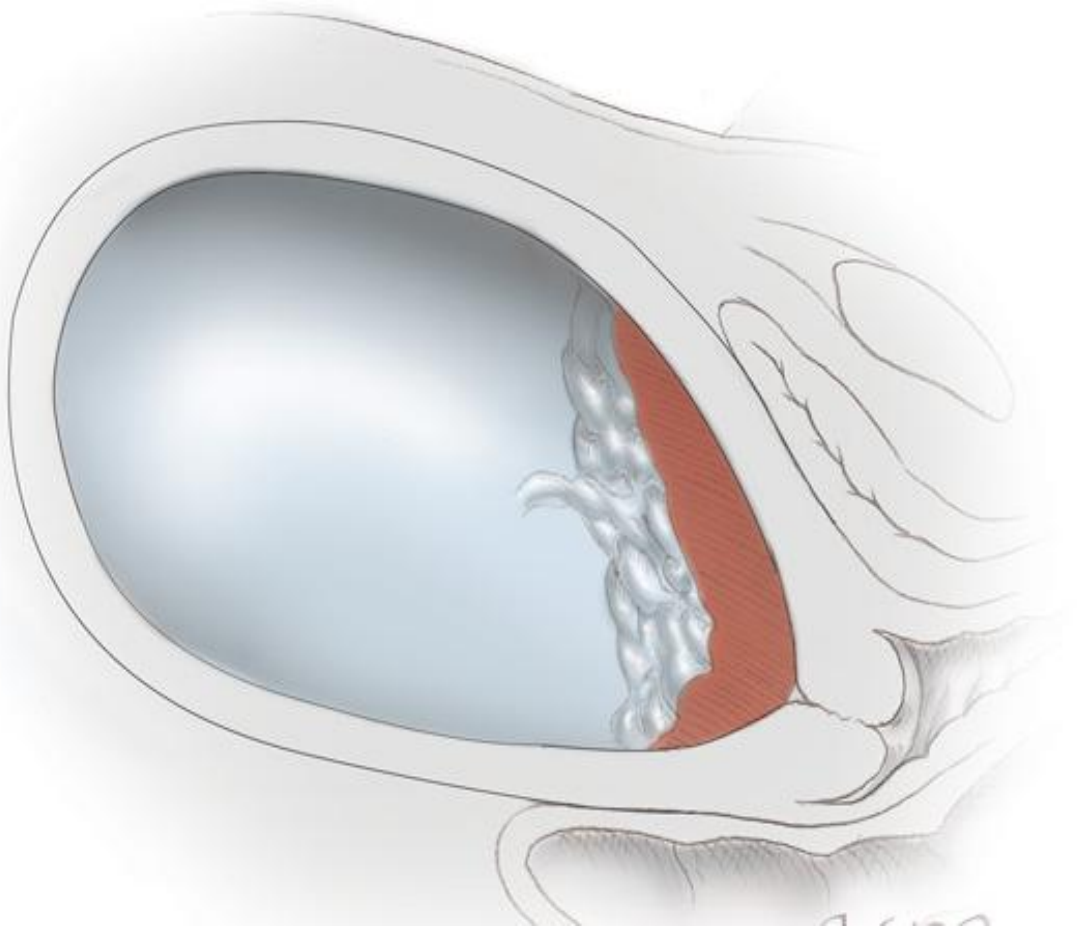


ANTEPARTUM HEMORRHAGE



Outline

➤ ***Obstetric hemorrhage***

- ◆ Introduction
- ◆ Physiologic changes of pregnancy
- ◆ Class /Grades
- ◆ Causes

➤ ***APH***

- ◆ Definition
- ◆ Causes
- ◆ Diagnosis
- ◆ Management principles

Introduction

- Obstetrics is “**bloody** business”
- Hemorrhage is still the major cause of maternal death
- In about 30% of direct maternal death are due to hemorrhage
- With improved obstetric care death from hemorrhage has decreased significantly

Cont'd.

➤ Hemodynamic changes during Pregnancy

- ⊕ *Plasma volume expansion- 50%*
- ⊕ *Increase in red blood cell mass- 30%*
- ⊕ *Maternal cardiac output rises - 30% -50%*
- ⊕ *Systemic vascular resistance falls*

Cont'd.

