EARLY PREGNANCY RISK

(ABORTION, HYPEREMESIS, ECTOPIC PREGNANCY)

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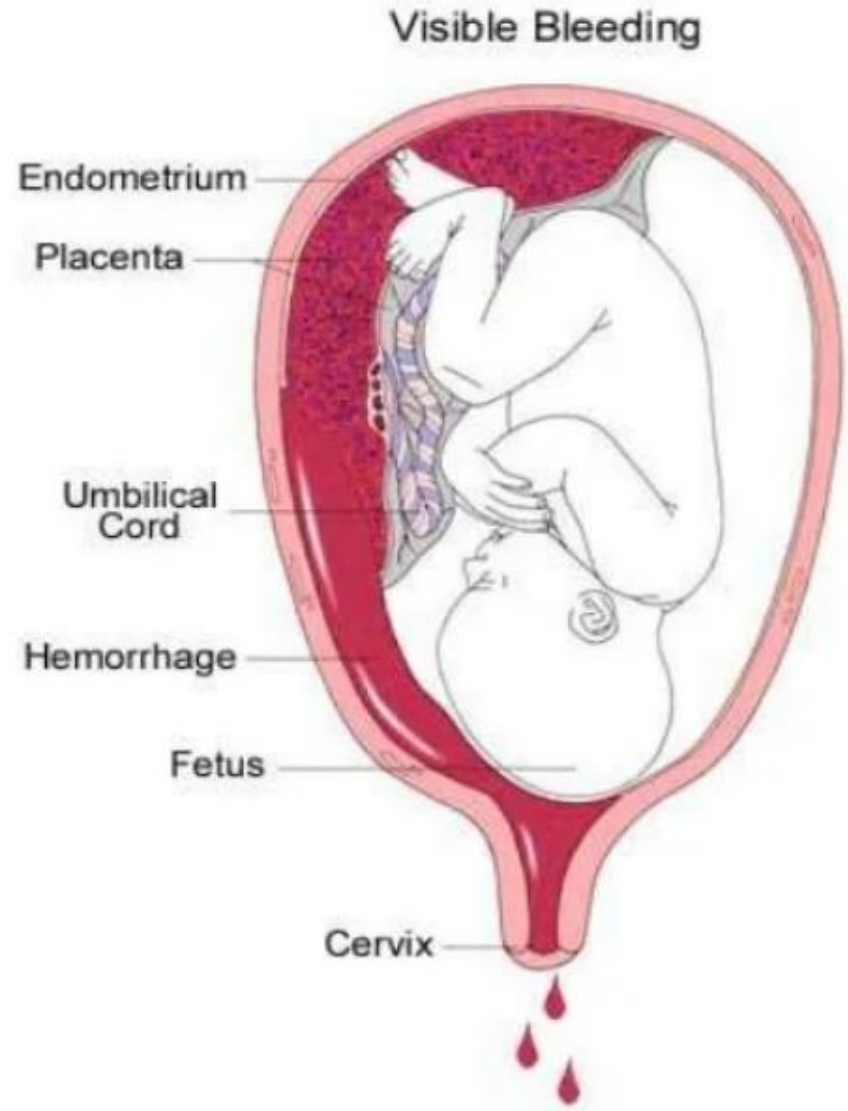
DEFINITION:

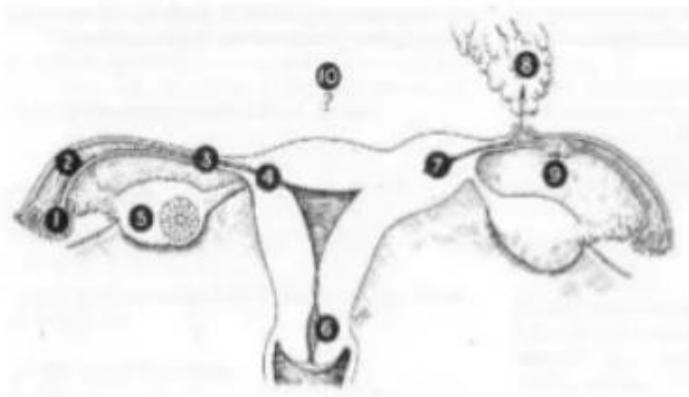
- Any vaginal bleeding before 20 wks period of gestation is defined as early pregnancy bleeding.



CAUSES:

- The causes of bleeding in early pregnancy are broadly divided into two groups:
  1. **Related** to the pregnant state:
     - Abortion 95%.
     - Ectopic pregnancy.
     - Hydatidi-form mole.
  2. **Associated** with pregnant state: Lesions are unrelated to pregnancy – either pre-existing or aggravated during pregnancy.
     - Cervical lesions.
       - Vascular erosion.
       - Polyps.
       - Ruptured varicose veins.
       - Malignancy.

