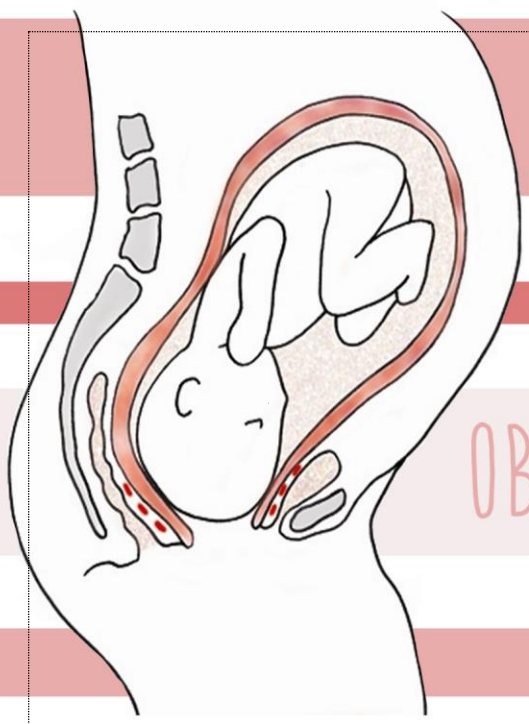

OBSTETRICS AND GYNECOLOGY

(1) Bleeding in Early Pregnancy

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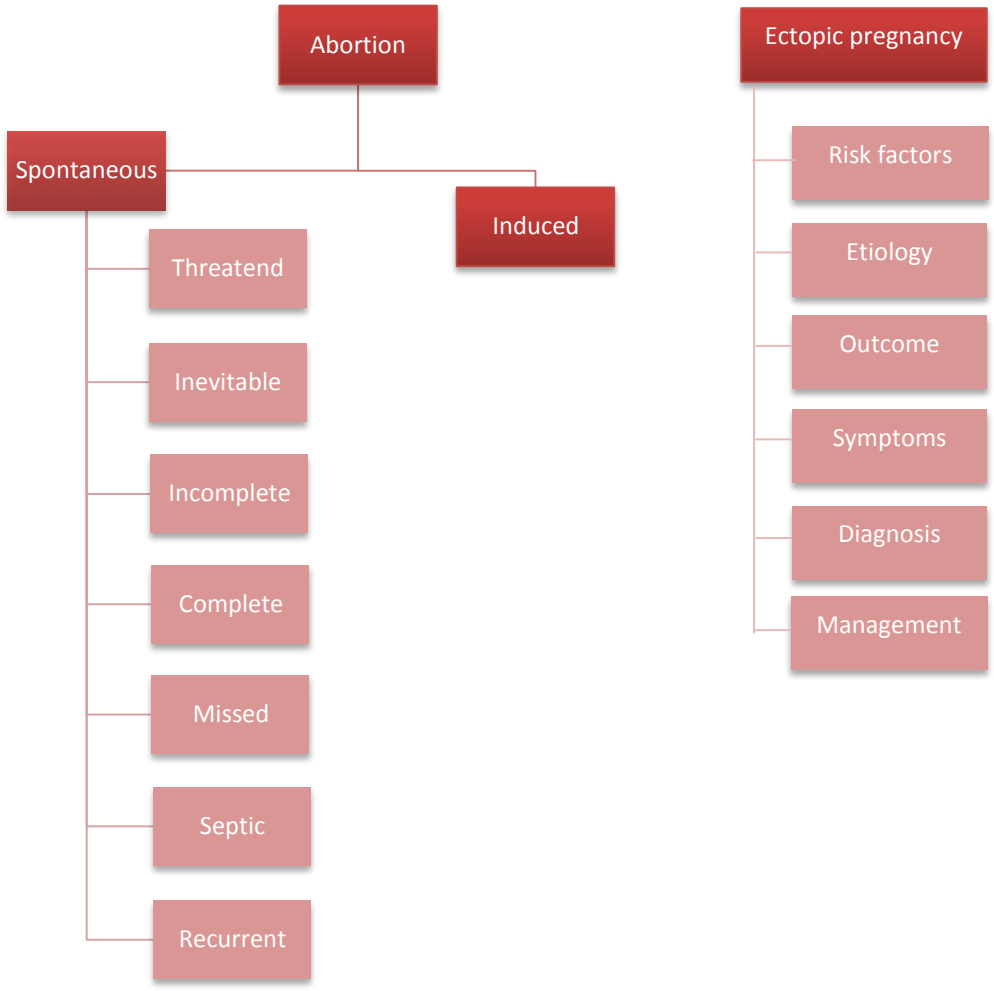
Doctor's note Team's note Not important Important 431 teamwork

