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# Introduction

**Definition** of early pregnancy : pregnancy until 12 weeks gestation.

**Symptoms**: amenorrhea, pain, bleeding and vomiting.

**Differential Diagnosis**: related to pregnancy or other ass. Conditions.

I**nvestigations**: Routine plus US scan ± serum βhCG

| Symptoms | Differential Diagnosis |
| --- | --- |
| Amenorrhoea, pain, bleeding | . Miscarriage<br>.Ectopic pregnancy<br>.PUL<br>.GTD<br>.Cervical polyp |
| Amenorrhea, acute pelvic pain | . Ectopic pregnancy<br>.PID<br>.IUD in-situ<br>.Ovarian cyst in pregnancy<br>.Appendicitis |
| Amenorrhea, vomiting | Hyperemesis gravidarum |
| | |

# Early Pregnancy Complications & Miscarriage

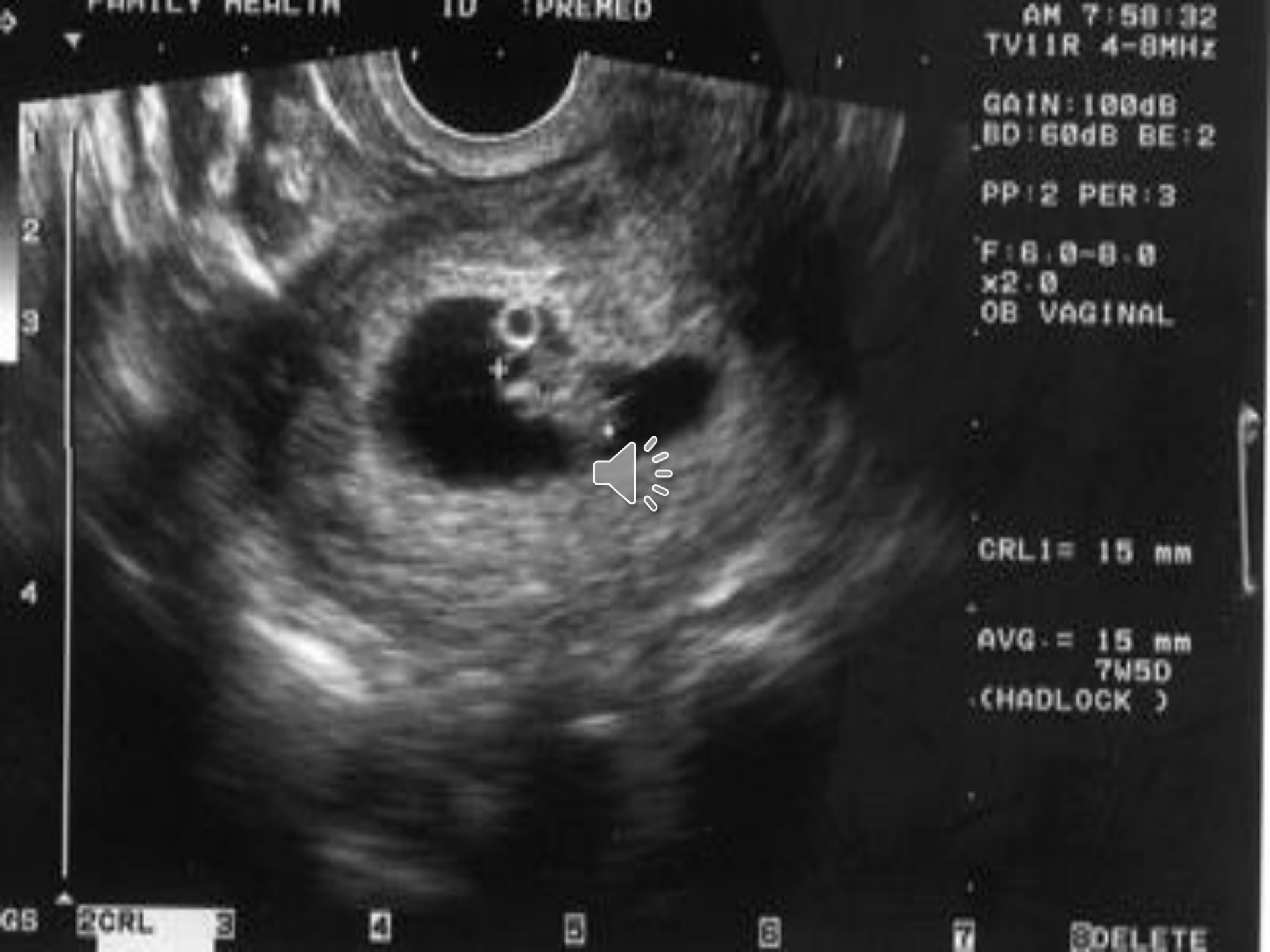
- Gestational sac increases by 1.3mm/day.
- Yolk sac should be seen next
- Fetal pole (GS 18mm), FH at 6 weeks (CRL 4-10mm)