Abortion



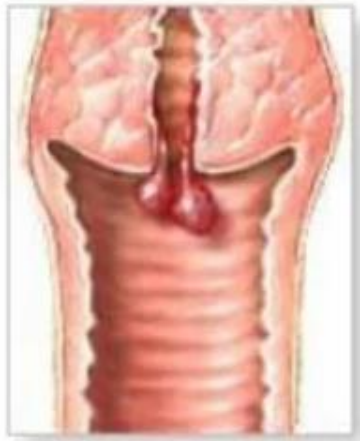
Ectopic pregnancy

Hydatidiform mole

View of cervix through a speculum

Cervical polyps

As viewed through a speculum



Sagittal view

ABORTION

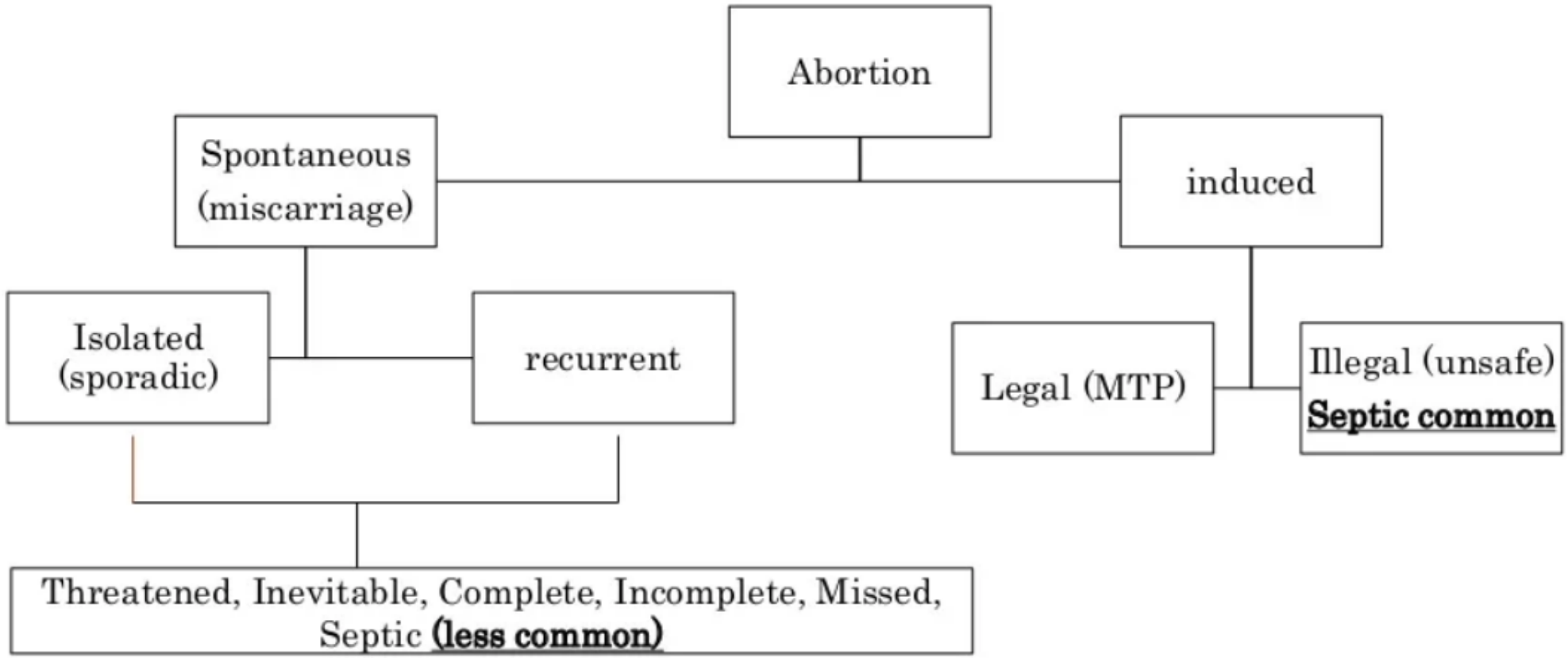
DEFINITION

- The expulsion or extraction from its mother of an embryo or fetus weighing 500 gm or less when it is not capable of independent survival. 500mg = approx. 22weeks (154 days) of gestation.
- Abortus: expelled embryo or fetus.
- Miscarriage: recommended terminology for spontaneous abortion.

INCIDENCE:

- The incidence of abortion is difficult to work out but 10-20% of all clinical pregnancies end in miscarriage and another optimistic figure of 10% induced illegally.
- 75% end before 16th week and 75% of these occur before 8th week of pregnancy.

CLASSIFICATION:



ETIOLOGY:

Complex and obscure (embryonic or parental) are important.

- Genetic – majority 50% of early miscarriages.
- Endocrine and metabolic – 10-15% LPD, deficient progesterone, thyroid abnormalities, DM.
- Anatomic – 10-15% mostly related to 2nd trimester, cervical, uterine (congenital malformation or fibroid).
- Infection – 5% viral , bacterial, parasitic.
- Immunological – 5-10% autoimmune disease, alloimmune disease.
- Antifetal antibodies.
- Thrombophilia.
- Maternal medical illness – heart disease, haemoglobinopathies.
- Blood group incompatibility : in compatible ABO group lead to early wastage and often recurrent while RH incompatibility rare cause of death before 28th week, couple with A→ husband + O→ wife has higher incidence of abortion.
- Others.

COMMON CAUSE OF MISCARRIAGE:

- 1st: 1-genetic 50%. 2-endocrine. 3- immunological. 4-infection. 5-unexplained.
- 2nd: 1- anatomic. 2- maternal medical illness. 3- unexplained.

MECHANISM OF ABORTION:

- Before the 12th week, the pregnancy sac tends to be expelled from the uterus in one mass. After that time, the process is similar to labour. The membranes rupture with escape of amniotic fluid then the fetus and placenta are born separately.

DIFFERENTIAL DIAGNOSIS OF DIFFERENT TYPES OF ABORTION:

Type of abortion	bleeding	pain	Cervical dialatation	Uterine size	Products of conception	shock	Pregnancy test
Threatened	+	-	-	Correspond amenorrhea	-	-	+
Inevitable	++	+	+	Correspond amenorrhea	-	±	+
Incomplete	++	+	+	Slightly smaller	+	±	+
Complete	+	-	-	smaller	-	-	+
Missed	±	-	-	smaller	-	-	- after 2 wks

FEATURES OF MEDICAL AND SURGICAL ABORTION

Medical abortion	Surgical abortion
Avoids invasive procedures	Involves invasive procedures
Avoids anaesthesia	Needs anaesthesia
Requires two or more visits	Requires usually one visit
Days to week to complete	Complete in a predictable time
High success rate (95%)	High success rate (99%)
Moderate to heavy bleeding for short time	Minimal
Requires follow up	Does not require follow up

HYPEREMESIS

DEFINITION

Unlike morning sickness,

hyperemesis gravidarum: is a complication of pregnancy characterized by persistent uncontrollable nausea and vomiting that persists beyond the 20th week of pregnancy .

- Hyperemesis gravidarum (HG) is a condition of pregnancy characterized by intractable nausea, vomiting, and dehydration and is estimated to affect 0.5-2.0% of pregnant women.
- Malnutrition and other serious complications such as fluid or electrolyte imbalances may result.
- Hyperemesis is considered a rare complication of pregnancy but, because nausea and vomiting during pregnancy exist on a spectrum, it is often difficult to distinguish this condition from the more common form of nausea and vomiting experienced during pregnancy known as morning sickness.

SIGNS AND SYMPTOMS

- Loss of 5% or more of pre-pregnancy body weight
- Dehydration, causing ketosis, and constipation
- Nutritional disorders such as Vitamin B1 (thiamine) deficiency, Vitamin B6 deficiency or Vitamin B12 deficiency
- Metabolic imbalances such as metabolic ketoacidosis or thyrotoxicosis
- Physical and emotional stress of pregnancy on the body
- Difficulty with activities of daily living

- Symptoms can be aggravated by hunger, fatigue, prenatal vitamins (especially those containing iron), and diet
- Hyperemesis gravidarum tends to begin somewhat earlier in the pregnancy and last significantly longer than morning sickness.
- While most women will experience near-complete relief of morning sickness symptoms near the beginning of their second trimester, some sufferers of HG will experience severe symptoms until they give birth to their baby, and sometimes even after giving birth

CAUSES

While there are numerous theories regarding the cause of HG, the cause remains controversial.

It is thought that HG is due to a combination of factors which may vary between women and include: genetics, body chemistry, and overall health.

- One factor is an adverse reaction to the hormonal changes of pregnancy, in particular, elevated levels of beta human chorionic gonadotropin.
- This theory would also explain why hyperemesis gravidarum is most frequently encountered in the first trimester (often around 8 – 12 weeks of gestation), as hCG levels are highest at that time and decline afterward.
- Another postulated cause of HG is an increase in maternal levels of estrogens (decreasing intestinal motility and gastric emptying leading to nausea/vomiting).