Objectives:

- Define Abortion
- Understand the importance of bleeding in early pregnancy
- Identify Types of Abortion
- Utilize own clinical information
- Analyze and diagnose the clinical presentations
- Formulate a line of management
- Ectopic Pregnancy
- Comprehend the importance of Ectopic pregnancy
- Diagnose Ectopic
- Numerate the types of management



- Bleeding in Early pregnancy can cause maternal death
- Miscarriage is spontaneous while abortion is induced either by the doctor, or the mother.
- Miscarriage or abortion is loss of pregnancy before 20 weeks which is the period of fetal viability (period of viability: can I resuscitate the fetus or not? Can he survive?)
- Because our country is following the WHO so we will say loss of pregnancy before 24 weeks (instead of 20 Ws) is miscarriage/abortion.
- Bleeding after 24 weeks is considered—antepartum hemorrhage
- Biochemical pregnancy: by testing Beta-HCG either in urine (urine pregnancy test) or blood with no sign of pregnancy in the ultrasound
- Clinical pregnancy: signs of pregnancy in US (first sign is the gestational sac).

Abortion:

Definition: Termination of the conceptus from the time of conception until the time of fetal viability **(24 weeks).**

What is the period of Viability:

- Fetal weight >500 grams and/or >24 weeks
- Incidence: 15-20% of clinically recognized pregnancy,
- Can be much higher if we consider chemical pregnancies, before clinical recognition

Pathology:

- Hemorrhage into the decidua basalis.
- Necrotic changes & inflammation in the tissue adjacent to the conception.
- Detachment of the conceptus.
- The above will stimulate uterine contractions resulting in expulsion.

Causes:

A) Fetal causes:

Chromosome Abnormality:

- 50% of spontaneous losses are associated with fetal chromosome abnormalities:

- Autosomal trisomy (non-disjunction/balanced translocation): is the single largest category of abnormality & leads to recurrence of abortion.

- Monosomy (45, XO; Turner's Syndrome) occurs in 7% of spontaneous abortions and it is caused by loss of the paternal sex chromosome.

- Triploids: found in 8 % of spontaneous abortions, it is the consequence of either dispermy or failure of extrusion of the second polar body

Remember that Un-controlled diabetes in pregnancy leads to congenital anomalies.

B) Maternal:

1. Immunological:

   - alloimmune response: failure of normal immune response in the mother to accept the fetus for the duration of the normal pregnancy.
   - autoimmune disease: antiphospholipid antibodies especially lupus anticoagulant (LA) and the anticardiolipin antibodies (ACL)

2. Uterine abnormality:

   - Congenital: septate uterus → recurrent abortion.
   - Fibroids (submucus): → (1) disruption of implantation and development of the fetal blood supply, (2) rapid growth and degeneration with release of cytokines, and (3) occupation of space for the fetus to grow. Also polyp > 2 cm diameter.
   - Cervical incompetence: → second trimester abortions.

   Mid-trimester abortion→ think about incompetent cervix "the baby is out without an effort"→ you should suspect it from the history.

3. Endocrine:

   - Diabetes Mellitus; poor control (type 1/type 2).
   - Hypothyroidism and hyperthyroidism.
   - Luteal Phase Defect (LPD): a situation in which the endometrium is poorly or improperly hormonally prepared for implantation and is therefore inhospitable for implantation. (questionable).