Scan terminology : first scan report

1. Viable IUP
2. IUP of uncertain viability 10%(CRL <7mm ,GS ≤ 25 mm)
3- Miscarriage
4- Ectopic
5- PUL 10%

# Management based on USS appearances

| US appearance | Diagnosis | Plans of management |
|---|---|---|
| GS≤25mm or CRL≤7mm and no FH | IUP of uncertain Viability | Rescan 1 week |
| GS≥25mm and no FH or CRL≥ 7mm and no FH | Empty sac | Manage as non-viable ???? Rescan 7-10 days |
| Empty uterus and no adnexal abnormality | PUL | Manage as discussed later |
| Empty uterus, adnexal mass and no fluid | Un-ruptured Ectopic | |
| Empty uterus, adnexal mass and fluid in POD | Ruptred ectopic | Admit for assessment and surgery |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TVI IR 4-8MHz
GAIN:100dB
BD:60dB BE:2
PP:2 PER:3
F:6.0-8.0
x2.0
OB VAGINAL
CRL1= 15 mm
AVG.= 15 mm
7W5D
(HADLOCK )
2CRL
DELETE

# Human chorionic gonadotrophin βhCG

.Double approximately every 48 hrs up to 8 wks

.Increases ≤ 66% over 48hr is associated with EP and Miscarriage

.15% of normal pregnancy will have abnormal doubling time

.13% of ectopic pregnancy will have a normal doubling time

.Discriminatory zone 1000-2000IU/L at TVS

. MOST useful for : diagnosis of asymptomatic ectopic pregnancy

# Miscarriage

.Vaginal Bleeding and/or Loss of pregnancy before fetal viability 24 weeks gestation(UK)

. Early miscarriage ≤ 12 weeks

. Late Miscarriage ≥ 12 weeks

.Bleeding complicate 21% of clinically detected pregnancies

.15% of clinically recognized pregnancies spontaneously miscarry

# Aetiology

**Genetic:** 50% of clinically identifiable first trimester miscarriages are chromosomally abnormal. The risk falls with advancing G.A,the most common is Trisomy, followed by monosomy X and triploidy.

**Second Trimester:** Uterine abnormality, Cx. Weakness, bacterial vaginosis and multiple pregnancy.

**Infection** (rare) : lesteria monocytogenes, CMV, rubella andmycoblasma hominis.

**Unexplained:** 20% of miscarriages have no identifiable cause

# Types of miscarriages

1- Threatened miscarriage

2- Missed miscarriage(*early embryonic demise*)

3- Incomplete miscarriage

4- Complete miscarriage

5- Septic miscarriage

6- Recurrent miscarriage

# Threatened miscarriage

Any vaginal bleeding, painful or painless before 24 completed weeks

Management:

. U/S : majority will have viable pregnancy

. BG & Rh , Reassurance

.Speculum…..R/O local causes, confirm Dx.( closed Cx.)

## Septic miscarriage

Occasionally, RPOC may become infected. Will present with general malaise, offensive v.discharge and fever

Management: Admission for IV antibiotics and surgical evacuations of the uterus

# Continuo

**Missed Miscarriage** :This occurs when the embryo has died or has not developed normally.

Diagnosis: U/S when the G.S ≥ 25 mm in diameter with no identifiable embryo -

or there is no FHB when CRL ≥7mm.

- This may be entirely asymptomatic

**Incomplete miscarriage :** this occurs when some of the product of the conception have been passed and some are left in the uterine cavity.