SOURCE	AETOLOGY	PATHOPHYSIOLOGY
• PLACENTA • CORPUS LUTEUM	hCG	• Distention of gastrointestinal tract • Crossover with TSH, causing gestational thyrotoxicosis
PLACENTA	• OESTROGEN • PROGESTERONE	• Decreased gut mobility • Elevated liver enzymes • Decreased lower esophageal sphincter pressure • Increased levels of sex steroids in hepatic portal system
GIT	HELICOBACTER PYLORI	• Increased steroid levels in circulation
	PSYCHOLOGICAL	• Possible effect of culture and environment

COMPLICATIONS

1. Weight loss
2. Dehydration
3. Metabolic acidosis from starvation
4. Alkalosis from loss of HCL
5. Hypokalemia (electrolyte imbalance)

Laboratory & Diagnostic test

Liver enzyme: elevation of (AST) & (ALT) are usually present.

CBC: elevated level of RBC & hematocrit indicating dehydration.

Urine ketones: positive when the body breaks down fat to provide energy in the absence IIT

BUN: increase in the presence of salt &water depletion

Urine specific gravity: grater than 1.025indicating concentrated urine linked to inadequate fluid intake

Serum electrolyte decrease levels of k, Na, Cl

Ultrasound: evaluation for molar or multi pregnancy

DIAGNOSIS

- Hyperemesis gravidarum is considered an exclusion. HG can be associated with serious maternal and fetal morbidity, such as Wernicke's encephalopathy, coagulopathy, peripheral neuropathy fetal growth restriction, and even maternal and fetal death.
- Women experiencing hyperemesis gravidarum often are dehydrated and lose weight despite efforts to eat.
- The onset of the nausea and vomiting in hyperemesis gravidarum is typically before the 22nd week of pregnancy

1. Promoting Fluid & Nutrition balance

- **Maintain NPO** status to allow GI tract to rest
- Administer **antiemetic drugs** like : promethazine, prchlorperazine, odanse-tron.
- **Administer IV fluid** like 5% dextrose in lactated ringer
- Administer **electrolyte replacement therapy**

2. promoting comfort

- Hygiene measures and oral care
- Pay special attention to the environment making sure to keep the area free of pungent odors
- As the Client's nausea and vomiting subside, gradually introduce oral fluid & foods in small amounts
- Monitor intake and output

3. providing support and education

Offer **reassurance** that all intervention are directed toward promoting positive pregnancy outcomes for both women fetus

Provide information about the expected plan of care

Listen to here concerns &feeling by answering all here questions

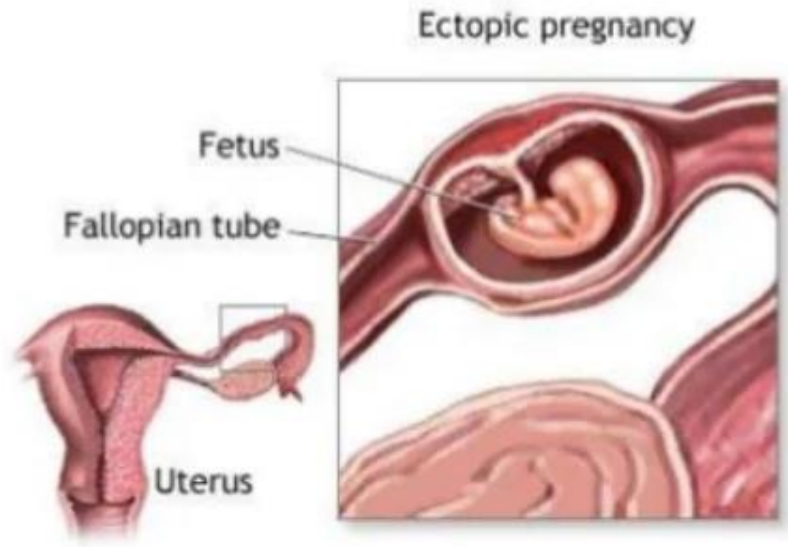
Teach the client about therapeutic life style changes like avoid stressors& fatigue

Avoid noxious stimuli

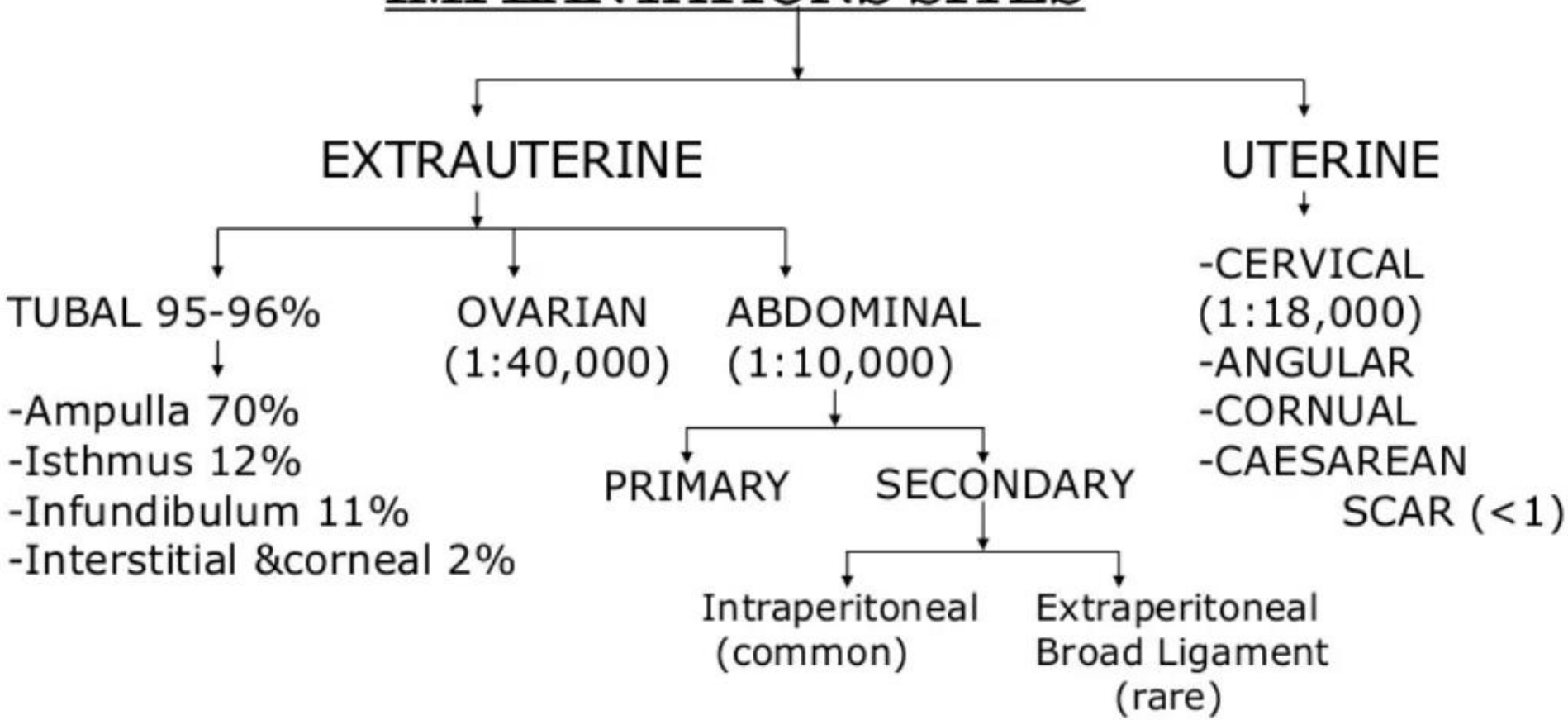
- **Avoid** tight waistband
- **Eat** small frequent meals (6 meals)
- **Separate** fluid from solid by consuming fluid In between meals
- **Use** high protein supplement
- **Avoid** lying down for at least 2 hours after eating
- **Avoid** food high in fat drink herbal tea
- **eat** food that settle the stomach such as toast or soda