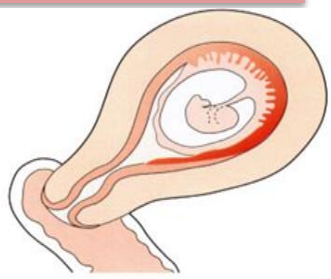
4. Infections (maternal/fetal): as TORCH infections, Ureaplasma urealyticum, listeria.

5. Environmental toxins: alcohol, smoking, drug abuse, ionizing radiation…

TORCH infections:
T = Toxoplasma
O= Others as (Syphilis, Parvo B19)
R= Rubella
C= Cytomegalovirus
H= Herpes

Types of Spontaneous Abortion:

A) Threatened Abortion:


Threatened miscarriage

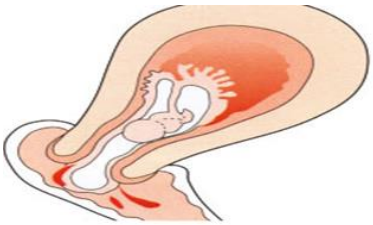
- 25% of pregnancies. This refers to bleeding from placental bed, minimal bleeding.
- The pregnancy is sound.
- In practice any case of bleeding before the 24th week may be classed as threatened abortion in the absence of any other explanation.

Presentation:

- ✓ A period of amenorrhea.
- ✓ Gestational age/ pregnancy test/ Ultrasound
- ✓ Mild bleeding (spotting or heavy). Can be heavy!
- ✓ Mild pain.
- ✓ Bimanual Exam: Vulvae, Vagina and Cervix healthy, Uterus corresponds to period of gestation**, Internal cervical os is closed.**
- ✓ Ultrasound (USS): viable intra uterine fetus.

Management:

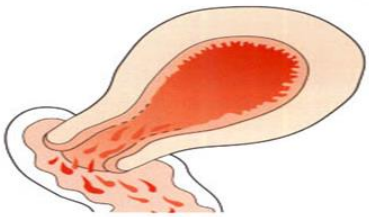
- ✓ Expectant; reassurance.
- ✓ Anti D if Rhesus negative
- ✓ Hormones; Progestrone and Rest


Inevitable miscarriage

B) Inevitable Abortion:

- **Clinical feature:**
  - ✓ A period of amenorrhea.
  - ✓ heavy bleeding accompanied with clots (may lead to shock).
  - ✓ Severe lower abdominal pain no passage of tissue.
  - ✓ Bimanual Exam: Vulvae, Vagina and Cervix healthy, Uterus corresponds to period of gestation, **Internal cervical os is open** and product of conception felt in the cervical canal.
- **Management:**
  - ✓ Intravenous fluids
  - ✓ Cross Match blood.
  - ✓ Oxytocin; Syntocinon Intravenous infusion.
  - ✓ Evacuation of the uterus
  - ✓ Anti D if Rhesus negative

C) Incomplete Abortion:


Incomplete miscarriage

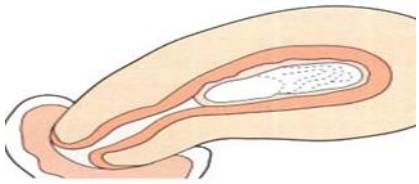
- **Clinical feature:**
  - ✓ **Partial expulsion of products**
  - ✓ Bleeding & colicky pain continue.
  - ✓ P.V.: **cervix os is open**, retained products of conception (RPOC) may be felt in the canal.
  - ✓ USS: retained products of conception.

D) Complete Abortion:

- A period of amenorrhea.
- Gestational age
- Heavy bleeding accompanied with+/-clots
- **Severe lower abdominal pain with passage of tissue expulsion of all products of conception**.
- Cessation of bleeding and abdominal pain.
- P.V.: **cervix internal os is closed**
- Uterus is bulky smaller than gestational age.
- USS: empty uterus. Because everything had passed already!
- Anti D

E) Missed Abortion: (when the fetus has died but is retained in the uterus)

- **Feature**:
  - ✓ Gradual disappearance of pregnancy Symptoms & Signs.
  - ✓ Brownish vaginal discharge.
  - ✓ Pregnancy test: may be + ve for 3-4 weeks after the death of the fetus.
  - ✓ USS: absent fetal heart pulsations.
  - ✓ Empty Gestational sac