- Diagnosis: clinically if tissue seen passing through open Cx. Os or by U/S

.Vagal shock…..removal of tissue from Cx. Os !!!

**Complete miscarriage :** this is the endpoint of all miscarriages and implies that all product of conception have passed.

- Diagnosis is made clinically when bleeding stops and pregnancy symptoms disappear or on U/S when the uterine cavity is empty.

# Management Options

a. Expectant

b. Medical

c. Surgical

. Patient makes specific request

. Changes mind during conservative management.

. Heavy bleeding and/or sever pain

. Infected tissue

# Expectant

**Requirements**

-Motivation and preparation

-Thorough explanation on what to expect and what to do

*-90% will miscarry within 3 weeks of expectant mang*.

-Rescan 2-3 weeks, contact number of EPU.

**-Complications**

. Infection 3%( same Med. & surg.)

. Hemorrhage 3%

# Medical management

Uterotonic agent to facilitate the evacuation of the uterus (i.e. misoprostol)

Associated with pain, bleeding, fever and diarrhea .

U/S : to confirm completion of miscarriage.

Efficacy for less than 10 weeks .....92-94%

C.I ..... Mitral stenosis, hypertension, haemogloinopathy, anticoagulation and asthma.

SMM..... Vacuum aspiration, E&C and D&C

Anti-D Ig.... For all threatened or spontaneous miscarriages ≥ 12 wks and all the miscarriages where the uterus evacuated surgically.

Antibiotics..... Not for all women , if clinically indicated.

# Pregnancy of unknown location
# PUL

Positive pregnancy test but no demonstrable IU or extrauterine pregnancy on TVS

. Very early IU pregnancy ...27%

. Complete miscarriage ...9%

. Early ectopic pregnancy...14%

**50% likely to be failing pregnancy**

Management:

. Serum hCG and repeat in 48 hrs

. Repeat TVS when hCG ≥ 1000 IU/L

. Follow-up until IUP identified, ectopic diagnosed or hCG spontaneously falls.

# Recurrent pregnancy loss

**Definition**: Tow or more consecutive pregnancy losses ≤ 24 wks gestation.

**Incidence**: 1% of women suffer from recurrent miscarriage

**Aetiology :**

. Unexplained....majority will have no identifiable cause.

. Age..... Chromosomal abnormality

. Abnormal parentral karyotype...3-5% , balanced translocation in 2/3 and Robortsonian translocation in 1/3

. Antiphospholipid antibody syndrome...15% of R.M ..abnormal placentation.

. Genetic thrombophilia...up to 5%.... Activated protien C resistance, antithrombin ③ deficiency , protien C and S deficiencies.

. Uterine anomalies.....5% in infertility and up to 15% in RPL..... Septate uterus has the worst reproductive outcome

# Clinical assessment

Investigation

. Karyotype for both partners

. HSG +- Hysteroscopy

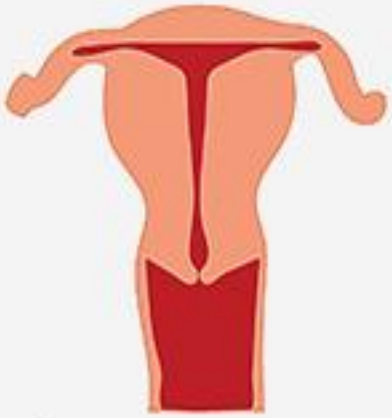
. Pelvic U/S

. Antiphospholipid syndrome screen( Anticardiolipn abs, and lupus anti-coagulant...DRVVT)

. Thrombophilia screen(activated protien C resistance, Antith.3 , pro.C & S).