- ✦ *Fibrinogen and the majority of procoagulant blood factors (II, VII, VIII, IX, and X) increase*
- ✦ These physiologic changes are **protective** of maternal hemodynamic status and, thus, allow for further physiologic **adaptations** that accompany obstetrical hemorrhage

Classification of hemorrhage

Class 1 hemorrhage

 **1000ml** blood loss

 **15%** of volume deficit

 **Dizziness, palpitation**

Cont'd.

➡ **Class 2 hemorrhage**

➡ **1500ml** blood loss

➡ **20% to 25%** volume deficit

➡ Tachycardia, tachypnea

Cont'd.

➡ **Class 3 hemorrhage**

- ➡ **2000ml blood loss**

- ➡ **30% to 35% fluid deficit**

- ➡ **Significant tachycardia(120 to 160 beats)**

- ➡ **Tachypnea(30 to 50)**

- ➡ **Hypotension**

Cont'd.

➤ **Class 4 hemorrhage**

➤ **> 2500ml** blood loss

➤ **40%** deficit

➤ **Absent distal pulses, cardiogenic shock, air hunger, and oliguria or anuria**

Causes of obstetric hemorrhage

◆ Timing of **hemorrhage** used to classify

 Early TM bleeding

 **APH**

 PPH

ANTEPARTUM HAEMMORHAGE

- ◆ **APH-** is bleeding from **genital tract** after the **28th** weeks of gestation **up to delivery** of the fetus
- ◆ The incidence is **2-3%** of all pregnancies

Cont'd.

➤ Causes of APH

◆ Placental causes

- Abruptio placenta
- Placenta praevia
- Vasa praevia

◆ Non placental causes

- Local causes (pathology of the cervix, vagina & vulva)
- Heavy show
- Uterine rupture
- Bleeding disorder

◆ Unclassified causes(50%)

Cont'd.

➡ **General measures**

- ➡ **Take thorough hx and do pertinent P/E**
- ➡ **Don't do PV and PR examination**
- ➡ **Secure iv line and resuscitate if needed**
- ➡ **Determine blood group and Hct**
- ➡ **Prepare blood products**
- ➡ **Try to know the source of the bleeding**

Cont'd ...

➡ Diagnosis

- ✦ **Ultrasound** to localize the site of placenta
- ✦ Using **clinical** information
 - ✦ To dx abruptio placenta
 - ✦ PT, PTT test may be done if there is suspicion of bleeding disorder
- ✦ **Speculum examination** 48hrs after bleeding stopped
 - ✦ To diagnose local causes
 - ✦ To collect specimen for cervical smear

PLACENTA PREVIA

- **Definition:** Placental implantation in the lower uterine segment within the zone of effacement & dilatation of cervix or before presenting part

- **Predisposing factors**
 - Scarred uterus
 - Multiparty
 - Multiple pregnancy
 - Living in higher attitude
 - Smoking

Cont'd.

- Placentas that lie close to but not over the cervical-os, during the **2nd trimester**, are unlikely to persist at term
- (1) Development of the LUS relocates the stationary lower edge of the placenta away from the os(**migration of the placenta**)
 - LUS **0.5 cm** (20 weeks) – **5 cm** (term)
- (2) Progressive unidirectional growth of trophoblastic tissue toward the fundus within the relatively stationary uterus (**trophotropism**) results in upward migration of the placenta

Clinical course and diagnosis of PP

- ➡ The mean GA at Dx. = **32.5 wks**
- ➡ **PAINLESS, CAUSELESS, RECCURENT BRIGHT RED** Vaginal bleeding
- ➡ Why bleeding?
 - Formation of the LUS → detachment of the placenta
 - Placentitis
 - Direct trauma → coital, PV exam., douching
- ➡ Can also remain asymptomatic...**10%** up to term
- ➡ 1st episode usually **slight** → get more sever later on