Missed miscarriage

- **Complications**
  - ✓ Infection (Septic abortion)
  - ✓ ????DIC
- **Management**

  Wait 4 weeks for spontaneous expulsion.
  Terminate the pregnancy if:
  - ✓ Spontaneous expulsion does not occur after 4 weeks or if there is.
  - ✓ Infection.
  - ✓ Bleeding.
  - ✓ Manage according to size of uterus
    - Uterus < 12 weeks : dilatation and suction evacuation (D&C).
    - Uterus > 12 weeks : Oxytocic medications, cytotic drugs

F) Septic Abortion:

Uterine infection at any stage of abortion.

Causes:

- Delay in evacuation of uterus
- Delay seeking advice
- Incomplete surgical evacuation followed by infection from vaginal organisms after 48 hours:
  - ✓ Anaerobic streptococcus
  - ✓ Clostridium welchin
  - ✓ Bacterial fragilis
  - ✓ Coliform bacillus

G) Recurrent Abortion:

When a woman has had 3 consecutive miscarriages.
Risk of abortion for next pregnancy:
1 abortion → 15%

- **Etiology**:

Genetic factors: Karyotyping of both partners will reveal chromosomal anomalies

Anatomical factors:

- ✓ Uterine anomalies
- ✓ Cervical incompetence
- ✓ Hysteroscopy & Hysterosalpingography (HSG)* – Septum / Fibroid

* HSG is a radiologic procedure to investigate the shape of the uterine cavity & the shape & patency of the fallopian tubes.

Endocrine problem: uncontrolled diabetes, PCO

Immunological factors:

- ✓ Recurrent miscarriage is common in couples with similar HLA types
- ✓ Common in women with antiphospholipid antibodies syndrome*
- ✓ Investigations: Anticardiolipid ant. & Lupus anticoagulant

* A disorder that manifests clinically as recurrent venous or arterial thrombosis &/or fetal loss.

Maternal disease: SLE, Renal disease
Environmental factor: Smoking / Alcohol

Induced Abortion:

- **Therapeutic abortion** – termination of pregnancy before time of fetal viability for the purpose of safe guarding the health of the mother.
  Heart disease, cancer necessitating chemotherapy

  A certificate of opinion is given by 2 consultant obstetricians and a medical physician if needed.

- **Elective (voluntary) abortion** is the interruption of pregnancy before viability at request of the women but not for a reason of impaired maternal health or fetal disease.
- **Abortion Technique:**
  - ✓ Medical :
    - Oxytoic medications
    - Oxytocin/Syntocinon?? Syntocinon is given in case of inevitable abortion, but never given in missed abortion "due to risk of water intoxication as it has an anti-diuretic action".
    - Prostaglandins; routes
    - Anti progesterone Ru 486 (Mifepristone)
  - ✓ Surgical : Suction, Dilation and curettage (D&C)

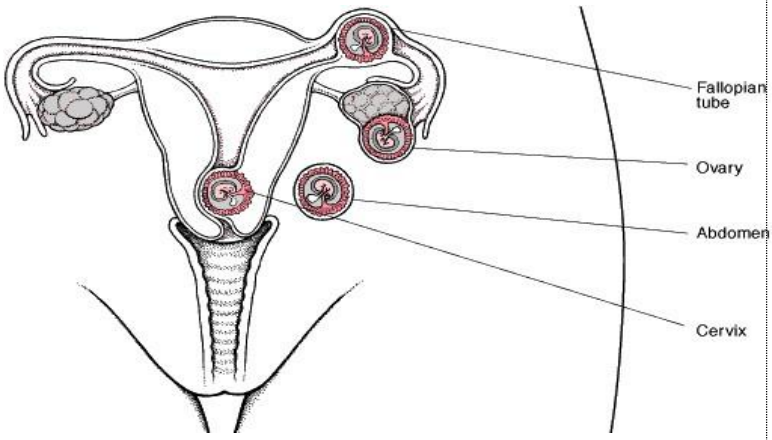
    Prostaglandin vaginal pessaries applied to Cervix. To ripen or soften the collagens and dilate the cervix before termination by suction curettage.
    Prostaglandin is given to ripen the cervix→ it will be dilated→ easier abortion than curettage.