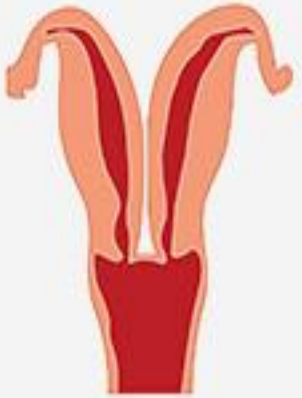
# Congenital Mullerian Anommalies

Normal Uterus

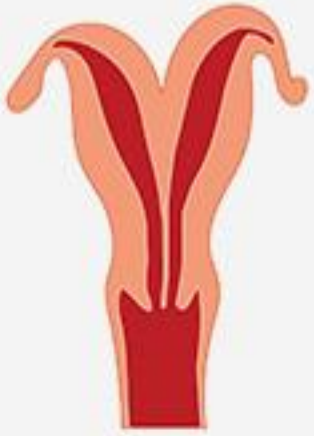


Class I: Uterine Hypopiasia and/Or agenesis

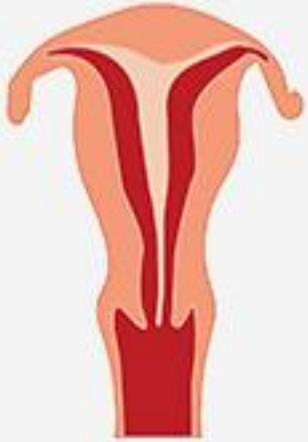
Class II: Unicornuate Uterus



Class III: Uterus Didelphys

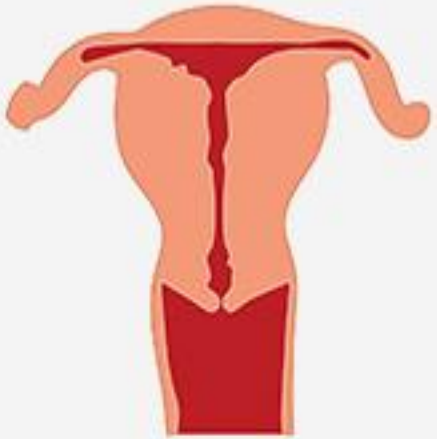


Class IV: Bicornuate Uterus

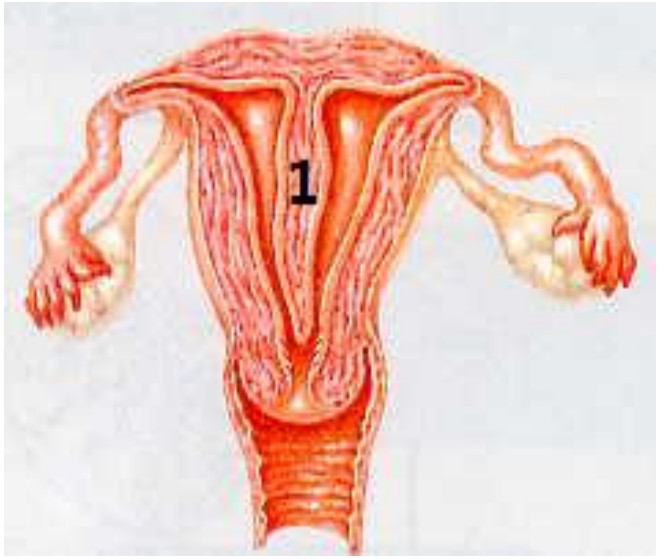


Class V: Septate uterus

Class VI: Arcuate uterus



Class VII: Diethylstilbestrol (DES) Drug Related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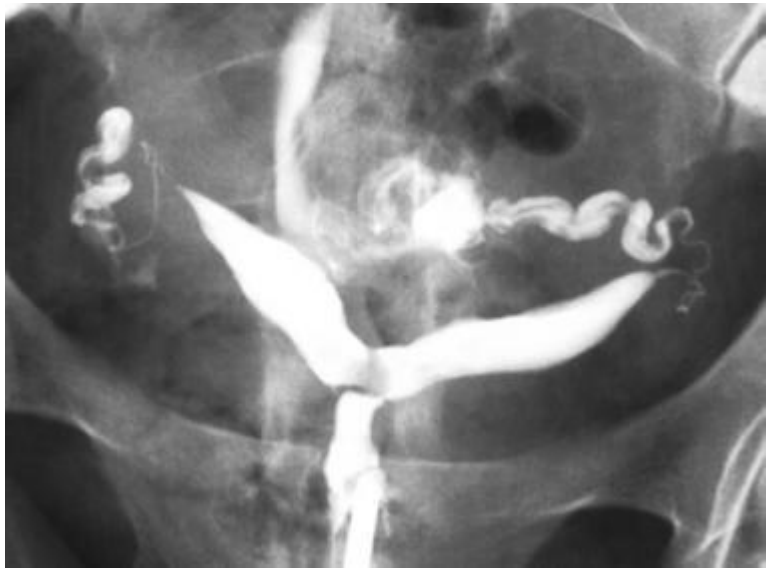