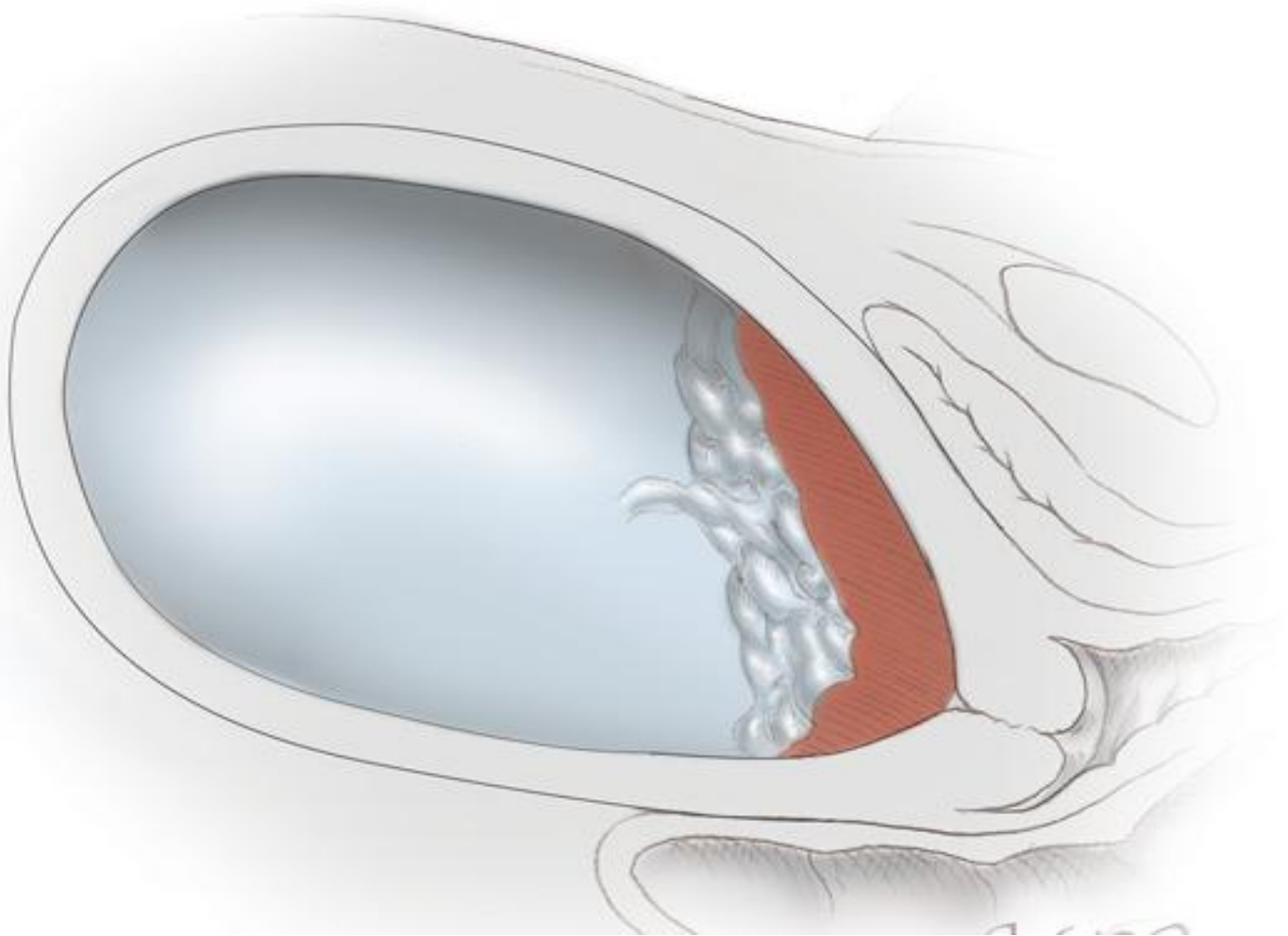
Cont'd.

- 🌸 Usually have soft uterus
 - 🌸 Higher rate of malpresentation
 - 🌸 Unengaged presenting part
- ✗ Diagnosis can be confirmed by ultrasound examination

Cont'd.

