ECTOPIC PREGNANCY

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Definition

- Ectopic pregnancy (EP) is defined as implantation of a pregnancy outside the normal uterine cavity.
- Over 98% implant in the fallopian tube. Rarely , ectopic pregnancies can implant in the interstitium of the tube, ovary, cervix, abdominal cavity or in cesarean section scars.
- A hetero-tropic pregnancy is the simultaneous development of 2 pregnancies: one within and one outside the uterine cavity

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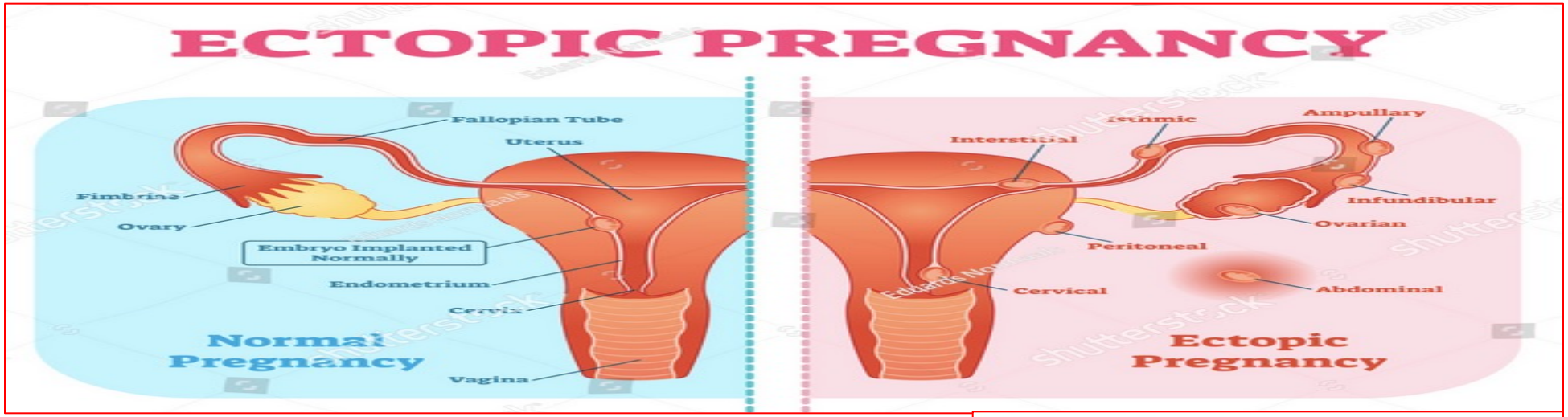