Ectopic Pregnancy:

- **Ectopic pregnancy**: fertilized embryo implanted outside the uterine cavity
- **Sites:**

1. Fallopian tube (98%)
- Ampullary (most frequent) - Isthmic
- Infundibular and fimbrial
- Interstitial (least frequent)

2. Other sites
- Abdominal
- Ovary
- Cervical



- ✓ **Leading cause of maternal deaths in the first trimester**
- ✓ Constituting 1-2% of all conceptions
- ✓ Subsequent infertility
- ✓ Incidence increasing
- ✓ Mortality decreasing with better detection and early awareness

♣ **Risk factor:**

- ✓ **Prior history of PID (pelvic inflammatory disease)**
- ✓ Tubal Surgery
- ✓ Previous Ectopic Pregnancy
- ✓ IUD intrauterine device
- ✓ Tubal abnormalities

♣ **Etiology:**

These are factors that lead to *tubal damage or dysfunction* and thus prevent, *delay passage of the fertilized ovum into the uterine cavity*. May be due to:

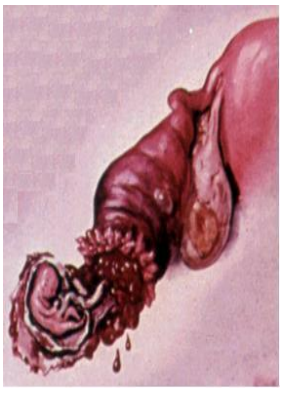
- ✓ Mechanical factors
- ✓ Functional factors
- ✓ Assisted reproduction
- ✓ Failed contraception
- ✓ Tubal sterilization – ectopic pregnancy rate increased 9-fold
- ✓ Following laparoscopic fulguration – highest rate of ectopic pregnancy
- ✓ Following hysterectomy – sperm migrated from a fistulous communication in the vaginal vault

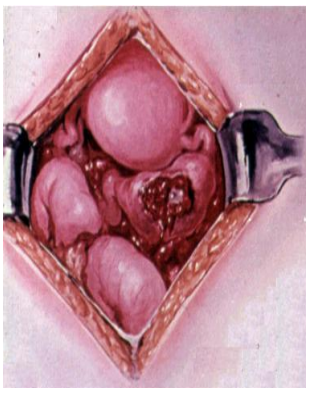
Tubal pregnancy:
- May occur before she misses her period
- A woman who had a history of previous ectopic pregnancy should inform her doctor immediately when she misses her period
- She'll present with rupture
- No x ray pregnancy
- No intrauterine pregnancy on US
- Asymptomatic
- So check and repeat β-HCG: if it is going down then it's dying pregnancy
- Repeat 48 platelet: if doubled then it‘s normal pregnancy.

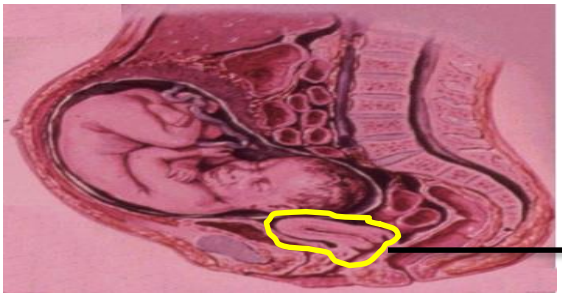
If not then it's abnormal pregnancy.