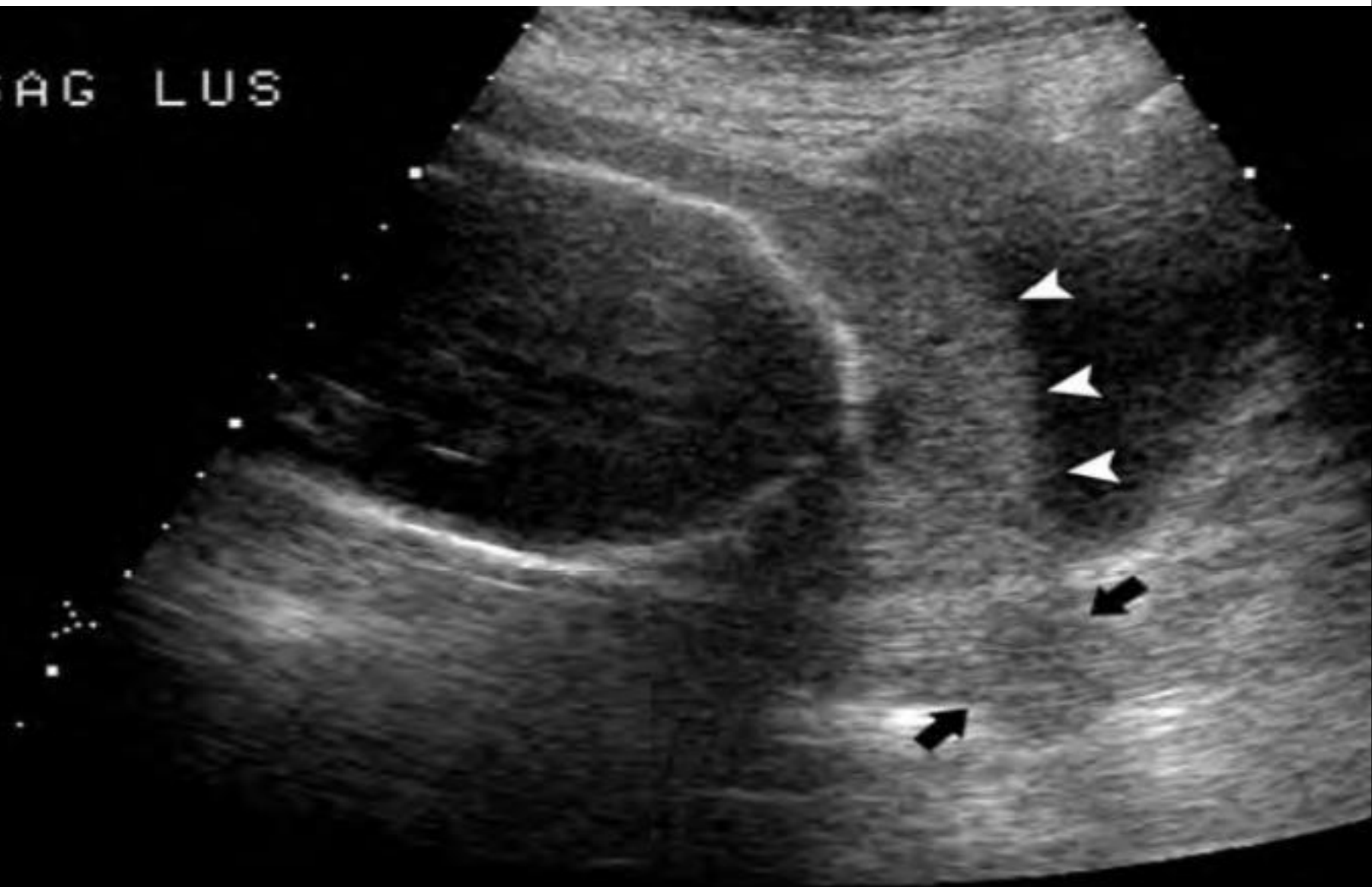
- ✿ Classification: **minor degree** (type I, type IIa) & **major degree** (Type IIb, III, IV)
 - ☉ **Type I (Low lying)** - Placenta is implanted in lower segment but doesn't reach to internal os
 - ☉ **Type II (marginal)** - (anterior & posterior) – Placenta reaches the internal os
 - ☉ **Type III (partial)** – Placenta covers the internal os partially
 - ☉ **Type IV (totalis)** – The placenta covers the whole internal os

Cont'd.



transabdominal sonography

SAG LUS



Cont'd.

➡ **Management**

General

- ➡ Admission to a unit with operative and blood transfusion facility
- ➡ Resuscitation as indicated
- ➡ Avoid vaginal /rectal examination
- ➡ Monitor fetal & maternal condition
- ➡ Hct, Blood group & Rh determination
- ➡ Prepare at least 2 units of cross –matched blood
- ➡ Anticipate PPH (Due to uterine atony or abnormally adherent placenta)

Cont'd.

- Decide on the final mode of management **conservative** versus **termination**
- Delivery is indicated if
 - ✗ 37 wks completed
 - ✗ Severe hemorrhage
 - ✗ IUFD
 - ✗ IUGR
 - ✗ NRBPP
 - ✗ Major congenital anomalies

Cont'd.

