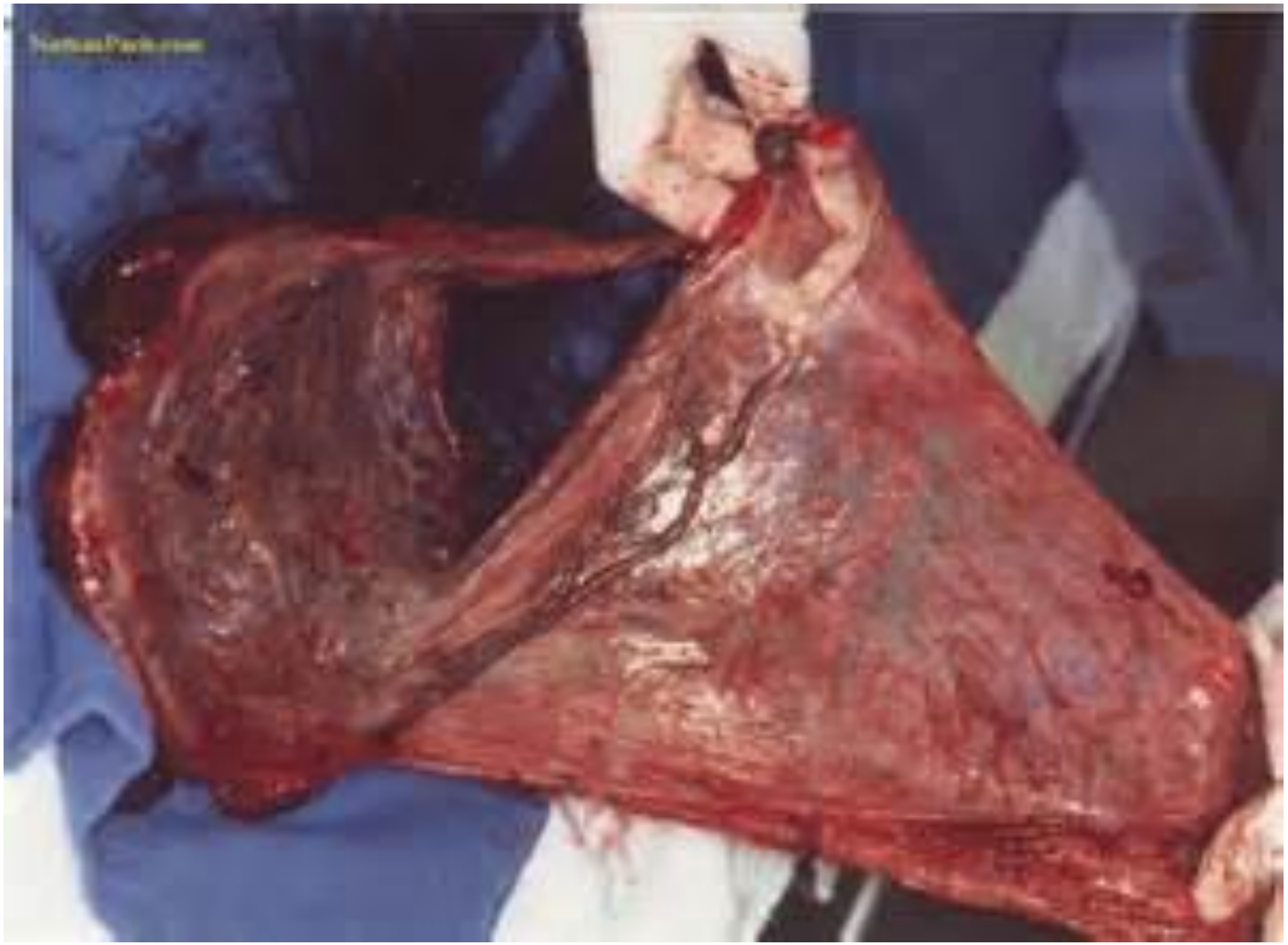
- This occurs in about 1 of every 3,000 -5,000 pregnancies.
- Diagnosed by Apt test.
- Often difficult to diagnose.