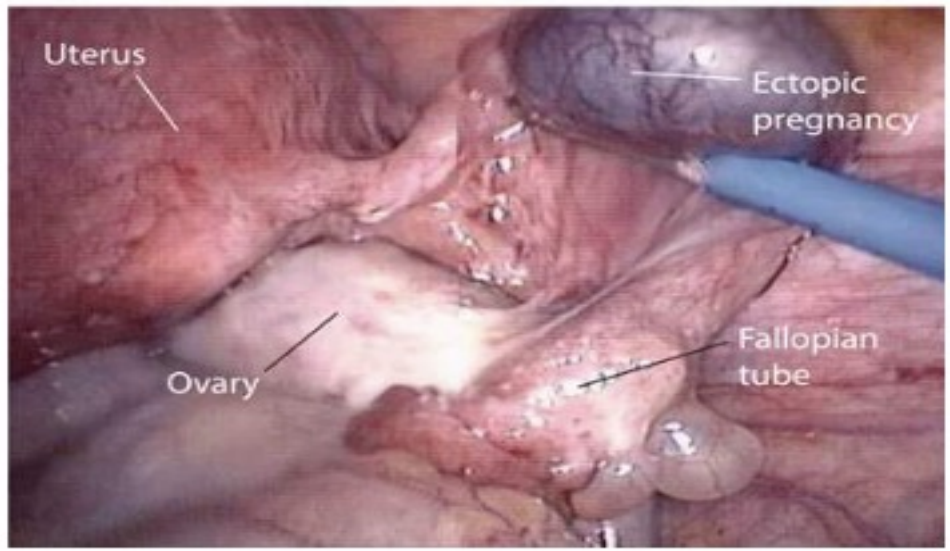

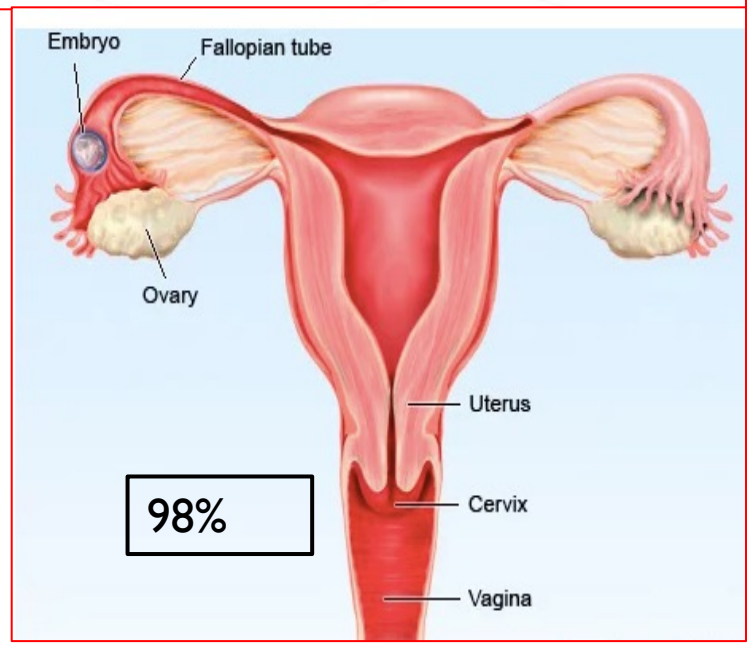

INCIDENCE AND ETIOLOGY

- **Fallopian tube damage** due to pelvic infection (e.g. Chlamydia/Gonorrhea), previous ectopic pregnancy, and previous tubal surgery.
- **Functional alterations** in the Fallopian tube due to smoking and increased maternal age.
- **Additional risk factors** : previous abdominal surgery (appendictomy, CS), subfertility, IVF, use of IUCD, endometriosis, conception on OCs/ morning after pills.

Clinical Presentation

- The majority of patients with EP present with a subacute clinical picture of abdominal pain and/or vaginal bleeding in early pregnancy.
- Rarely, patients present very acutely with tubal rupture with massive intra-peritoneal hemorrhage. The free blood in the peritoneal cavity can cause diaphragmatic irritation and shoulder tip pain.

Clinical Presentation

- The *diagnosis of ruptured EP* is usually clear as they present with signs of acute abdomen and hypovolemic shock with a positive pregnancy test.

- It is, however, important to be aware that it is common for women to experience bleeding or abdominal pain with a viable intra-uterine pregnancy.

Clinical Presentation

'In any woman in the childbearing period coming with lower abdominal pain, vaginal bleeding +/- hypovolemic shock ectopic pregnancy should be the 1st differential diagnosis and pregnancy test is a must.'

Investigations

- *Clinical evaluation is of utmost importance.*
- **TVUSS**: identification of an intrauterine pregnancy (intrauterine GS, YS +/- fetal pole) effectively exclude the possibility of EP in most patients except in those patients with rare heterotropic pregnancy.
- A TVUSS showing an empty uterus with an adnexal mass has a sensitivity of 90% and specificity of 95% in diagnosis of EP.
- The presence of moderate to significant free fluid during TVUSS is suggestive of ruptured EP .

Investigations

- **Serum hCG:** the serum hCG level almost doubles every 48 hours in a normally implanted pregnancy.
- In patients with EP, the rise of hCG is often suboptimal. However, hCG levels can vary widely in individuals and thus consecutive measurements 48 hours apart are often required for comparison purposes.

Investigations

- Hematological and 'group and save' (or cross-match if patient is severely compromised):

  - measure to assess degree of intra-abdominal bleeding and Rh status

Pregnancy of unknown location(PUL)

- In about 40% of women with EP the diagnosis is not made on first attendance and labeled as having 'PUL'.
- **A PUL is a working diagnosis defined as an empty uterus with no evidence of an adnexal mass on TVUSS (in patients with positive pregnancy test)**
- The mainstay of investigation of PUL is consecutive measurement of serum hCG. An endometrial biopsy can occasionally be helpful when hCG levels are static. All PUL must be investigated to determine the location of pregnancy.

Management of EP

- EP can be managed using an expectant, medical , or surgical approach depending on clinical presentation and **patient** choice.

EXPECTANT MANAGEMENT:

✓ Expectant management is based on the assumption *that a significant proportion of all EPs will resolve without any treatment.*

✓ This option is suitable for patients who are hemo-dynamically stable and asymptomatic (and remain so).

✓ The patient requires serial hCG measurement until levels are undetectable.