- **Expectant Management:** if bleeding is minimal and if it is a preterm pregnancy:
 - Ⓢ Bed rest in hospital
 - Ⓢ Maternal condition – vaginal bleeding & vital sign
 - Ⓢ Fetal condition – FHB & Kick chart daily, Biophysical profile once or twice per week
 - Ⓢ Betamethasone 12 mg in 2 doses for 28-34 weeks gestation
 - Ⓢ Iron supplementation
 - Ⓢ Termination after 37 completed weeks of gestation

Cont'd.

➤ Mode of delivery

➡ *Vaginal* – type I or type II a

➡ **Caesarean section-** If

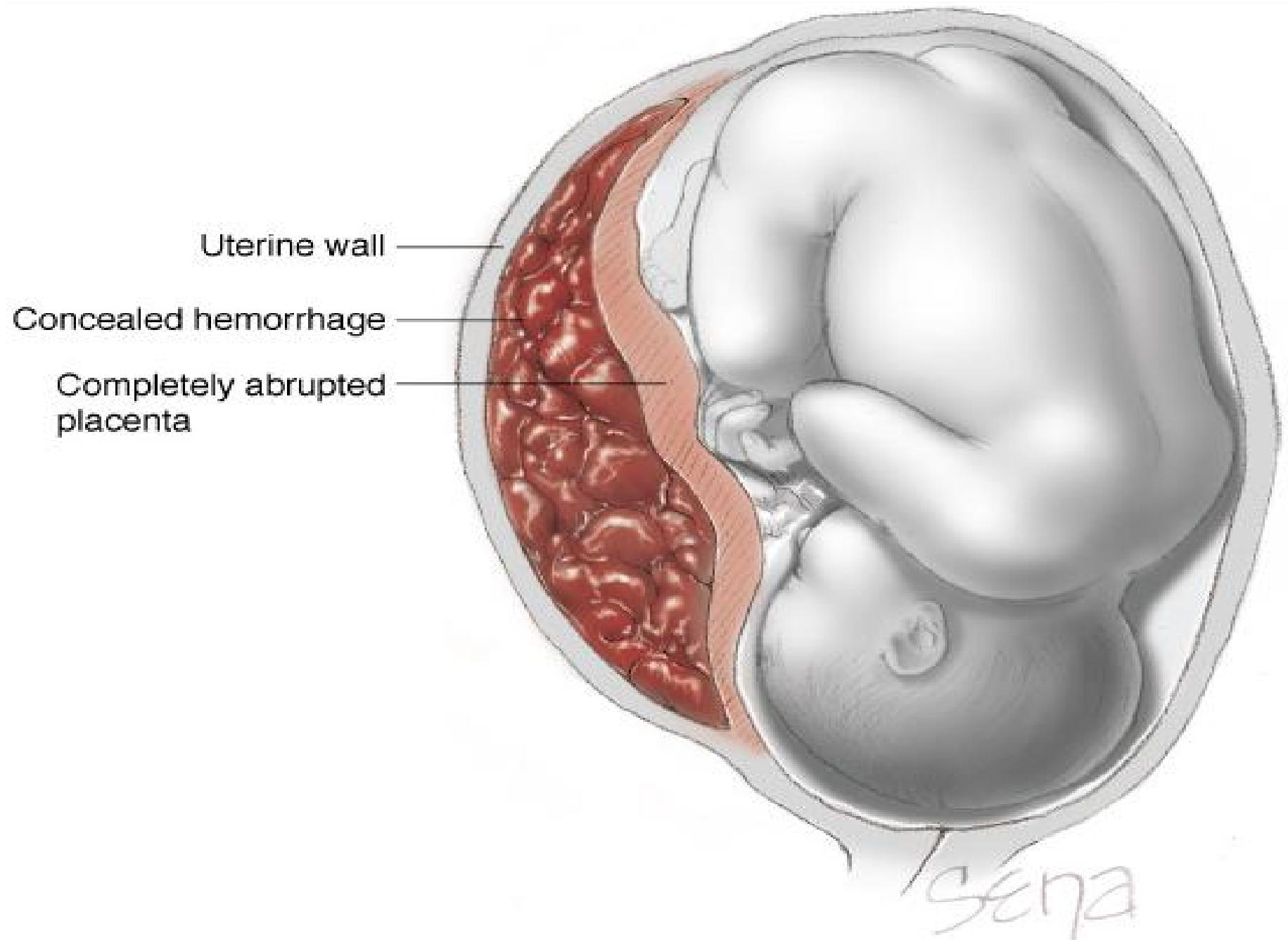
Ⓢ Major degree of placenta previa (Type II posterior, III & IV)