♣ **Outcome:**

- ✓ Spontaneous resolution
- ✓ Tubal abortion
- ✓ Rupture of tubal pregnancy
- ✓ Secondary abdominal pregnancy
- ✓ Tubal mole & pelvic hematoma





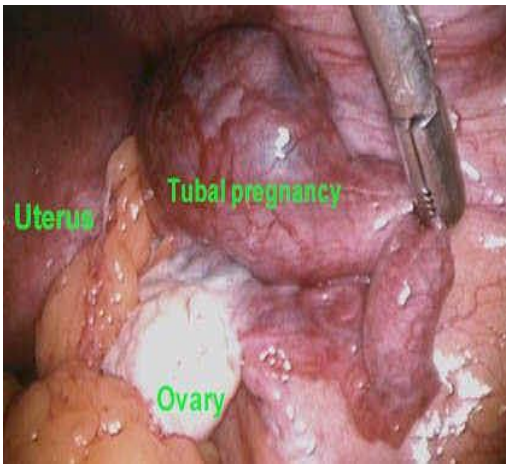


- **Symptoms:**
  - ✓ Symptoms of an ectopic pregnancy are often confused with those of a miscarriage or pelvic inflammatory disease.
  - ✓ The most common symptoms **are abdominal and pelvic pain and vaginal bleeding**.
  - ✓ Ruptured ectopic pregnancy is a true medical emergency.
  - ✓ Common symptoms of ruptured ectopic pregnancy include the following:
  - ✓ Dizziness, pale complexion, sweaty, fast heartbeat (over 100 beats per minute) . Abdominal or pelvic pain so severe that patient can't even stand up
- **Diagnosis:**
  - ✓ An ectopic pregnancy should be considered in any woman with abdominal pain or vaginal bleeding who has a positive pregnancy test.
  - ✓ Ultrasound showing a gestational sac with fetal heart in the fallopian tube is clear evidence of ectopic pregnancy.
  - ✓ An abnormal rise in blood βhCG levels may also indicate an ectopic pregnancy.
  - ✓ laparoscopy can also be performed to visually confirm an ectopic pregnancy. Often if a tubal abortion has occurred, or a tubal rupture has occurred, it is difficult to find the pregnancy tissue. Laparoscopy in very early ectopic pregnancy rarely shows a normal looking fallopian tube.
  - ✓ A less commonly performed test, a culdocentesis, may be used to look for internal bleeding. In this test, a needle is inserted into the space at the very top of the vagina, behind the uterus and in front of the rectum. Any blood or fluid found there likely comes from a ruptured ectopic pregnancy.
- **Management:**
  - ✓ **Expectant**
  - ✓ **Surgical:**

Surgical (if there is severe abdominal pain or bleeding and no medical therapy.
—Laparoscopy or laparotomy‖) - Laparoscopy is performed for:
Symptomatic patient
*Fluid/blood in the Pouch of Douglas
*Negative laparoscopy: follow-up with β HCG for the reasons:
• Intrauterine pregnancy
• Ectopic pregnancy that has been missed
- Laparotomy
- Salpingectomy/ salpingotomy
- Salpingectomy

- ✓ **Medical Management: Methotrexate** 1 mg/kg body weight
- ✓ **Indications:**
  - Haemodynamically stable, no active bleeding, No haemoperitneum, minimal bleeding and no pain
  - No contra indication to methotrexate
  - Able to return for follow up for several weeks
  - Non laparoscopic diagnosis of ectopic pregnancy
  - General anaesthesia poses a significant risk
  - Unruptured adenexal mass < 4cm in size by scan
  - No cardiac activity by scan
  - Willingness of treatment
  - HCG does not exceed 5000 IU/L
- ✓ **Contraindication:**
  - Breastfeeding
  - Immunodeficiency / active infection
  - Chronic liver disease
  - Active pulmonary disease
  - Active peptic ulcer or colitis
  - Blood disorder
  - Hepatic, Renal or Haematological dysfunction
- ✓ **Side effects:**
  - Nausea & Vomiting
  - Stomatitis
  - Diarrhea, abdominal pain
  - Photosensitivity skin reaction
  - Impaired liver function, reversible
  - Pneumonia
  - Severe neutropenia
  - Reversible alopecia
  - Haematosalpinx and haematoceles
    - However, these are not seen with managing ectopic
- ✓ **Treatment Effects:**
  - ↑ Abdominal pain (2/3 of patient)
  - ↑ HCG during first 3 days of treatment
  - Vaginal bleeding