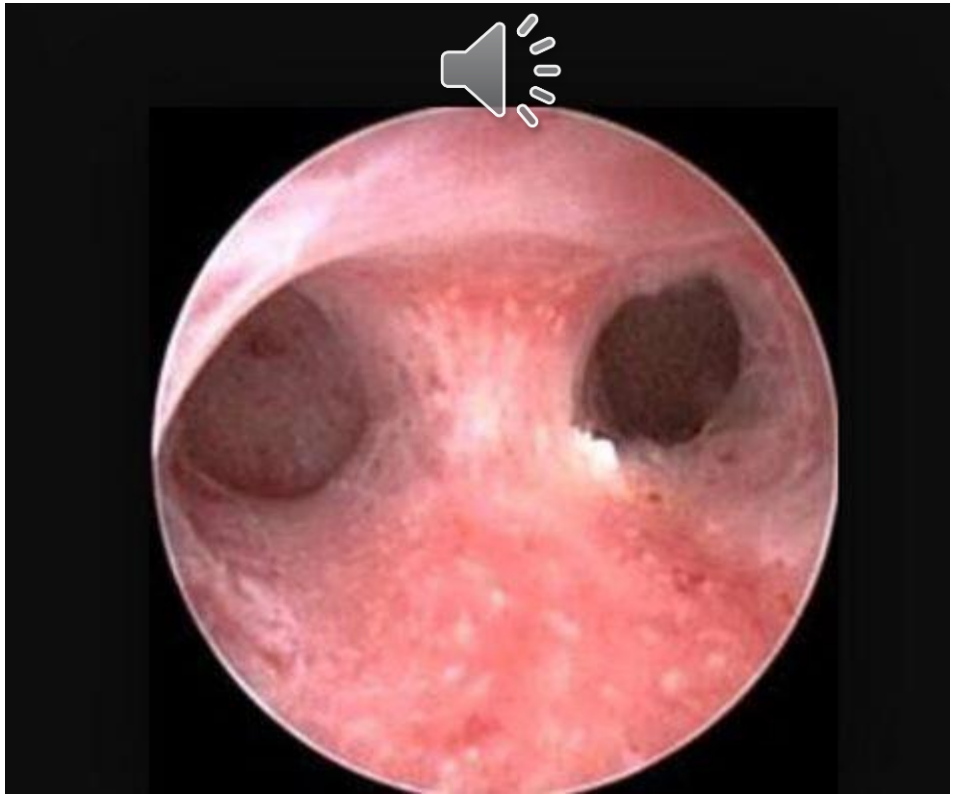

**Box 8.1** Clinical and laboratory criteria for the diagnosis of antiphospholipid syndr

## Clinical criteria

- *Vascular thrombosis:* one or more clinical episodes of arterial, venous or small vessel thr
  or organ. Thrombosis must be confirmed by objective validated criteria (i.e. unequivoc
  appropriate imaging studies or histopathology). For histopathologic confirmation, thro
  present without significant evidence of inflammation in the vessel wall.
- *Pregnancy morbidity:*
  - one or more unexplained deaths of a morphologically normal fetus at or beyond 10
    normal fetal morphology documented by ultrasound or by direct examination of the
  - one or more premature births of a morphologically normal neonate before 34 weeks
    (i) eclampsia or severe pre-eclampsia defined according to standard definitions; or (ii
    placental insufficiency; or
  - three or more unexplained consecutive spontaneous abortions before 10 weeks' ges
    anatomic or hormonal abnormalities and paternal and maternal chromosomal cause

normal fetal morphology documented by ultrasound or by direct examina

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  placental insufficiency; or
- three or more unexplained consecutive spontaneous abortions before 10 v
  anatomic or hormonal abnormalities and paternal and maternal chromoso

**Laboratory criteria**

- Lupus anticoagulant present in plasma, on two or more occasions at least 12
  to the guidelines of the International Society on Thrombosis and Haemostas
  lupus anticoagulants/phospholipid-dependent antibodies).
- Anticardiolipin antibody of immunoglobulin G (IgG) and/or IgM isotype in s
  medium or high titer (i.e. >40 GPL units or MPL units, or >99th centile), on
  12 weeks apart, measured by a standardized enzyme-linked immunosorbent
- Anti-β2 glycoprotein-I antibody of IgG and/or IgM isotype in serum or plasm
  on two or more occasions, at least 12 weeks apart, measured by a standardiz
  recommended procedures.