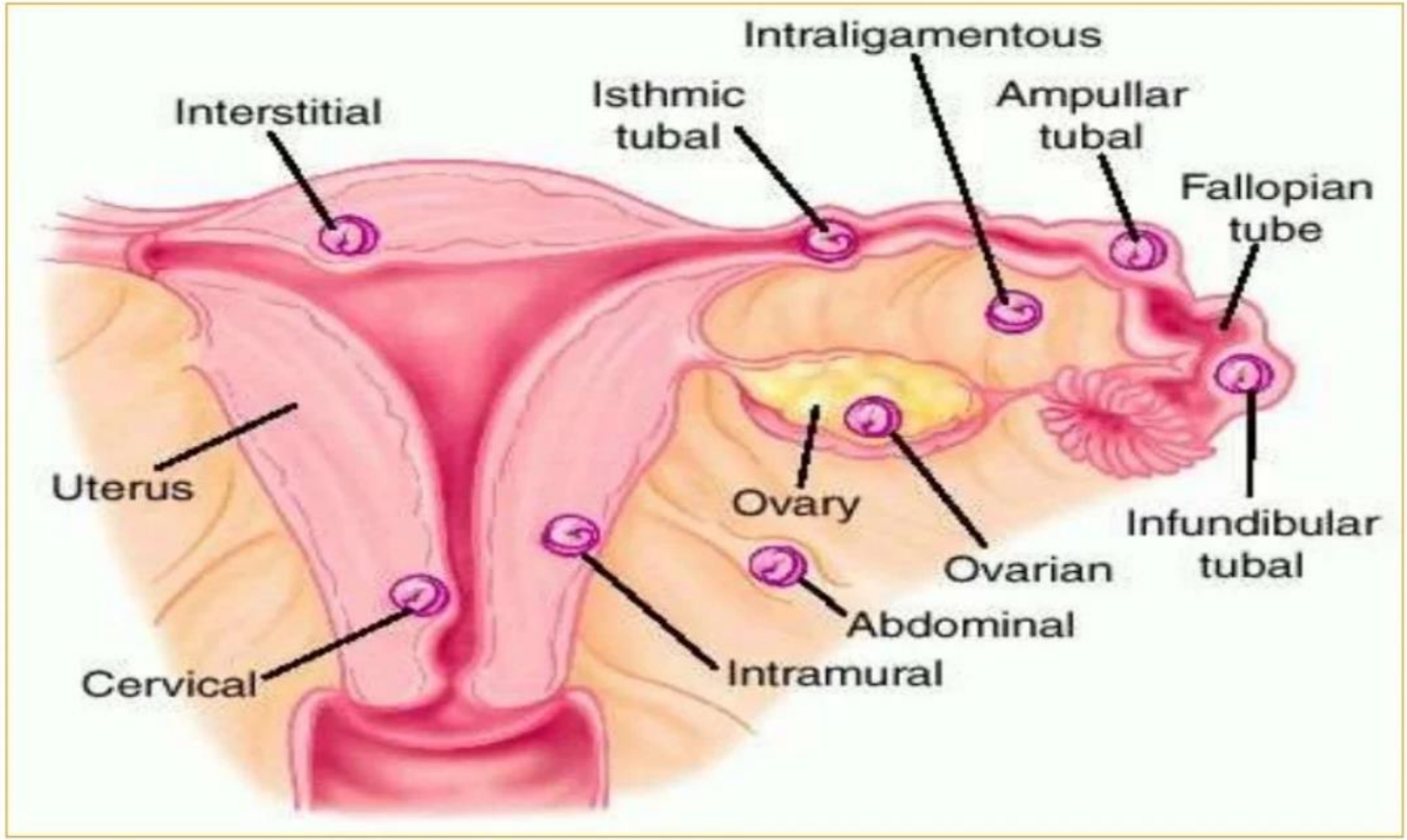
ECTOPIC PREGNANCY

- Any pregnancy where the fertilised ovum gets implanted & develops in a site other than normal uterine cavity.



IMPLANTATIONS SITES




Intraligamentous
Interstitial
Isthmic tubal
Ampullar tubal
Fallopian tube
Uterus
Ovary
Infundibular tubal
Ovarian
Abdominal
Cervical
Intramural

INCIDENCE

- Increased due to PID, use of IUCD, Tubal surgeries, and Assisted reproductive techniques (ART).
- Ranges from 1:25 to 1:250
- Average range is 1 in 100 normal pregnancies.
- Late marriages and late child bearing -> 2%
- Recurrence rate - 15% after 1st, 25% after 2 ectopics

ACUTE ECTOPIC PREGNANCY

- Classical triad is present in 50% of pt with rupture ectopic.

  - PAIN:- most constant feature in 95% pt
    - variable in severity and nature

  - AMENORRHOEA:- 60-80% of pt
    - there may be delayed period or slight spotting at the time of expected menses.

  - VAGINAL BLEEDING: - scanty dark brown

- Feeling of nausea,vomiting,fainting attack, syncope attack(10%) due to reflex vasomotor disturbance.

CHRONIC ECTOPIC PREGNANCY

- It can be diagnosed by high clinical suspicion.
- Patient had previous attack of acute pain from which she has recovered.
- She may have amenorrhoea, vaginal bleeding with dull pain in abdomen,and with bladder and bowel complaints like dysuria,frequency or retention of urine, rectal tenesmus.

