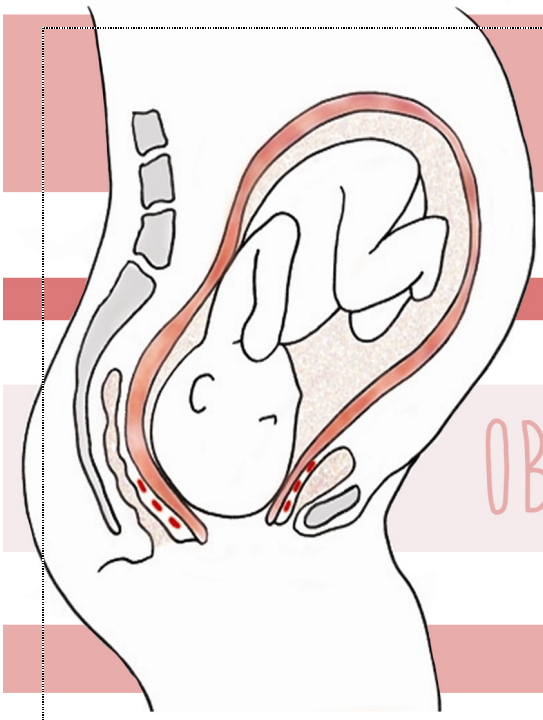

OBSTETRICS AND GYNECOLOGY

(5) Antipartum Hemorrhage

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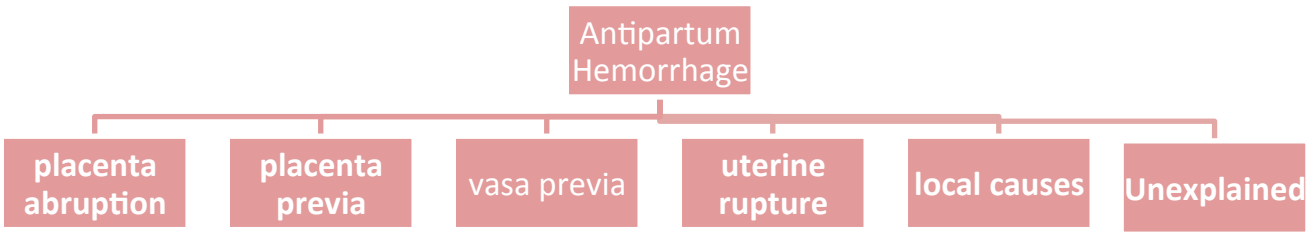
Doctor's note Team's note Not important Important 431 teamwork

Objectives:

Not given



Antipartum hemorrhage (APH):

- Bleeding from or into genital tract occurring from 24 weeks of pregnancy and prior to the birth of the baby.

- Affects 3-5% of pregnancies.

- It's the leading cause of maternal morbidity and prenatal mortality (mainly due prematurity)

- Obstetric hemorrhage remains one of the major causes of maternal death in the developing countries.

- 50% of estimated 500,000 maternal deaths occurring globally per year.

- Fifth of very preterm babies are born in association with APH.

Notes:

- Viable fetus: 24 weeks & after
- Early pregnancy bleeding: before 24 weeks
- Antipartum (late pregnancy) bleeding: 24 - 40 weeks
- Postpartum hemorrhage: after delivery

- If the patient had a bleeding once, the risk of recurrence is 25%
- 1st sign of bleeding is usually tachycardia (so monitoring of vital signs is very important)

- Antepartum hemorrhage is a risk for PPH

- APH has a heterogeneous pathophysiology and can't be predicted. (70% of cases of abruptio placenta occur in low-risk pregnancies)

There is no consistent definition of the severity of APH (often underestimated). Following definitions have been used:

Spotting	• staining, streaking, spotting
Minor Hemorrhage	• <50 ml
Major Hemorrhage	• 50-1000 ml with no signs of clinical shock
Massive	• >1000 ml and/or signs of clinical shock

Causes:

1- placenta previa

2- placenta abruption

3- local causes (cervical or vaginal lesions, cancer, infections or lacerations)

4- vasa previa

5- uterine rupture

6- Unexplained (high risk pregnancy → SGA, RRO.M, PTL, IUGR, C/S)

Causes of bleeding in early pregnancy:
- **Miscarriage**
- **Ectopic pregnancy**
- **Molar pregnancy**
- **Local causes: tumor, trauma etc**

BOX 10-1
Causes of Antepartum Bleeding.

Common

Placenta previa
Abruptio placentaePreterm labor

Uncommon

Uterine rupture
Fetal (chorionic) vessel rupture
Cervical or vaginal lacerations
Cervical or vaginal lesions, including cancer
Congenital bleeding disorder
Unknown (by exclusion of the above)

Investigations:

-CBC, RFT, LFT, Coagulation factors, blood grouping, Rh.

-ABCD

A & B: AIRWAY and breathing oxygen 10-15 L/min

C: Circulation (two large bore cannulas. 14 gauge IV lines).

D: Assess fetus and decide delivery

Clinical Examinations:

-No vaginal digital examination, speculum examination should be done to rule out local causes.