# Management

- Parental chromosomal abnormality

. Refer to genetics for counseling, no Rx., PGD or PGS

- Antiphospholipid Ab. syndrome

. LMWT heparin and low dose Aspirin from positive FH (6 weeks)

LBR 70% Vs. 10% if untreated ..... S.E of long term heparin

- Congenital uterine anomalies

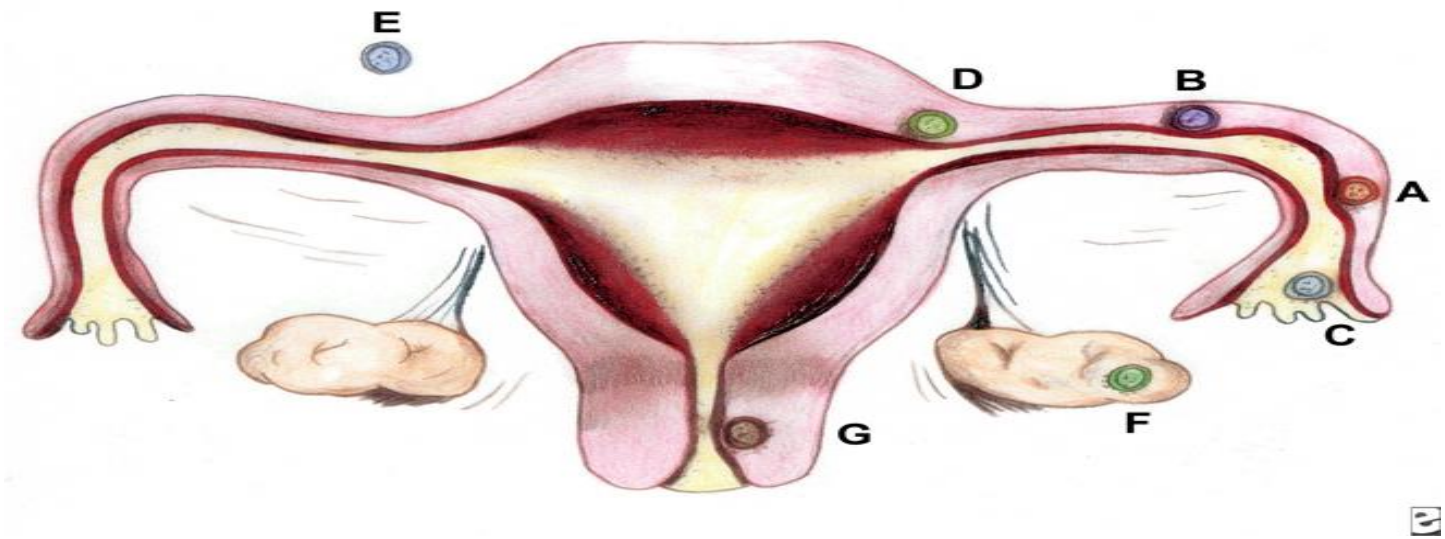
. Hysteroscopic resection of septum

-Unexplained

. 75% chance of LB following three consecutive miscarriages with no Rx.

# Ectopic pregnancy

- 11/1000 of all pregnancies (UK).
- The fallopian tubes (approximately 97.7%)
- -The ampulla is the most common site of implantation (80%), followed by the isthmus (12%), fimbria (5%), cornua (2%), and interstitia (2-3%).
- -Cervix, ovary, cornual region of the uterus, and abdominal cavity.