- **Signs of Treatment failure and tubal rupture:**
  - Significantly worsening of abdominal pain, regardless of changes in serum HCG (Check CBC)
  - Haemodynamic instability
  - Level of HCG do not decline by at least 15% between Day 4 & 7 post treatment
  - ↑ or plateauing HCG level after the first week of treatment
- **Follow-Up:**
  - Repeat HCG on Day 5 post injection if <15 % decrease – consider repeating the dose of Methotrexate
  - If β-HCG >15 ↓ recheck weekly until <25 ul/l or disappears
  - Surgery should only be considered in all women presenting with pain in the first few days after methotrexate and careful clinical assessment is required.
  - If there is significant doubt surgery is the safest option
- **Surgical intervention:**
  - Surgery is the final option in the management of ectopic pregnancy.
  - If the ectopic pregnancy is continuing to develop and is posing a threat of rupture, or if it has already ruptured,
  - Surgical treatment is the safest option.
- **Surgery in ectopic pregnancy:**
  - **Procedures:**
  - Salpingotomy (or -ostomy): Making an incision on the tube and removing the pregnancy.
  - Salpingectomy: Cutting the damaged tube off.
  - Segmental resection: Cutting out the affected portion of the tube.
  - Fimbrial expression: "Milking" the pregnancy out the end of the tube.
- **Future Pregnancy:**
  - The chance of future pregnancy depends on the status of the tube left behind.
  - The chance of recurrent ectopic pregnancy is about 10%



Summary

Spontaneous abortion

Abortion type	Threatened	Missed	Inevitable	Incomplete	Complete
Signs/Symptoms Uterine bleeding	Before the 24th wk of gestation	Before the 24th wk of gestation	Before the 24th wk of gestation	Before the 24th wk of gestation	Before the 24th wk of gestation
Cervical os	Closed	Closed	Open	Open	closed
Uterine contents expelled	None	None	None	Some	All
Diagnosis	US detects **viable** fetus	US detects **nonviable** intrauterine fetus	Product of conception felt in the cervical canal	US: retained products of conception.	US: empty uterus
Treatment	Expectant -Anti-D if rhesus negative -Progestrone -Rest	-Wait 4 wks for spontaneous expulsion -Terminate the pregnancy if when needed	-Intravenous fluids -Cross Match blood. -Oxytocin IV -Evacuation of the uterus -Anti D if rhesus negative	-Intravenous fluids -Cross Match blood. -Oxytocin IV -Evacuation of the uterus -Anti D if rhesus negative	-Anti D if rhesus negative

Ectopic pregnancy

-Implantation of zygote outside of uterus; most commonly occurs in ampulla of **fallopian tube** (98% of cases) but can also occur on ovary, cervix, or abdominal cavity.

-Leading cause of **maternal deaths** in the first trimester.

-**Risk factors: history of PID** (pelvic inflammatory disease), tubal Surgery, previous Ectopic Pregnancy, IUD intrauterine device, tubal abnormalities.

-**H/P**

a. Abdominal & pelvic pain, nausea, amenorrhea; vaginal bleeding, possible palpable pelvic mass.

b. In cases of rupture, abdominal pain becomes severe & can be accompanied by hypotension, tachycardia, and peritoneal signs.

-**Labs:** An abnormal rise in blood β-hCG levels.

-**Ultrasound**: gestational sac with fetal heart in the fallopian tube is a clear evidence of ectopic pregnancy.

-**Treatment:** expectant therapy, medical (methotrexate), or surgical (laparoscopy or laparotomy).

MCQ's : (from pretest)

1. A 26-year-old G_3P_{0030} has had 3 consecutive spontaneous abortions in the first trimester. As part of an evaluation for this problem, which of the following tests is most appropriate in the evaluation of this patient?

a. Hysterosalpingogram
b. Chromosomal analysis of the couple
c. Endometrial biopsy in the luteal phase
d. Postcoital test
e. Cervical length by ultrasonography

2. Uterine bleeding at 12 weeks gestation accompanied by cervical dilation without passage of tissue.

a. Complete abortion.
b. Incomplete abortion
c. Threatened abortion
d. Missed abortion
e. Inevitable abortion

Answers:

1- b.

2- e.

For mistakes or feedback

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