UNRUPTURED ECTOPIC

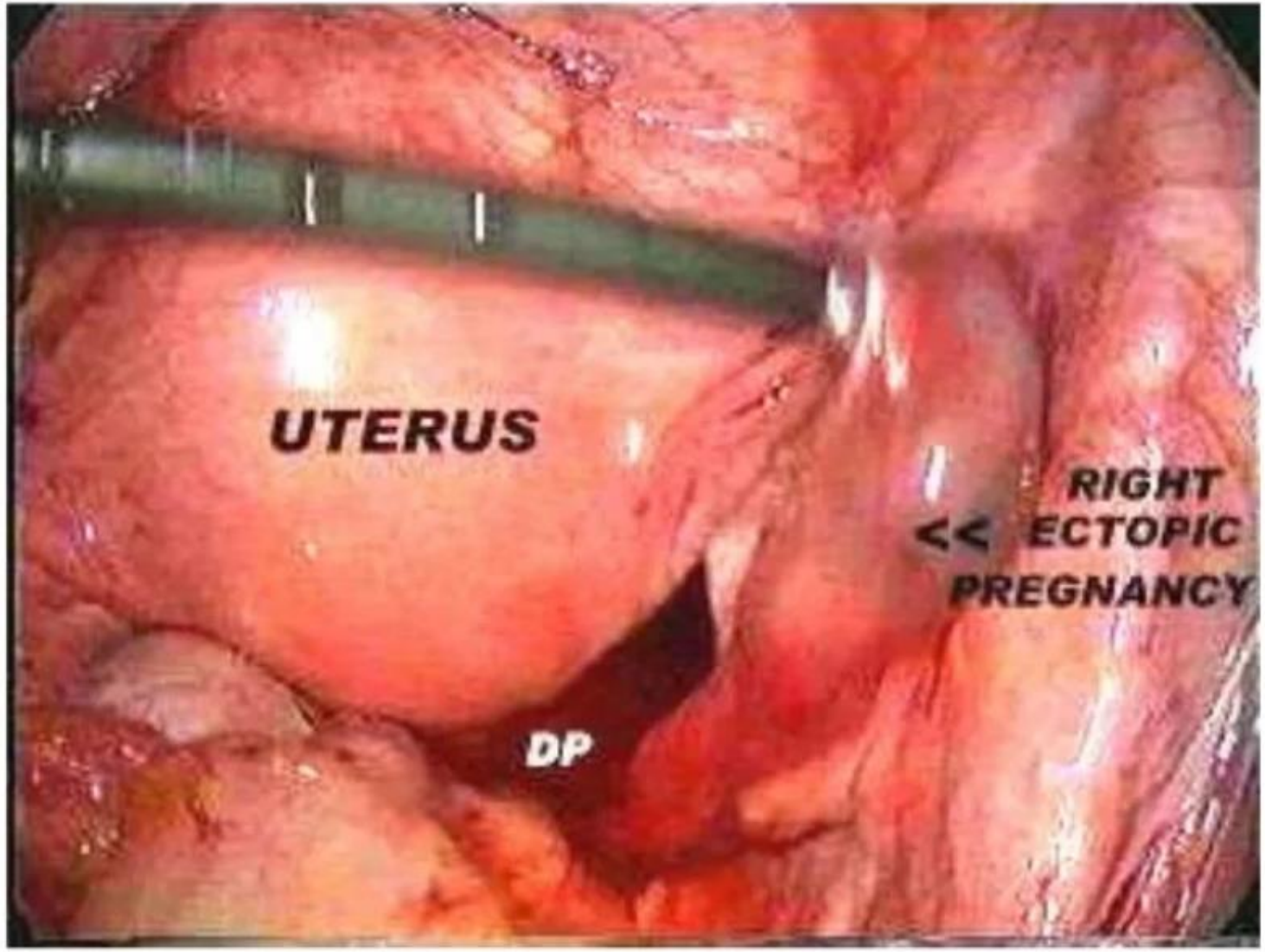
- High degree of suspicion & ectopic conscious clinician can diagnose.

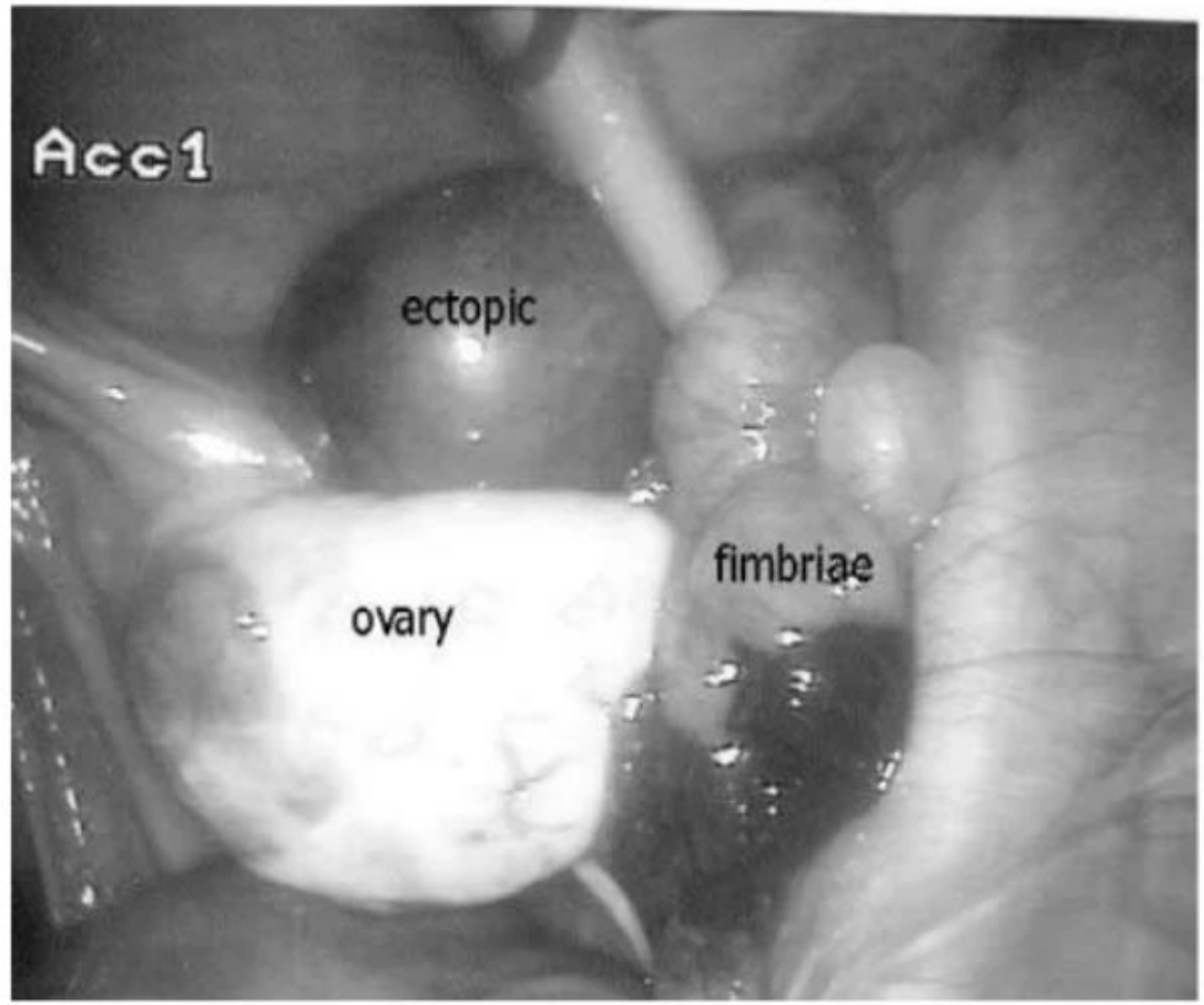
- Diagnosed accidentally in Laparoscopy or Laparotomy

– delayed period, spotting with discomfort in lower abdomen.