Normal placenta

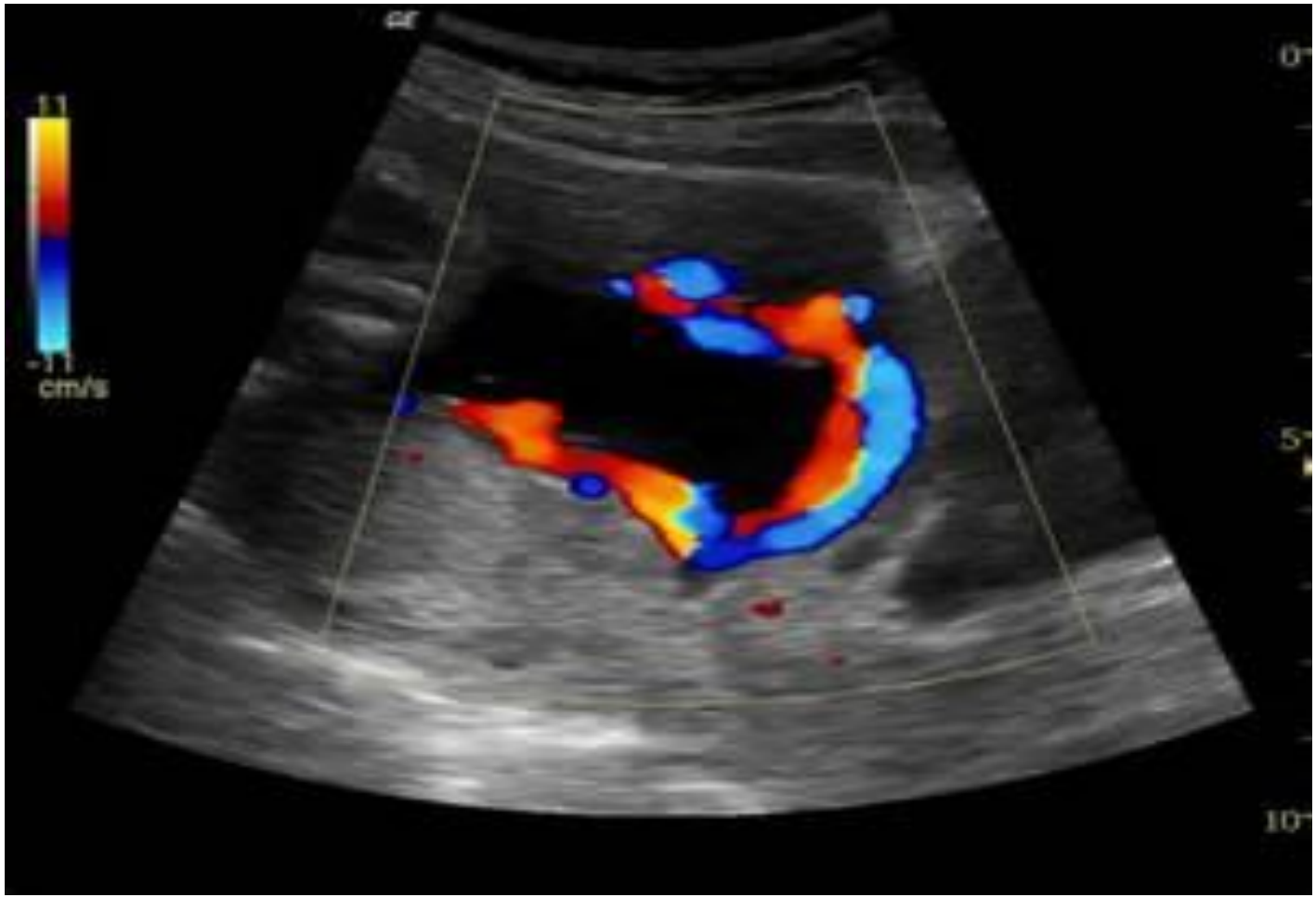





5 cm



Apt test : The blood is mixed with a small amount of sterile water to cause hemolysis of the RBCs, yielding free hemoglobin. The sample is next centrifuged for several minutes. The pink hemoglobin-containing supernatant is then mixed with 1 mL of 1% NaOH for each 5 mL of supernatant. The color of the fluid is assessed after 2 minutes. Fetal hemoglobin will stay pink and adult hemoglobin will turn yellow-brown since adult hemoglobin is less stable and will convert to hematin which has a hydroxide ligan.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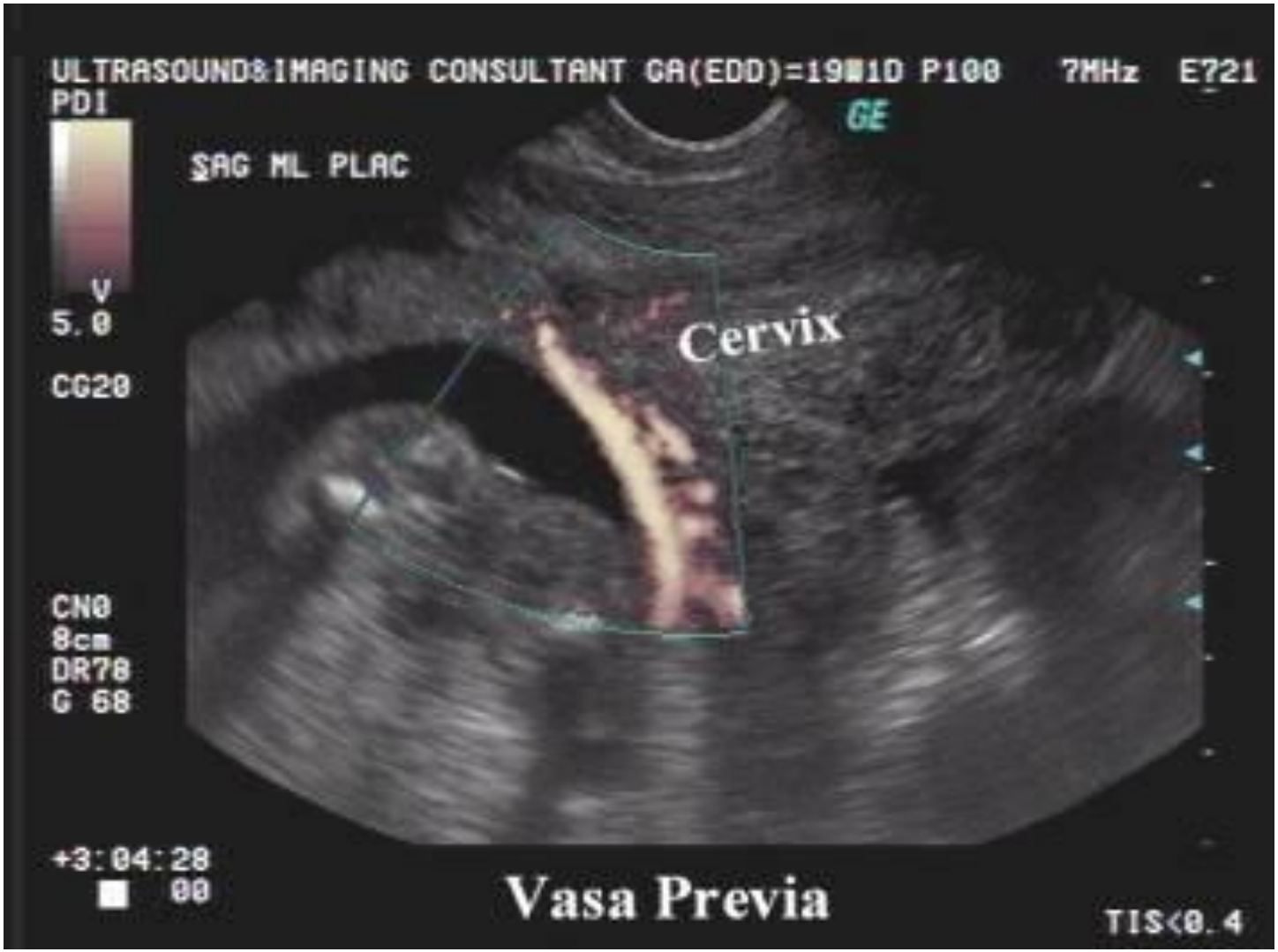
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Associated Conditions

- Low-lying placenta.
- Bi lobed placenta.
- Multi-lobed placenta.
- Succenturiate-lobed placenta.
- Multiple pregnancies.
- Pregnancies resulting from IVF.

Diagnosis

- The diagnosis of vasa previa is considered if vaginal bleeding occurs upon rupture of the membranes.
- Concomitant fetal heart rate abnormalities.
- Ideally, vasa previa is diagnosed antenatal by US with color flow Doppler.

Antenatal Management

- Consider hospitalization in the third trimester to provide proximity to facilities for emergency cesarean delivery.
- Fetal surveillance to detect compression of vessels.
- Antenatal corticosteroids to promote lung maturity.
- Elective cesarean delivery at 35 to 36 weeks of gestation.

clinical assessment for APH

- The aim is to establish whether urgent intervention is required to manage maternal or fetal compromise.
- The process of triage includes history taking to assess coexisting symptoms such as pain, an assessment of the extent of vaginal bleeding, the cardiovascular condition of the mother, and an assessment of fetal wellbeing.

Major or massive hemorrhage that is persisting or if the woman is unable to provide a history due to a compromised clinical state, an acute appraisal of maternal wellbeing should be performed and resuscitation started immediately.

The mother is the priority in these situations and should be stabilized prior to establishing the fetal condition.

Maternal Examination and investigation

- Pulse and blood pressure recorded.
- Abdominal palpation.
- Ultrasound.
- Speculum examination.
- Digital vaginal examination.
- CBC, blood group and Rh, X-match, coagulation profile.
- LFT,KFT.
- The Kleihauer test.