Medical Management

- Intramuscular mthotrexate (MTX) is a treatment option for patients with: minimal symptoms, adnexal mass <40mm, current seum hCG <3000 IU/L.
- MTX is a folic acid antagonist that inhibits DNA synthesis, particularly affecting trophoblast .
- **The dose** is calculated based on patient's surface area, and is 50 mg/m^2 .
- After MTX treatment serum hCG is *usually routinely measured on days 4,7 and 11 then weekly thereafter until undetectable* (levels need to fall by 15% between day 4 and 7, and continue to to fall with treatment)

Medical Management

- Medical treatment should only offered if facilities are present for regular follow-up visits.
- *Contraindications* for medical treatment:

1- chronic liver, renal or hematological disorder

2-active infection

3-immunodeficiency

4-breastfeeding

Medical Management

- Side effects of MTX therapy:

1. Stomatitis
2. Conjunctivitis
3. Gastrointestinal upset
4. Photosensitive skin reaction
5. Non-specific abdominal pain (2/3^{rds} of patients)

Medical Management

- It is important to advise women to avoid sexual intercourse during treatment and to avoid conceiving for 3 months after MTX treatment because of the risk of teratogenicity.
- It is also important to advise them to avoid alcohol and prolonged exposure to sunlight during treatment

Surgical Management

- The standard surgical treatment approach is laparoscopy.
- Laparotomy is reserved for severely compromised patients or where there are no endoscopic facilities.
- The operation of choice is removal of the fallopian tube and the EP within (salpingectomy) , or in some cases a small opening is made over the site of EP to be extracted via this opening (salpingostomy)

Surgical Management

- Salpingostomy is recommended only if the contralateral is absent or visibly damaged, and it is associated with a higher rate of subsequent EP.
- Pregnancy rates *subsequently remain high* if the contralateral tube is normal because the oocyte can be picked up by the ipsilateral or the contralateral tube

Anti-D administration

- Rhesus isoimmunization can occur after early pregnancy problems and there are some circumstances where women who are RH – negative require anti-D prophylaxis
- **All Rh-negative women who have a surgical procedure to manage EP or miscarriage should be offered anti-D immunoglobulin at a dose of 50µg (=250 IU) as soon as possible within 72 hours of the surgery.**
- ***A Kleihauer test is not needed to quantify fetomaternal hemorrhage in the 1st trimester.***
- ***Anti-D is not required in threatened, incomplete or complete natural miscarriage***
- Anti-D may not be required after the medical management of EP but guidelines differ, and prophylaxis is often given

SELF ASSESMENT

SBA QUESTIONS

1 A 25-year-old woman presents with vaginal bleeding and a positive pregnancy test. Her TVUSS shows a non-viable intrauterine pregnancy. What would it be reasonable to offer her? Choose the single best answer.

A Laparoscopy.

B Serum hCG measurement.

C Misoprostol.

D Methotrexate.

E Progesterone.

ANSWER

C The non-viable pregnancy should be removed with suction curettage or by administration of misoprostol. hCG has no role here as it is used only to help manage a PUL or monitor an ectopic. Laparoscopy is not relevant as there is no suggestion of an EP. Methotrexate is not used for an intrauterine pregnancy, and progesterone should not be used in the presence of a non-viable pregnancy, as it will only prolong the time to completion of miscarriage.

CASE HISTORY

Mrs M is a 32-year-old woman who presents after 6 weeks of amenorrhoea with abdominal pain and dizziness. Her observations on admission are blood pressure 90/50 mmHg, pulse 115/min, temperature 36.9°C. She has a positive urinary pregnancy test.

A What is your differential diagnosis?

B What are the key points in her history, examination and investigation?

C Discuss her management.

ANSWERS

A EP. The findings of cardiovascular instability, in the presence of pregnancy, are an ectopic until proven otherwise.

B An EP should be suspected in any woman of reproductive age who presents with symptoms. This patient has classical symptoms of ectopic pregnancy: pain and dizziness. She also has signs of hypovolaemic shock. She has a positive urinary pregnancy test.

C 'ABC'. The patient should have a large bore cannula inserted and be given IV fluids. Bloods should be taken for full blood count (FBC) and 'Group and Save'. She should remain nil by mouth. She requires an abdominopelvic examination. A senior colleague should be informed about her admission and the possibility of her requiring an urgent laparoscopy.

The patient had a laparoscopy and was discovered to have a large right ruptured EP in her Fallopian tube with 1.5 litres of blood in her pelvis. She had a salpingectomy and subsequently recovered well.

- THAK YOU FOR ATTENTION

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