Ⓢ Fetal distress

Ⓢ Severe uncontrolled hemorrhage

ABRUPTIO PLACENTAE

- **Definition:** premature Separation of the whole or part of the placenta from the **normal** implantation site
- **Types**
 - ✦ Revealed
 - ✦ Concealed
- It might as well be
 - ✦ Partial abruption
 - ✦ Total abruption
 - ✦ Marginal separation



Cont'd.

➤ *Pathogenesis*

- ✱ It is not clear whether abruptio placenta results from a single pathologic event or is the culmination of a longer-standing disorder of the fetal-placental interface

➤ Initially hemorrhage into decidua basalis



decidual hematoma & decidua splits



further separation → more blood loss → shock

Cont'd.

➤ ***Risk factors for AP***

- Ⓢ Advanced age and parity
- Ⓢ Preeclampsia
- Ⓢ Chronic hypertension
- Ⓢ Trauma
- Ⓢ PROM
- Ⓢ Multifetal pregnancy
- Ⓢ Cigarette smoking
- Ⓢ Myoma

Cont'd.

➡ **Clinical feature**

-Highly variable depend on the severity & +/- complications

➡ Vaginal bleeding = dark red, painful **(80%)**

➡ Uterine tenderness & back pain & abdominal Pain **(50%)**

➡ Uterine hyper tonus (focal or generalized)

➡ Idiopathic preterm labor

➡ Fetal distress / NRFHRP

➡ ARF

➡ Coagulopathy

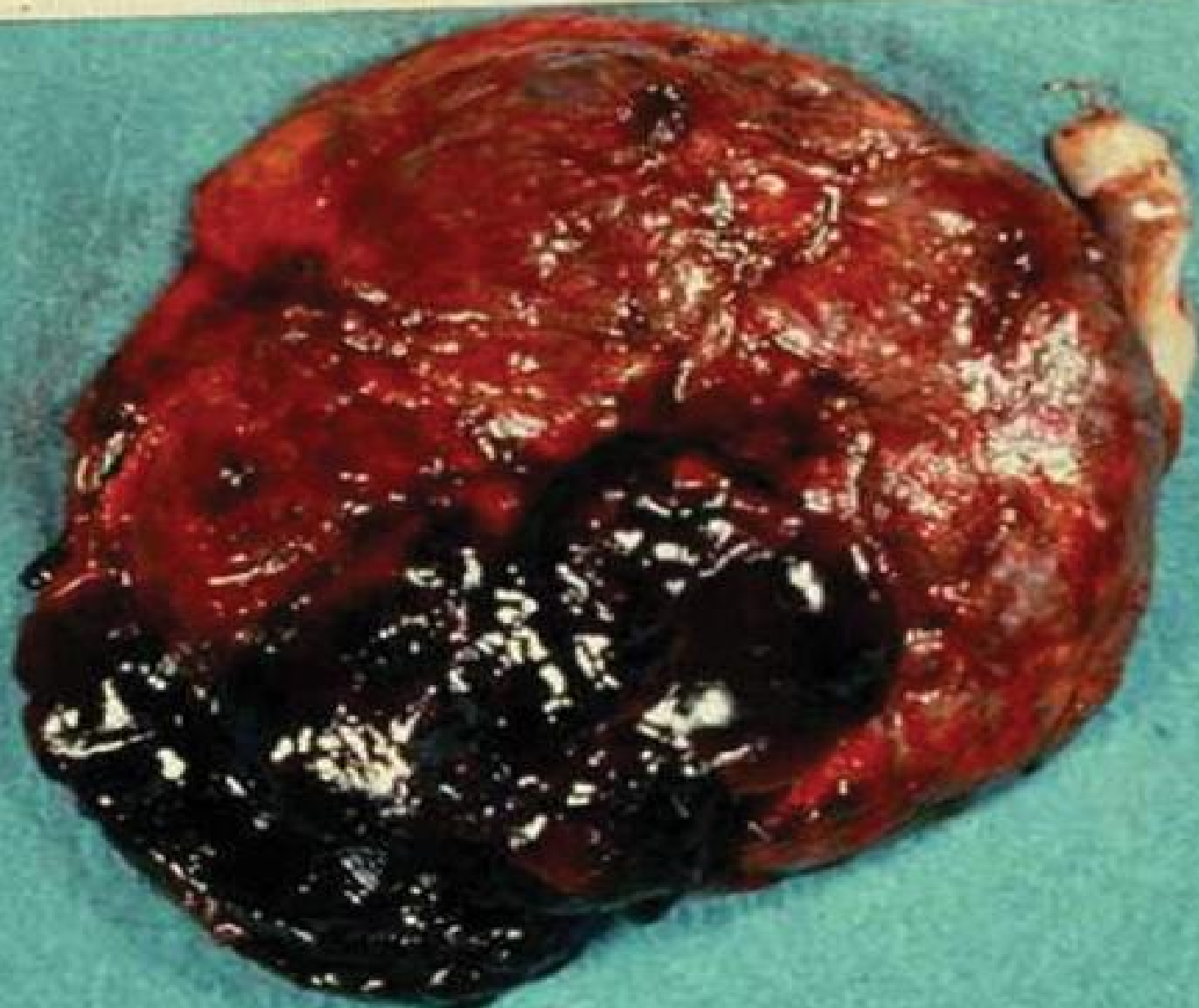
- the amount of bleeding does not correlate with the extent of maternal hemorrhage!!! (concealed type)