Fetal investigations:

- Ultrasound should be carried out to establish fetal heart pulsation.

- CTG in women presenting with APH once the mother is stable or resuscitation has commenced, to aid decision making on the mode of delivery.

In the context of suspected vasa praevia various tests exist that can differentiate between fetal and maternal blood, but are often not applicable.

Management

- Women presenting with spotting who are no longer bleeding and where placenta praevia has been excluded can go home after a reassuring initial clinical assessment.
- All women with APH heavier than spotting and women with ongoing bleeding should remain in hospital at least until the bleeding has stopped.
- Each woman must be assessed on an individual basis

- Clinicians should offer a single course of antenatal corticosteroids to women between 24+0 and 34+6 weeks of gestation at risk of preterm birth.

- In women presenting with spotting, where the most likely cause is lower genital tract bleeding, where imminent delivery is unlikely, corticosteroids are unlikely to be of benefit, but could still be considered.

- Tocolysis should not be used to delay delivery in a woman presenting with a major APH, or who is haemodynamically unstable, or if there is evidence of fetal compromise.

- Benefit from use of a tocolytic drug are those who are very preterm, those needing transfer to a hospital with NICU and those who have not yet completed a full course of corticosteroids.

- RCOG Guideline states that tocolytic therapy is contraindicated in placental abruption and is ‘relatively contraindicated’ in ‘mild haemorrhage’ due to placenta praevia.

Follow up

- Following single or recurrent episodes of APH from a cervical ectropion, subsequent antenatal care need not be altered.
- Following APH from placental abruption or unexplained APH, the pregnancy should be reclassified as ‘high risk’ and antenatal care should be consultant-led.
- Serial ultrasound for fetal growth should be performed.

Labour and delivery

- If fetal death is diagnosed, vaginal birth is recommended.(not with pacenta previa).

- Women with APH and associated maternal and/or fetal compromise are required to be delivered immediately.

- If the fetus is compromised, a caesarean section is appropriate.

- In women presenting with APH before 37 wks of gestation, where there is no maternal or fetal compromise and bleeding has settled, there is no evidence to support elective premature delivery of the fetus.

- If the woman presents after 37+0 weeks of gestation in the event of a minor or major APH, induction of labour with the aim of achieving a vaginal delivery is advised.(not in placenta previa)

Management of the third stage of labour

- Postpartum haemorrhage (PPH) should be anticipated.

- Women should receive **active management** of the third stage of labour.

- Consideration should be given to the use of **ergometrine-oxytocin** (Syntometrine) to manage the third stage of labour in women with APH resulting from placental abruption or placent praevia in the absence of hypertension

- Anti-D Ig should be given to all non-sensitized RhD-negative women after any presentation with APH.

- In the non-sensitized RhD-negative woman in the event of recurrent vaginal bleeding anti-D Ig should be given at a minimum of 6-weekly intervals.

UTERINE RUPTURE

- It is complete separation of uterine musculature through all of its layers with all or part of the fetus being out side the uterine cavity.
- Reported in 0.07-0.08% of all delivering women, but 0.3-1.7% among women with a history of a uterine scar (from a C/S for example).
- It can be spontaneous or traumatic or due to previous uterine scar
- It can occurs during pregnancy, during first stage or second stage of labor.

Risk factors

- The most common risk factor is a previous uterine incision.(**The rate is higher with classical & T-shape uterine incision** in comparison to low vertical & transverse incisions, and repeated CS) .
- High parity.
- Labor complications:

    1. CPD.
    2. Abnormal presentation.
    3. Unusual fetal enlargement (hydrocephalus).

- Trauma.
- Delivery complications:
    1. Difficult forceps.
    2. Breech extraction.
    3. Internal podalic version.

Clinical presentation

- Sudden onset of acute sever abdominal pain with some vaginal bleeding.
- Absence/ deterioration of fetal heart rate.
- Loss of station of the fetal head from the birth canal.
- Cessation of contractions.
- Easily palpable fetal parts.
- Profound maternal tachycardia and hypotension.

Prognosis

- Fetal death 50-75% ,common with extrusion.
- Maternal mortality is high if not diagnosed & managed promptly.
- Maternal morbidity: hemorrhage & infection.

Patients with a prior uterine scar should be advised to come to the hospital for evaluation of new onset contractions, abdominal pain, or vaginal bleeding.

Management

- Stabilization of maternal hemodynamics.
- Prompt C/S with either repair of the uterine defect or hysterectomy(mainly).
- Antibiotics.

Thanks