– tenderness in lower abdomen

– should be done gently:
  - uterus is normal size, firm
  - small tender mass may be felt in the fornix


UTERUS
RIGHT
<< ECTOPIC
PREGNANCY
DP


Acc1
ectopic
ovary
fimbriae

DIAGNOSIS

- Patient with acute ectopic can be diagnosed clinically.
- Blood should be drawn for Hb gm%, blood grouping and cross matching, DC and TWBC, BT, CT.
- Should be catheterized to know urine output.

Bed side test:-

1. Urine pregnancy test:- positive in 95% cases.
   ELISA is sensitive to 10-50 mIU/ml of β hCG and can be detected on 24th day after LMP.

2. Culdocentesis:- (70-90%)

- Can be done with 16-18 G lumbar puncture needle through posterior fornix into POD.
- Positive tap is 0.5ml of non clotting blood.

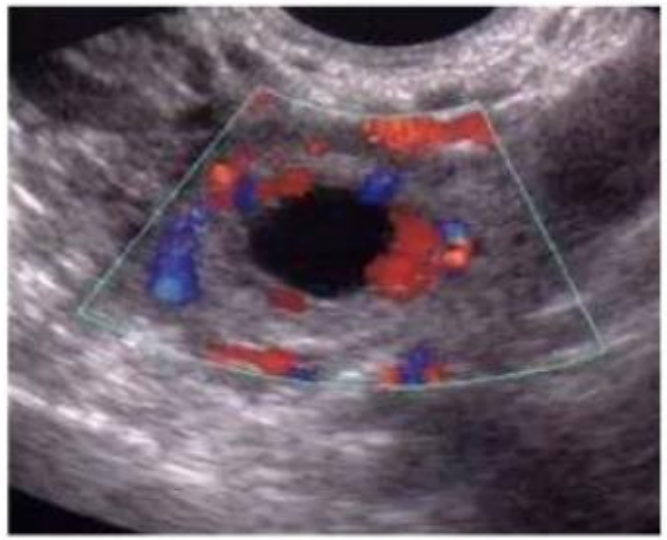
- **Other Investigations:-**

1. Ultra Sonography-:

a) **Transvaginal Sonography** (TVS):

- Is more sensitive
- It detect intrauterine gestational sac at 4-5wks and at S-β hCG level as low as 1500 IU/L .

b) **Color Doppler Sonography(TV-CDS):**



- Improve the accuracy.
-Identify the placental shape (ring-of-fire pattern) and blood flow outside the uterine cavity.

c) **Transabdominal Sonography:**

- can identify gestational sac at 5-6 wks
- S-β hCG level at which intrauterine gestational sac is seen by TAS is 1800 IU/L.

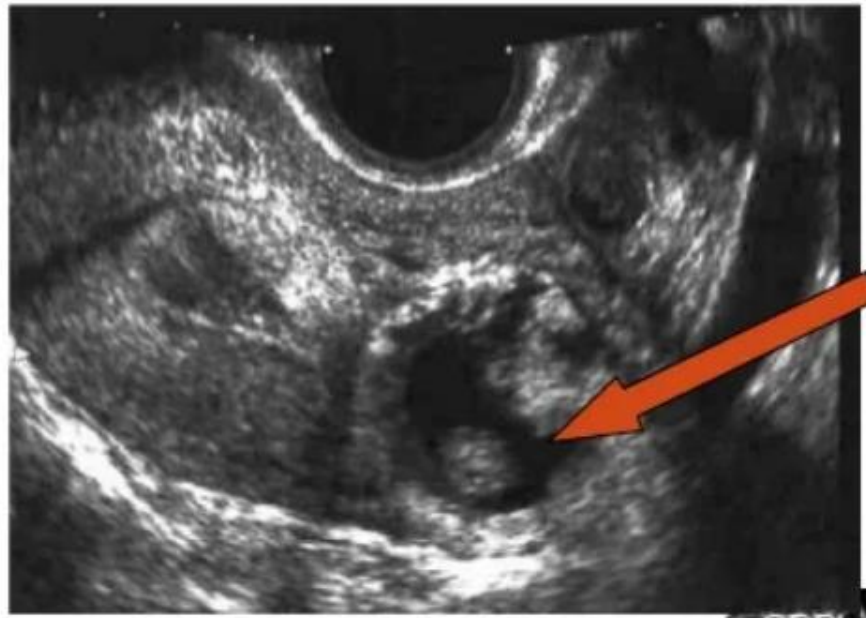
USG PICTURE

1.'Bagel' sign – Hyperechoic ring around gestational sac in adnexal region

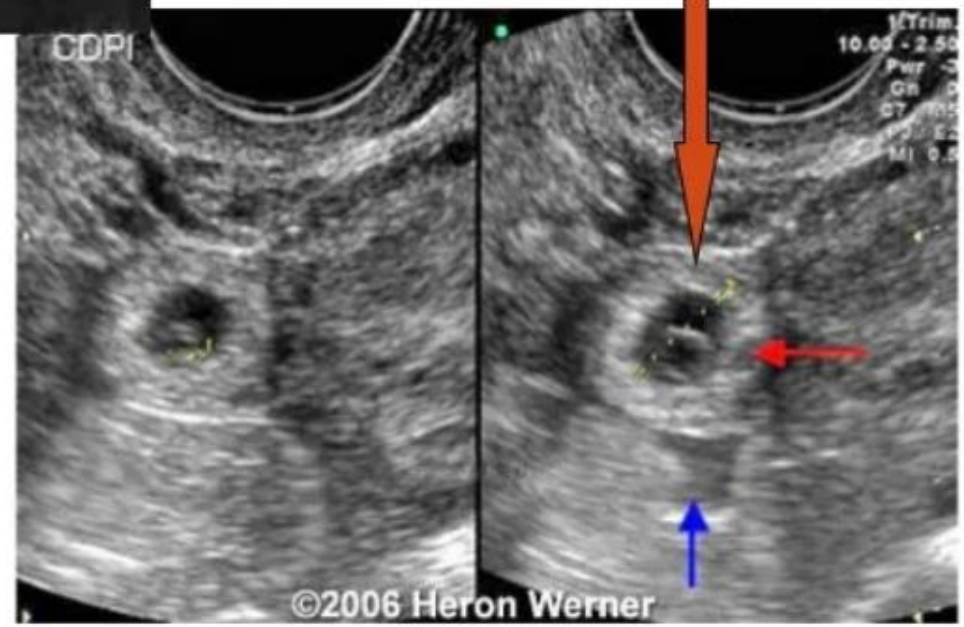
2. 'Blob' sign – Seen as small inconglomerate mass next to ovary with no evidence of sac or embryo.

