Disorders of early pregnancy

Ectopic Pregnancy

Any pregnancy occurring outside the uterus

Site of implantation:

1- Tubal, ovarian or other intraabdominal sites.

2- Abnormal site in the uterus: cornu or Cervix

Incidence

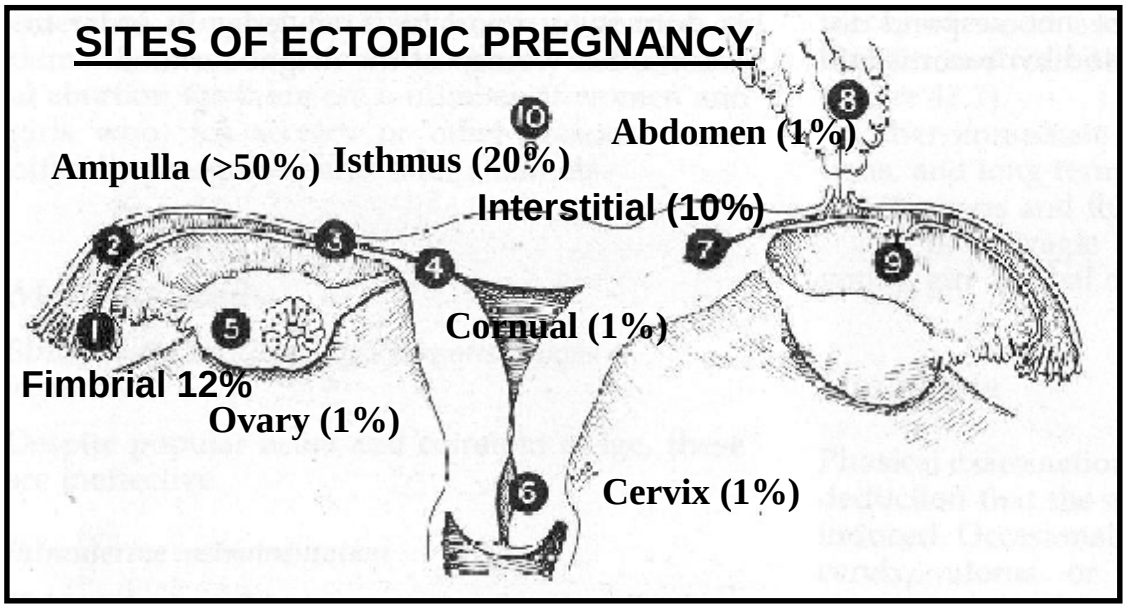
22 / 1000 live birth

16 / 1000 pregnancy

It is increasing from 4 - 19 /1000 preg. (5 folds)

95-98% in the tubes

Types and % of ectopic pregnancy:



1) Fimbrial 2) Ampullary 3) Isthemic 4) Interstitial
5)Ovarian 6) Cervical 7)Cornual 8) Secondary abdominal
9) Broad ligament 10) Primary abdominal

Risk Factors:

Any mechanical or functional obstruction of the tubal patency will increases the risk for **tubal pregnancy**

- History of infertility
- Pelvic inflammatory disease even subclinical chlamydia and GC
- Pelvic operations { tubal, or appendix }, failed tubal sterilization
- Previous tubal pregnancy
- Assisted conception { particularly IVF if tubes are patent and damaged }
- Failed contraceptive methods (Presence of an intra uterine device)

Pathology of Ectopic Pregnancy

- Fertilized ovum borrows through the epithelium
- Zygote reaches the muscular wall of the tube.
- Trophoblastic cells at zygote periphery proliferate, invade, and erode adjacent muscularis and reach the subserosal area
- Maternal blood vessels (tubo-ovarian) disrupted leading to hemorrhage

Outcome: tubal abortion or rupture with hemorrhage

Clinical presentation of Tubal Pregnancy

Tubes are the Commonest site of ectopic pregnancy,
There are no pathognomonic clinical features for tubal or ectopic pregnancy:

Symptoms:

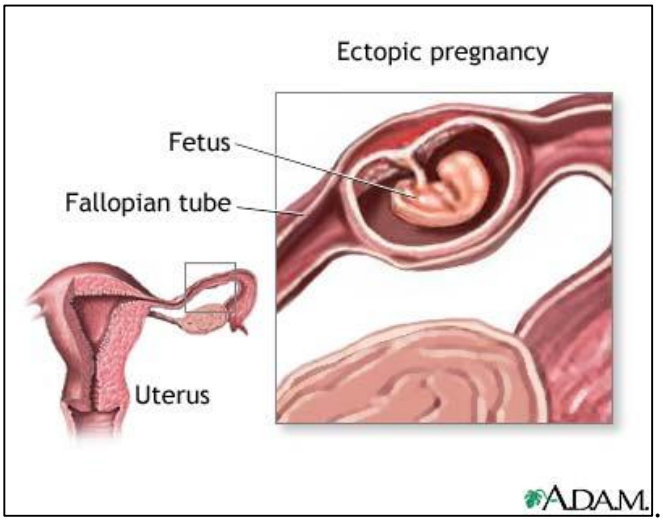
- Onset occurs ~7 weeks after LMP
- Abdominal pain
- Vaginal bleeding

Signs:

- 1st trimester bleeding
- Abdominal tenderness
- Adnexal tenderness

Common associated symptoms by history:

- *Amenorrhea.*
- *Early pregnancy symptoms.*
- *Nausea, vomiting, diarrhea*



Other Signs:

- Tachycardia, Low grade fever
- Chadwick's sign (cervix and vaginal cyanosis)
- Hegar's sign (softened uterine isthmus)
- Hypoactive bowel sounds
- Cervical Motion Tenderness
- Enlarged uterus (bulky)
- Cul-de-sac fullness
- Decidual cast (Passage of decidua in one piece)

Signs suggestive of ruptured ectopic pregnancy:

- Usually between 6 and 12 weeks gestation
- Severe abdominal tenderness with rebound, guarding
- Shoulder tip pain due to haemoperitoneum and diaphragmatic irritation
- Orthostatic hypotension, fainting attack, dizziness

DIFFERENTIAL DIAGNOSIS

- **Appendicitis**
- **Intrauterine pregnancy (Threatened Abortion).**
- **Ruptured ovarian cyst**
- **Ovarian torsion**
- **PID**
- **Salpingitis**
- **Endometritis**
- **Nephrolithiasis**

Other diagnoses:

- **Dysmenorrhea**
- **Dysfunctional uterine bleed**
- **UTI**
- **Diverticulitis**
- **Mesenteric lymphadenitis**

DIAGNOSIS

the rate of tubal rupture is as low as 20% due to early diagnosis
This is due to the availability of diagnostic tests and an increased awareness of the serious nature of this disease and higher index of suspicion.

Methods of early diagnosis

- Immunoassay utilising monoclonal antibodies to beta HCG
- Ultrasound scanning – Abdominal & Vaginal including Colour Doppler
- Laparoscopy
- Serum progesterone estimation not helpful
- Curettage may show partial or focal endometrial decidual reaction called arias-stella reaction by histopathologist
- **A combination of these methods may have to be employed**

1. **Pregnancy test.**
    a) **Urinary B-hCG: sensitive, detects 25-50 m I.U/ml.. Positive at or just before missing the next period**
    b) **Serum B-hCG: Mainly used for quantitative rather than qualitative purposes**
    It is positive at 6-7 days after fertilization

2. **Pelvic ultrasound scan**
    a) **Abdominal. Sac at 5 wks F.H. at 7 wks.. Needs full bladder**
    b) **Transvaginal. A wk earlier than abdo… empty bladder**

Methods of early diagnosis at 4-5 weeks:

- **TVS can visualise a gestational sac as early as 4-5 weeks from LMP.**
- **During this time the lowest serum beta HCG is 1000-1500 IU/L.**
- **When beta HCG level is greater than this and there is an empty uterine cavity on TVS, ectopic pregnancy can be suspected.**
- **When the value of beta HCG does not double in 48 hours ectopic pregnancy will be confirmed.**

By early US (finding):

1- Poorly defined tubal ring containing echogenic structure (complex adnexal mass and fluid or blood in pouch of Douglas.
2- Ruptured ectopic with fluid in the POD and an empty uterus.
3- In Colour Doppler, the placental vascularity can be seen outside the uterus.