**Risk Factors**:

1. **Tubal damage**
2. **History** of previous ectopic pregnancy
3. **Smoking**
4. **Altered tubal motility**
5. History of 2 or more years of **infertility** (whether treated or not)
6. History of **multiple sexual partners….. PID**

1 previous ectopic pregnancy … 50-80% IUP…

**only the progesterone IUD has a rate of ectopic pregnancy higher than that for women not using any form of contraception. The modern copper IUD does not increase the risk of ectopic pregnancy**

**IVF increase the risk of EP 4 folds**

Ectopic pregnancy can lead to

1.Massive hemorrhage

2.infertility

3.Death

# Clinical triad

**1. pain**

**2. amenorrhea**

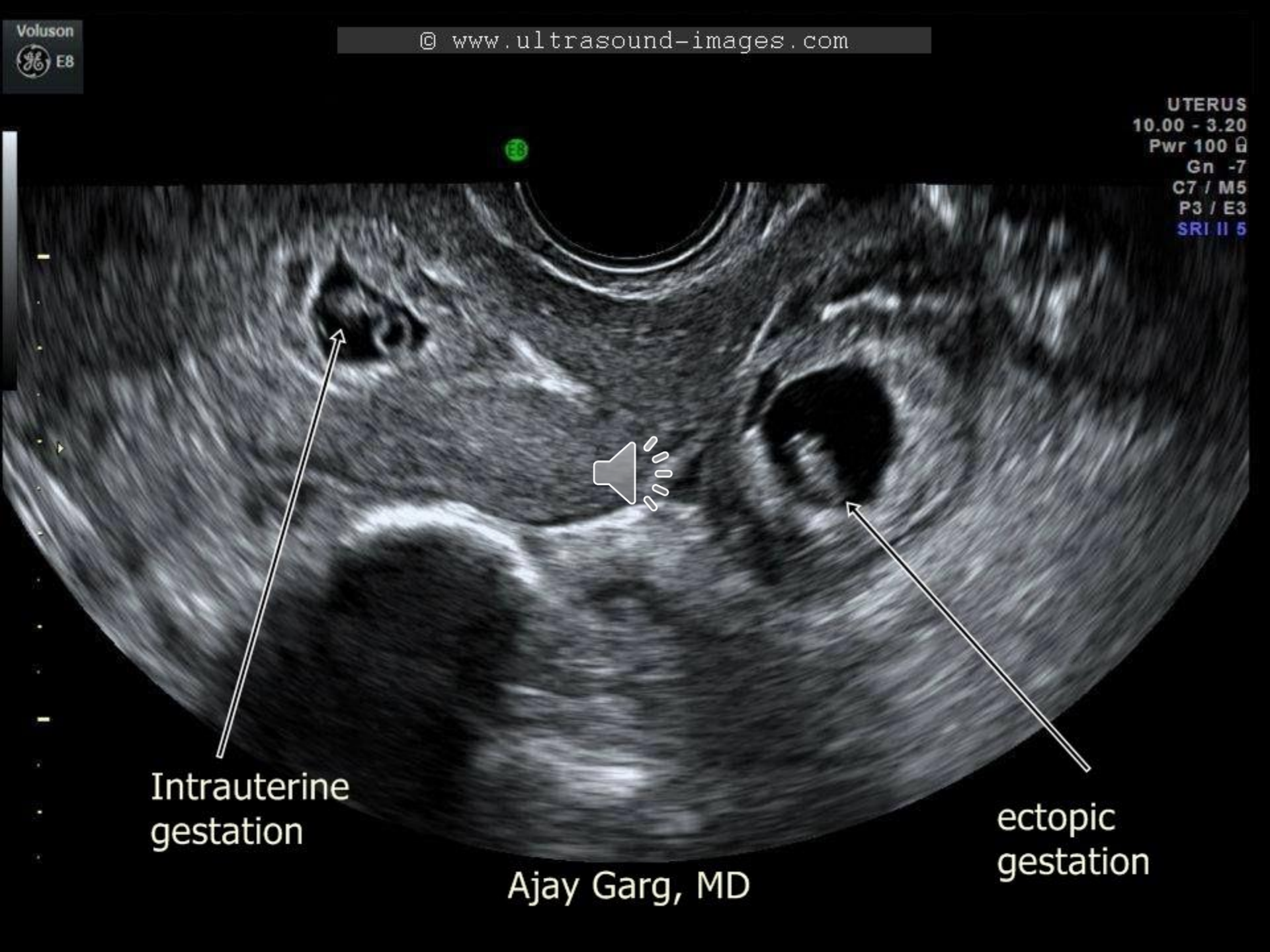
**3.vaginal bleeding**

**Management:**

**1- Expectant**

**2- Medical( MTX)**

**3- Surgical**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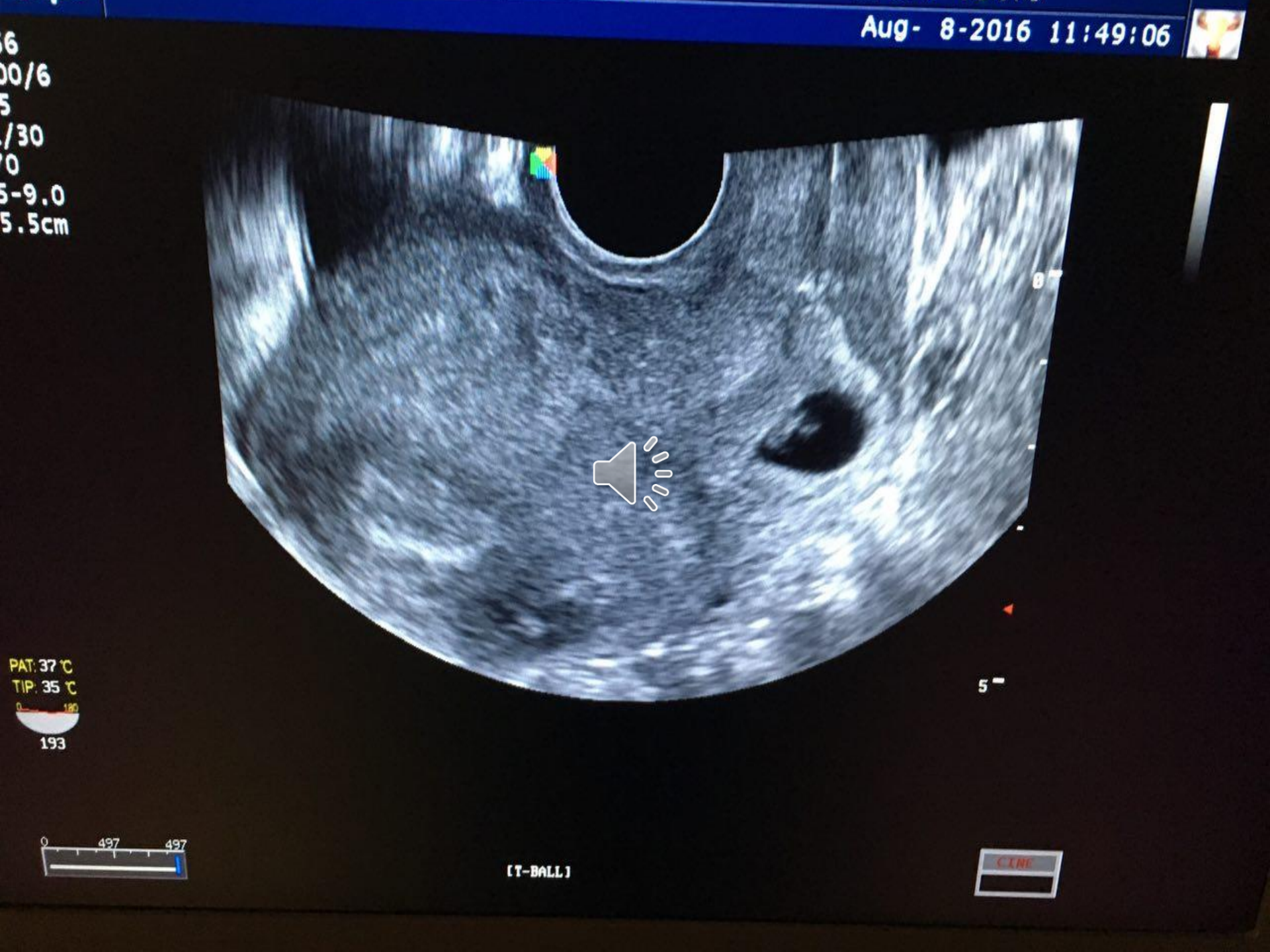
C7 / M5
P3 / E3
SRI II 5
Intrauterine gestation
ectopic gestation
Ajay Garg, MD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# The End

Best of luck