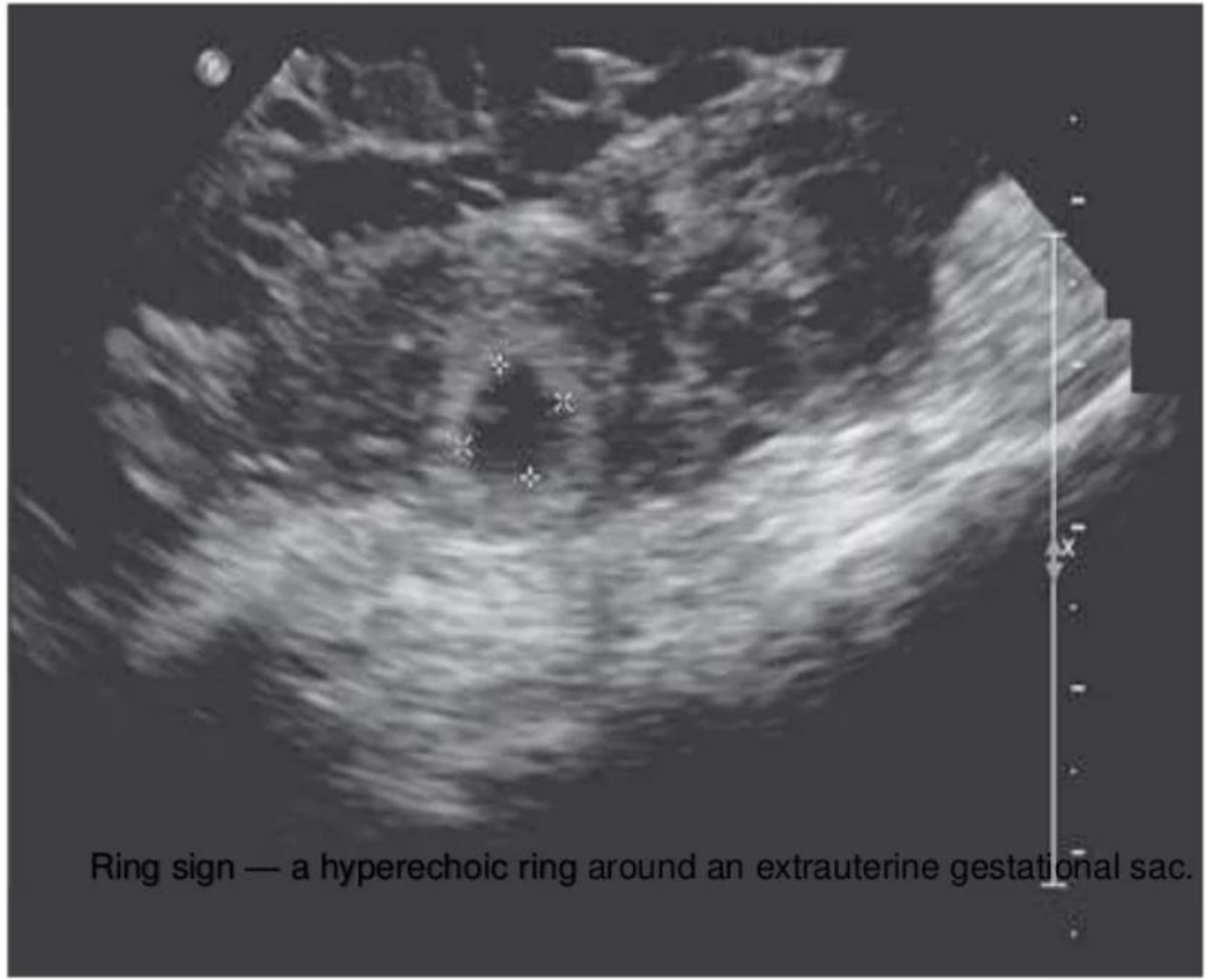
3. Adnexal sac with fetal pole and cardiac activity is most specific.

4. Corpus luteum is useful guide when looking for EP as present in 85% cases in Ipsilateral ovary.



Hyperechoic ring around gestational sac in adnexal region





Ring sign — a hyperechoic ring around an extrauterine gestational sac.

2. β-HCG Assay-

a) Single β-HCG: little value

b) Serial β-HCG: is required when result of initial USG is confusing.

- When hCG level < 2000 IU/L doubling time help to predict viable Vs nonviable pregnancy.

-Rise of β-HCG <66% in 48 hrs indicate ectopic pregnancy or nonviable intrauterine pregnancy .

Biochemical pregnancy is applied to those women who have two β-HCG values >10 IU/L

3. **Serum Progesterone** –

- level >25 ngm/ml is suggestive of normal intrauterine pregnancy.
- level <15 ngm/ml is suggestive of ectopic pregnancy.
- level <5 ngm/ml indicates nonviable pregnancy, irrespective of its location.

4. **Diagnostic Laparoscopy (Gold standard)**–

- Can be done only when patient is haemodynamically stable.
-It confirms the diagnosis and removal of ectopic mass can be done at the same time.

5. Dilatation & Curettage –

- Is recommended in suspected case of incomplete abortion vs ectopic pregnancy.
- Identification of decidua without chorionic villi is suggestive of extra uterine pregnancy.
- "Arias-Stella" endometrial reaction is suggestive but not diagnostic of ectopic pregnancy.