Grades of AP

Sn /Sx	I	II	III
Bleeding	slight	Mild- mod	Mod-sever
PR	normal	+/- elevated	elevated
BP	normal	maintained	shock
Ux irritability	Usually present	irritable	Tetanic/pain
FHRP	normal	distress	Death
Fibrinogen	normal	150-250	<150
Separation	<25%	25-50%	>50%
Blood loss	<1L	1-2L	>3L




Cont'd.

- ✱ The diagnosis of placental abruption is primarily clinical, but u/s, laboratory, or pathologic findings can be used to support the clinical diagnosis






Cont'd...

Management

-  Depend upon the severity of the abruption, the gestational age, and maternal and fetal status
-  **Live fetus at or near term** — The fetus should be delivered expeditiously by the quickest, safest method if it is alive, the pregnancy is at least 37 weeks of gestation
-  Vaginal delivery is reasonable if the maternal status is stable and the fetal heart tracing is reassuring

Cont'd...

-  **Live fetus remote from term** — Delaying delivery of pregnancies under 37 weeks of gestation is reasonable when tests of fetal well-being are reassuring and there is no evidence of maternal coagulopathy, hypotension, or ongoing major blood loss
-  **Glucocorticoids to promote fetal lung maturation**
-  **Fetal assessment with biophysical profile is performed at least weekly**

Cont'd.

- ✎ Fetal demise at any GA — When fetal death has occurred, the mode of delivery should be that which minimizes the risk of maternal morbidity or mortality
- ✎ **Vaginal delivery** is preferable unless urgent delivery is needed to enable stabilization of the mother

Cont'd...

