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Ectopic Pregnancy

Definition

An ectopic pregnancy occurs when an **embryo** implants **outside** of the **uterine cavity**.

Epidemiology

- 1-2% of pregnancies
- Incidence is **increasing!**

Aetiology

The risk of ectopic pregnancy is increased by anything that:

1. **Slows** the transit of the ovum to the uterus (e.g damage to the fallopian tubes)
2. Anything that predisposes the embryo to **premature implantation**

Important risk factors:

- Previous ectopic pregnancy
- Pelvis Inflammatory Disease/Previous STI
- Previous tubal sterilisation surgery
- Smoking
- Use of progesterone-releasing IUDs
- Infertility/IVF treatment
- Increasing maternal age

Underlying Process / Pathophysiology

- The most common site for abnormal implantation is the **fallopian tube** (95% of ectopic pregnancies! Usually at the **ampulla**)
- The thin walls of the fallopian tube become **stretched** and unable to sustain the **trophoblastic invasion** that occurs in implantation.
- This ultimately leads to **tubal rupture** and **bleeding**.

Classifications

Most ectopic pregnancies occur in the fallopian tubes but can also occur within the:

- **Cornu** (the uterine horns – the point where the uterus and fallopian tubes meet)
- **Ovary**
- **Cervix**
- **Abdominal cavity**

Symptoms

Ectopic pregnancy should be a differential in **all woman of reproductive age** presenting with abnormal vaginal bleeding, abdominal pain or collapse.

Common symptoms include:

Amenorrhoea

- 4-10 weeks
- She may not even know she is pregnant!

Lower abdominal pain **(usually the first sign)**

- Vague
- Initially colicky as the fallopian tube tried to extrude embryo, becomes constant
- Unilateral
- **Shoulder tip** pain may occur in diaphragmatic irritation due to haemoperitoneum

Abnormal vaginal bleeding

- May be small amounts
- “Prune coloured”/ Brown

Others:

- Diarrhoea and vomiting
- Dizziness
- Collapse

Signs

- Patient may have no specific signs
- Uterus may be **smaller than expected** for gestation
- Abdominal and rebound **tenderness**
- **Cervical excitation**

- **Adenexal mass** or tenderness
- Look for **signs of rupture**: ↑HR, ↓BP

Differentials

- **Miscarriage:** (any type)- bleeding and abdominal pain
- **Ovarian torsion:** Lower abdominal pain
- **Pelvic Inflammatory Disease:** Abdominal tenderness, cervical excitation
- Other differentials for **left/right iliac fossa pain**

Investigations

Urine pregnancy test

- Confirm pregnancy!

Quantitative serum βhCG, repeat at 48hrs

- In intrauterine pregnancy, βhCG levels double over 48 hours (or at least show a **rise of ≥53%**)
- If this happens, an earlier but intrauterine pregnancy is likely
- Declining or slowing rising levels (plateauing) suggests an ectopic or non-viable intrauterine pregnancy.

High resolution transvaginal ultrasound (TVUS)/Transabdominal ultrasound

- No intrauterine pregnancy is detected in ectopic pregnancy
- The ectopic pregnancy may be visualised ("Doughnut sign")

NOTE: If uterine pregnancy isn't found, it may actually be a viable pregnancy that is not visible due to it being very early in the pregnancy!

Laparoscopy

- Rarely used but is the most sensitive investigation for finding an ectopic pregnancy

Management

Remember to:

- **Cross-match** blood
- Give **Anti-D prophylaxis** (if necessary)
- Inform patient that she is able to self-refer to the **Early Pregnancy Assessment Unit** (EPAU)

Expectant treatment (watchful waiting)

- Some tubal pregnancies will end themselves
- Patient must be clinically stable with falling hCG levels
- Active intervention is considered if symptoms of ectopic pregnancy occur or serum hCG fail to decrease to acceptable rate

Medical treatment

- Medical management is used if **expectant management fails** or the patient has a **moderate risk of rupture**
- **Methotrexate 50mg/m2** is given **IM**
- Methotrexate is a **folic acid antagonist** that will disrupt the rapidly dividing trophoblastic cells
- hCG levels are measured at **4** and **7** days
- May need more than one dose if hCG is not lowering sufficiently

NOTE: Inform patient that she must **avoid intercourse** during treatment and **effective contraception** should be used for the next **3 months** (methotrexate is **teratogenic!**)

Surgical treatment

- Surgery is used in a **ruptured ectopic pregnancy** or **failure of medical management**
- **Laparoscopy** with **salpingostomy** or **salpingectomy** (depending on status of the contralateral tube and desire for future fertility)

Haemodynamically unstable patient

- **IV access** and **fluids** (colloids or crystalloids)
- **Laparotomy** and **salpingectomy**

Complications

- **Side effects of methotrexate:** nausea, vomiting, **neutropenia**, hepatotoxicity
- **Persistent trophoblast after treatment:** Important to check hCG levels in follow-up!
- **Damage to surrounding organs/vasculature due to surgical intervention**
- **Recurrent ectopic pregnancy:** Remember, ectopic pregnancy is a risk factor for further ectopic pregnancies!

Useful resources

- RCOG green-top guideline: https://www.rcog.org.uk/globalassets/documents/guidelines/gtg21_230611.pdf
- BMJ Best Practice: Ectopic Pregnancy