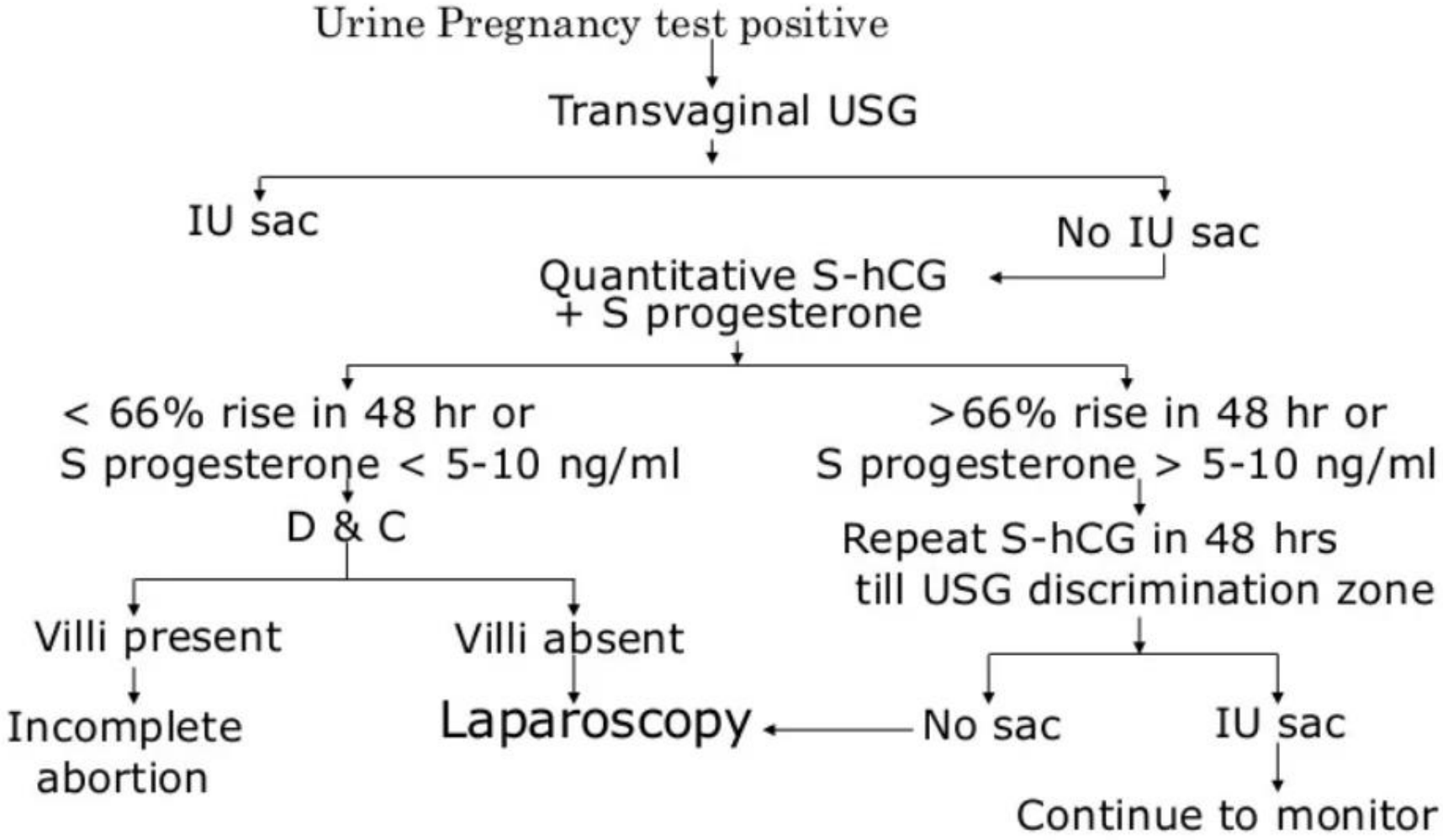
6. Other hormonal Tests –

- Placenta protein (PP14) decrease in EP

- PAPPA (Pregnancy Associated Plasma Protein A), PAPPC (schwangerchaft protein 1) has low value in EP

- CA-125, Maternal serum creatine kinase, Maternal serum AFP elevated in ectopic pregnancy.

SUSPECTED ECTOPIC PREGNANCY

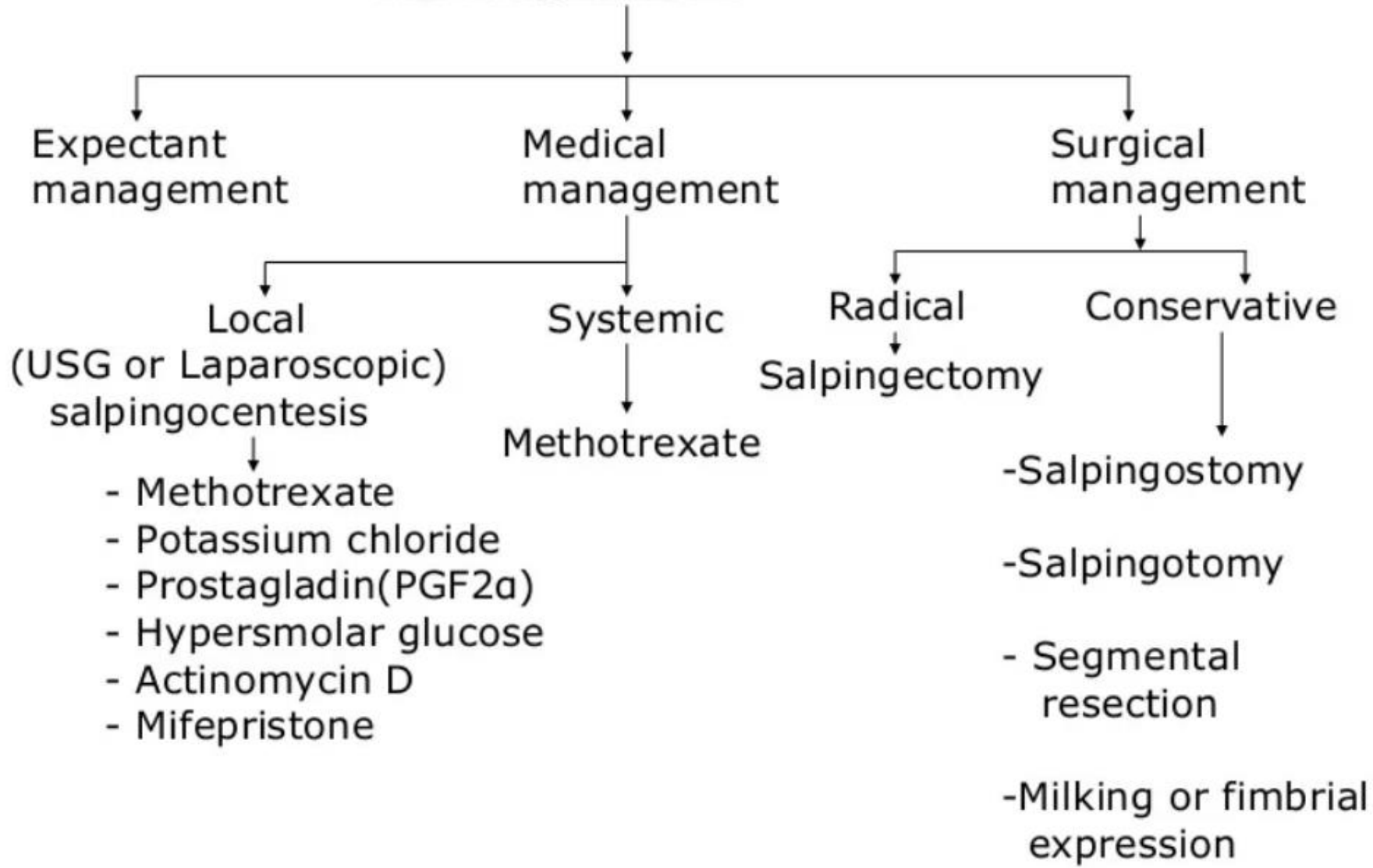


DIFFERENTIAL DIAGNOSIS

D/D of Acute Ectopic

1. Rupture corpus luteum of pregnancy
2. Rupture of chocolate cyst
3. Twisted ovarian cyst
4. Torsion / degeneration of pedunculated fibroid
5. Incomplete abortion
6. Acute Appendicitis
7. Perforated peptic ulcer
8. Renal colic
9. Splenic rupture

MANAGEMENT


Expectant management
Medical management
Surgical management
Local (USG or Laparoscopic) salpingocentesis
Systemic
Radical
Conservative
- Methotrexate
- Potassium chloride
- Prostagladin(PGF2α)
- Hypersmolar glucose
- Actinomycin D
- Mifepristone
Methotrexate
Salpingectomy
-Salpingostomy
-Salpingotomy
- Segmental resection
-Milking or fimbrial expression

TERIMA KASIH