➡ Complications after severe abruption

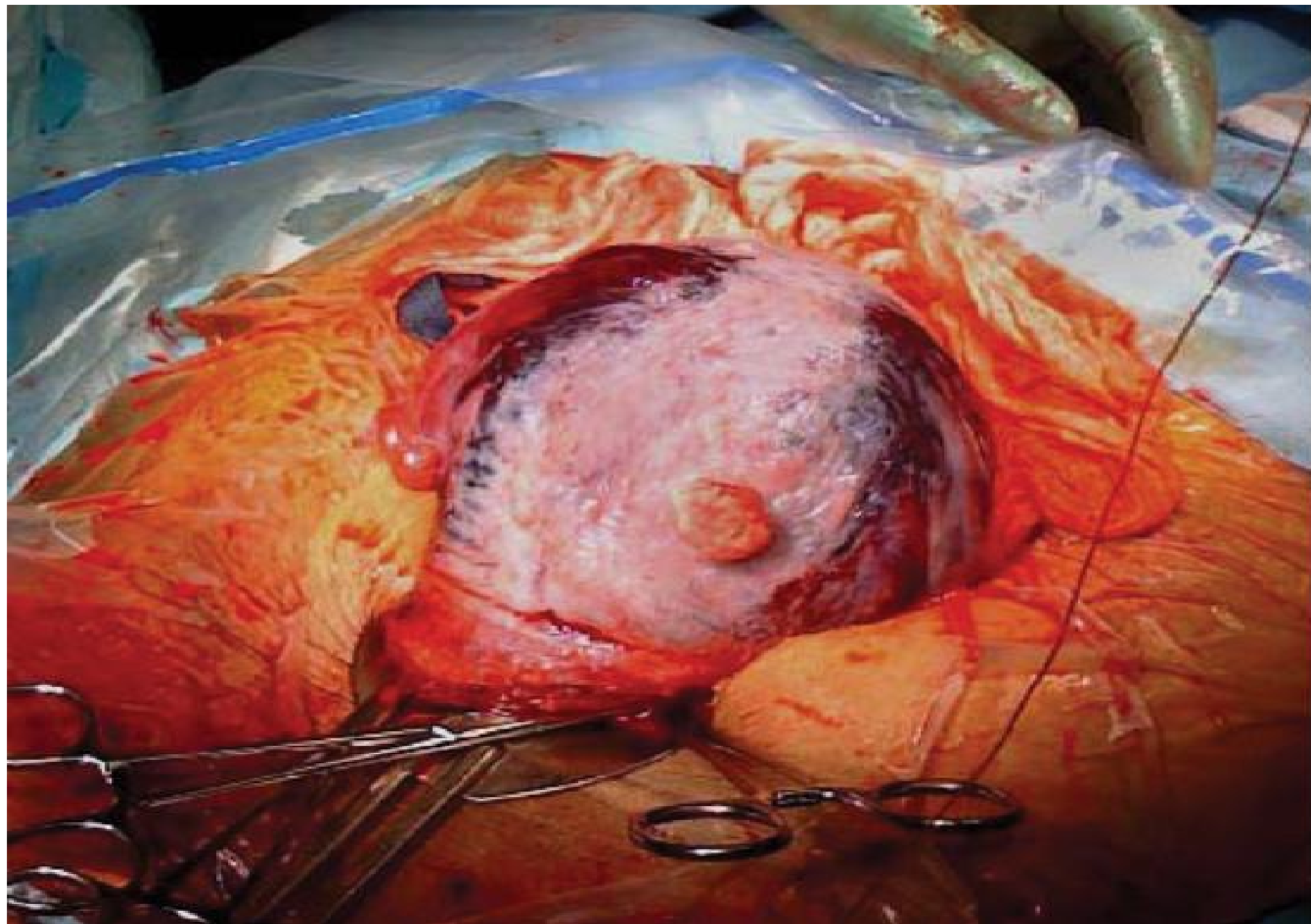
- ◆ Couvlaire uterus

 - Ⓢ oxytocin infusion

 - Ⓢ Hysterectomy reserved for cases of uterine atony & hemorrhage unresponsive to uterotonic agents

- ◆ Acute renal failure

- ◆ DIC



Vasa praevia

- Refers to fetal vessels that traverse the membranes located in the lower uterine segment in advance of the fetal presenting part
- Diagnosis: Fetal distress with no maternal vital sign derangement and most commonly occurs after rupture of membrane

Velamentous cord insertion

Velamentous cord



The umbilical cord placental insertion site is membranous. The velamentous vessels are surrounded only by fetal membranes, with no Wharton's jelly.

Cont'd.

- ➡ Apt (alkaline Phosphatase test) test for suspected fetal hemorrhage
- ➡ U/S with doppler flow can detect it antenatal
- ➡ Management: Emergency cesarean section for viable live fetus

Cont'd.

➡ **Local causes-** Treat primary cause

➡ **APH of unknown cause**

- ⊙ Similar to any APH

- ⊙ Induction of labor after 37 completed weeks of gestation

- ⊙ Cesarean section indicated if severe bleeding or other obstetric indications

SUMMARY

- ➡ ***Obstetric hemorrhage is the leading cause of maternal mortality***
- ➡ ***Any APH should be considered as PP unless proved***
- ➡ ***PP is more dangerous to the mother than the fetus unlike AP where the reverse holds true***
- ➡ ***Maternal condition, fetal condition & GA will determine the Mg't principle of any APH***
- ➡ ***Any APH should be managed in a facility where there is blood & blood product & 24hr operative delivery***
- ➡ ***D/t factors should be considered to decide the mode of delivery***
- ➡ ***Always anticipate and prepare for PPH in a woman with APH***

Thank You