-U/S to diagnose placenta previa
(You should not perform digital examination to any patient present with vaginal bleeding after 24 weeks of gestation, instead you do an ultrasound to rule out placenta previa. Because if we touch placenta previa it will bleed more)

Management:

In the hospital maternity unity with facilities for resuscitation such as:

-Anesthetic support.

-Blood transfusion resources.

-Performing emergency operative delivery.

-Multidisciplinary team (including midwifery, obstetric staff, neonatal staff, anesthetic staff, hematologist, radiologist and vascular surgeon).

-Steroids can be given if pregnancy < 34 weeks for fetal lung maturity.

-Tocolysis shouldn't be used in (unstable patient, fetal compromise, major APH)
It's a decision of a senior obstetrician.

- Avoid nifedipine (HYPOTENSION)

- AntiD Ig should be given to all non-sensitized RH-ve if they have APH, at least 500 IU AntiD Ig followed by a test of FMH if it's more than 40ml of RBC additional Anti D required.
AntiD Ig should be given at minimum of 6 weeks intervals (in recurrent bleeding)

Risk of PPH: patient should receive active management of 3rd stage of labor using syntometrine (in absence of high B.P)

Senior consultant anesthetic care needed in high-risk hemorrhage.

Placenta Abruption & Placenta Previa:

	Placenta Abruption (abruptio placentae):	Placenta previa
Defenition	Bleeding at the decidual-palacental interface that causes partial or total placental detachment prior to delivery of the fetus over 24 weeks of gestation.	The presence of placental tissue that extends over or lies proximate to the internal cervical os (I.O). (Beyond 24 weeks of gestation).

Types	1- Concealed 2- Revealed hemorrhage	1- *Total or complete*: the placenta completely covers the I.O 2- *Partial*: the placenta partially covers the I.O 3- *Marginal*: the edge of the placenta extends to the margin of the I.O 4-*Low-lying placenta*: placental margin is within 2cm of I.O
Incidence, Prevalence & , Recurrance	Incidence: 0.4%-1% of pregnancies 40-70% occurs before 37 weeks. Severe abruption can kill fetus 1 in 1600 births. It is a significant cause of maternal morbidity and perinatal morbidity and mortality (Perinatal mortality: 12% and 77% occurs in utero) *PNm Rate:* the number of stillbirths and deaths in the first week of life per 1000 live birth. Recurrence: Several-fold higher risk of abruption in subsequent pregnancy = 5-15% Risk of third rises 20-25% *Management*: depends on condition of the mother, fetus and gestational age.	Prevalence: 3.5-4.6/1000 births Recurrence: 4-8%
Risk Factors	1- Abdominal trauma / accidents 2- Cocaine or other drug abuse (hypertension, vasoconstriction of placental b.v) 3- Polyhydramnios (sudden release of water can rupture the placenta)	1- Previous c/s, placenta previa 2- Multiple gestation, multiparity, advanced maternal age. 3- Infertility treatment,

	4- Hypertensive disease during pregnancy (3-4 fold increase) 5- premature rupture of membranes (incidence 5%) 6- Chorioamnionitis, IUGR 7- Previous abruptio (recurrence 5-15%. Third rises the incidence 20-25%) 8- With increasing age, parity and smoking 9- Uterine anomalies, leiomyoma, uterine synchiae 10- First trimester bleeding 11- Thrombophilia: inherited factor V Leiden Acquired: APL syndrome	previous abortion 4- Previous intrauterine surgical procedures (Site for abnormal zygote implantation) 5- Maternal smoking, cocaine use 6- Non-white race, male fetus
Presentation	- Vaginal bleeding (mild, moderate or severe) "the bleeding could be internal only" -Abdominal pain or back pain (if posterior placenta) -DIC occurs in 10-20% of severe abruption and death of fetus (severe if placenta separate >50%) "You should start blood transfusion immediately" - High B.P, FH abnormalities or death - Tender or rigid or firm abdomen (woody feel) - Hypertonic uterine contractions Complications: *1- DIC*: - Hypovolemic shock, renal failure, ARDS, multiorgan failure - Hysterectomy, blood transfusion, rarely death *2- Couvelaire uterus* (extravasation of blood into the myometrium) Chronic abruption: Light, chronic, intermittent bleeding,	- Painless, recurrent vaginal bleeding in 70-80% - Uterine contractions in 10-20% - Soft abdomen, normal fetal heart, mal presentation - Avoid vaginal, rectal examination or sexual intercourse

	oligohydroamnious, IUGR, pre-ecclampsia, preterm rupture of membranes **Coagulation studies usually normal.**	
Outcome	***Increased fetal & neonatal mortality and morbidity due*** **asphyxia, IUGR, hypoxemia, and preterm delivery.**	***Morbidity and mortality*****:** **- Hemorrhage** **- Hypovolemic shock (renal.f, shehan's syndrome, death)** **- Blood transfusion risk** **- Hysterectomy, uterine/iliac artery ligation or embolization of pelvic vessels** **- Increase mmR** **- Increase neonatal morbidity**
Associated conditions		**- Placenta accreta: complicated 1-5% patients with placenta previa.** **If previous c/s: 11-25%** **Two c/s: 35-47%** **Three c/s: 40%** **Four c/s: 50-67%** **- Preterm labor, rupture of membrane, mal presentation, IUGR, vasa previa, congenital anomalies, amniotic fluid embolism.**

Note: (important)

Placenta abruption is a normally implanted placenta, whereas placenta previa is implanted in the lower uterine segment (which is abnormal)

Abnormal placental attachments:

1) Placenta Accreta (the most common): occurs when the villi invade the deeper layers of the endometrial deciduous basalis.