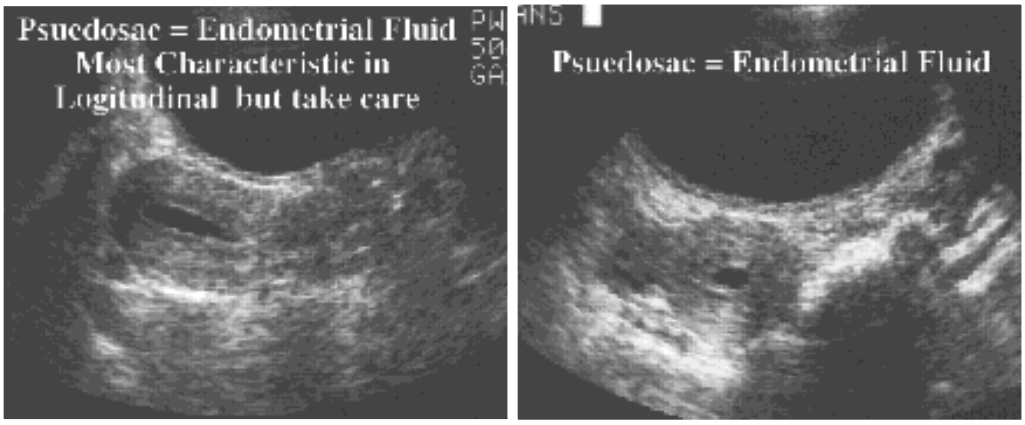


Fig: Psuedosac inutero by US in a patient with ectopic pregnancy due to endometrial response to hormones of pregnancy leading to collection of endometrial fluid and thickened endometrium.

Therefore your management plan:

If early pregnancy problems…. Urine B-hCG + Abdominal Scan

1- Intra-uterine pregnancy …….GOOD

2- No Intra-uterine gestation Seen à serum B-hCG + TVS.

3- with serum B-hCG of (1000 – 1500) or 2000 ml I.U/ml in some laboratory Intra uterine gestation should be seen using TVS…… otherwise suspect Ectopic pregnancy and proceed for Diagnostic Laparoscopy