2) Placenta Increta: occurs when the villi invade the myometrium but do not reach the uterine serosal surface or the bladder.

3) Placenta Percreta: occurs when the villi invade all the way to the uterine serosa or into the bladder.

The management of all three types is hysterectomy.

Investigations for placenta previa:

1- abdominal u/s: false +ve 25% due to over distended bladder or uterine contractions, or can be missed if fetal head is low in pelvis

2- transvaginal u/s: (if diagnosis by abdominal u/s not certain), or trans perineal u/s

3- MRI: High cost

- Transvaginal US can accurately diagnose placenta previa in virtually all cases.
- Placenta Previa predisposes to preterm delivery, which poses the greatest risks to the fetus.

Management of placenta previa:

Treatment depends on gestational age, amount of vaginal bleeding, maternal status and fetal condition.

Expectant management:

If fetus is preterm (less than 37 weeks):

-Hospitalization

-Investigations (CBC, RFT, LFT, coagulation factors, blood grouping and Rh)

-Steroids (dexamethasone) between 24-34 weeks (because the lungs of the fetus are not yet matured)

-AntiD Ig if the mother is Rh negative

-Cross match blood and blood products.

-CTG

If fetus more than 37 weeks: elective c/s

If severe bleeding or fetal distress: emergency c/s

Notes:

We can give tocolytics as a temporary measure in preterm if there is no NICU in the hospital, so we can transfer the mother to other hospital.

But if the bleeding is severe, don't give tocolytics and deliver the fetus immediately.

Vasa Previa:

-Fetal BV cross or run near the cervix.

-Rare but very serious cause of vaginal bleeding (1:2000)

-Bleeding is fetal in origin associated with velamentous cord insertion where fetal blood vessels in the membranes cross the cervix.

-Rupture of membranes can lead to tearing of fetal B.V with exsanguination of the fetus.

-Tests are often not applicable.

Diagnosis: by color flow Doppler u/s

Risk factors:

1- Velamentous insertion (not every pregnancy with velamentous insertion results in vasa previa, only when BV near the cervix)

2- Bi-lobed or succenturiate lobed placenta

3- Multiple pregnancy

4- Low-lying placenta

5- IVF pregnancy

- Management: C-section (digital exam is contraindicated)

The term velamentous insertion is used to describe the condition in which the umbilical cord inserts on the chorioamniotic membranes rather than on the placental mass.

Summery

- In any patient presenting with antepartum hemorrhage, you should always start with U/S so you can rule out PLACENTA PREVIA (digital exam is contraindicated).

Placenta Abruption	Placenta previa
Abnormal fetal heart	Normal fetal heart
Hard abdomen	Soft abdomen
The fetus in normal position	The fetus in transverse position
Digital exam not contraindicated	Digital exam contraindicated

From Essentials of Obstetrics and Gynecology:

The diagnosis of Placenta Abruption is made **clinically.** Suspect this diagnosis if a patient presents with **painful vaginal bleeding** in association with **uterine tenderness, hyperactivity, and increased tone**. (Rigid)
- US can only detect 2% of Placenta Abruption but we still use US to **exclude co-existing Placenta Previa.**
- The use of **tocolytics or uterine relaxants is not advised**. Uterine tone must be maintained to control bleeding following delivery, or at least to control the bleeding sufficiently to allow a safe hysterectomy to be performed, if necessary.

From Kaplan Obstetrics and Gynecology:

Uterine rupture is **complete separation** of the wall of the pregnant uterus with or without expulsion of the fetus that endangers the life of the mother or the fetus, or both.
- The most common findings are vaginal bleeding, loss of electronic fetal heart rate signal, abdominal pain, and loss of station of fetal head.
- Confirmation of the diagnosis is made by **surgical exploration** of the uterus and identifying the tear.

- The most common risk factors are previous **classic uterine incision, myomectomy**, and excessive oxytocin stimulation. Other risk factors are grand multiparity and marked uterine distention.
- A vertical fundal uterine scar is 20 times more likely to rupture than a low segment incision. Maternal and perinatal mortality is also much higher with the vertical incision rupture.
- Treatment is surgical. **Immediate delivery** of the fetus is imperative. Uterine repair is indicated in a stable young woman to conserve fertility. Hysterectomy is performed in the unstable patient or one who does not desire further childbearing.

For mistakes or feedback

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