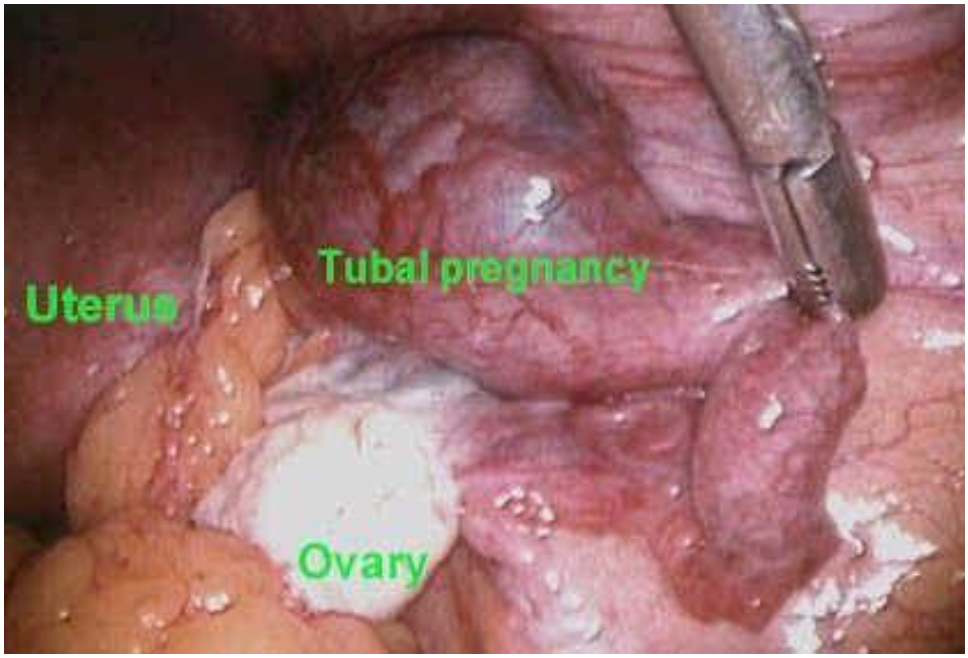


Fig: Diagnostic Laparoscopy showing ectopic pregnancy

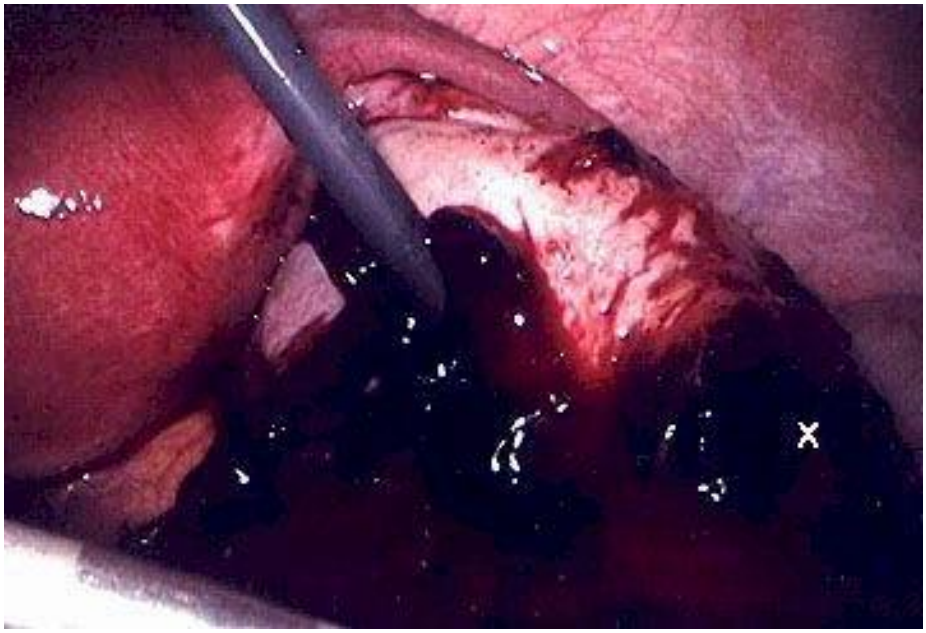


Fig: Ruptured ectopic by laparoscopy

MANAGEMENT:

Depending on the presentation:

- **Acute… with ruptured ectopic and intra-abdominal bleeding: ABC,,, + surgical approach.**
- **Early stages, with intact ectopic:**

1- Expectant… decreasing B-hCG à Tubal abortion then the conceptus will be absorbed gradually without any intervention but only follow up.

2- Medical à Depending on size of ectopic and level of B-hCG: Use local injection of : KCI, hyperosmolar glucose, methotrexate. Or by systemic methotrexate with good outcome and future fertility.

3- Surgical:
Surgical treatment of ectopic pregnancy by laparotomy or laparoscopy
1- salpingectomy
2- salpingotomy

Surgical Management depend on the desired future fertility is either:
1- Conservative,
Open or laparoscopic: by Linear salpingotomy or milking of the tube

Conservative surgery is only indicated when:

- **The patient desires to conserve her fertility**
- **Patient is haemodynamically stable**
- **Tubal pregnancy is accessible**
- **Unruptured and < 5Cm. In size**
- **Contralateral tube is absent or damaged**

2-Radical,

laparoscopic or open à salpengectomy

All tubal pregnancies can be treated by partial or total Salpingectomy

Fertility post ectopic surgery

- **The overall subsequent conception rate in women with ectopic pregnancies is about 60%**
- **less than half of these pregnancies result in another ectopic or spontaneous abortion**
- **so only about one third of women with ectopic pregnancies have subsequent live births.**

- **The subsequent fertility rate is significantly higher in:**

1- parous women
2- younger than 30 years
3- unruptured ectopic

On the other hand low fertility is expected in :
1- nulliparous woman, her subsequent conception rate is only about 35%.
2- previous history of salpingitis and gross evidence of damage to the opposite tube (by previous salpingitis).
3- ruptured ectopic.

Therefore early diagnosis with serial hCG and ultrasound is desirable for better outcome.

Repeat Ectopic Pregnancy

The rate of repeat ectopic pregnancy after a single ectopic pregnancy ranges from 8% to 20%, with a mean of 15%.
After two ectopic pregnancies, infertility rates as high as 90%.