



Bleeding in Early pregnancy

Causes:

1. **Abortion.**
2. **Ectopic pregnancy.**
3. **Vesicular mole.**
4. **Local gynecological lesions e.g. cervical ectopy, polyp, dysplasia, carcinoma and rupture of varicose vein.**

Abortion

Termination of pregnancy before viability of the fetus i.e. before 20 weeks or if the fetal weight is less than 500 gm or fetal length is less than 25cm.

Incidence: about 15-25% of clinical pregnancies.

Etiology:

1) **Chromosomal abnormalities:** cause at least 50% of early abortions e.g. trisomy, monosomy X (XO) and triploidy.

3) **Maternal infections:** e.g. listeria monocytogenes, mycoplasma hominis, ureaplasma urealyticum, cytomegalovirus and toxoplasma gondii which causes abortion if there is acute infection early in

4) **Trauma:** Relation of trauma to abortion has not substantiated (unless sever with multiple organ injuries) pregnancy. Acute fever for whatever the cause can induce abortion.

5) **Endocrine causes:**

- a. Progesterone deficiency (causes abortion between 8-12 weeks).
- b. Diabetes mellitus.
- c. Hyperthyroidism.

6) **Drugs and environmental causes:**

E.g. quinine, ergots, severe purgatives, tobacco, alcohol, arsenic, lead, formaldehyde, benzene and radiation.

7) Maternal anoxia and malnutrition.

8) Overdistension of the uterus: e.g. acute hydramnios.

9) Immunological causes:

a. Systemic lupus erythematosus.

b. Antiphospholipid antibodies that are directed against platelets and vascular endothelium leading to thrombosis, placental destruction and abortion.

c. Histocompatibility between the mother and father and in turn the fetus. It is assumed that histoincompatibility particularly in human leukocyte antigen (HLA- DR locus) is essential for stimulation of the immune system to produce blocking factors which prevent rejection of the fetus.

10) Uterine defects

e.g. Septum, Asherman's syndrome (intrauterine adhesions) and submucous myomas.

11) severe emotional shock

12) Idiopathic.

Mechanism of Abortion:

a. Up to 8 weeks: The gestational sac tends to be expelled complete and the deciduas is shed thereafter.

b. From 8-12 weeks: The decidua capsularis ruptures and the embryo is expelled either entire or after rupture of the amnion.

c. After 12 weeks: The placenta is completely formed and the process of abortion is like a miniature labor. It is more common for the fetus to be expelled but for the placenta to be retained due to firmer attachment to the uterine wall.

Clinical Varieties

Differential Diagnosis of Different Types of Abortion

Type of abortion	Bleeding	Colicky pain	Cervical dilatation	Uterine size	Products of conception	Shock	Pregnancy test
Threatened	+	-	-	Corresponding to amenorrhea	-	-	+
Inevitable	++	+	+	Corresponding to amenorrhea	-	±	+
Incomplete	++	+	+	Slightly smaller	+	±	+
Complete	+	-	-	Smaller	+	-	+
Missed	±	-	-	Smaller	-	-	-

(A) Threatened Abortion:

Clinical picture:

1. Symptoms and signs of pregnancy coincide with its duration.
2. Vaginal bleeding slight or mild, bright red in color originating from the choriodecidual interface.
3. Pain is absent or slight.
4. Cervix is closed.
5. Pregnancy test is positive.
6. Ultrasonography shows a living fetus.

Fate:

If the blood loss is less than a normal menstrual flow and is not accompanied by pain of uterine contraction there is a reasonable chance for continuing pregnancy. This occurs in 50% of cases while other half will proceed to inevitable or missed abortion.

Treatment:

1. Rest in bed until one week after stoppage of bleeding.
2. No intercourse as it may disturb pregnancy by the mechanical effect and the effect of semen prostaglandins on the uterus.
3. Sedatives: if the patient is anxious.

4. Treatment of controversy:

- Progestogens: e.g. hydroxy progesterone caproate (Primulot depot) 250 mg IM twice weekly is given by some if there is evidence of progesterone deficiency. However, low plasma progesterone level is an indication of pregnancy failure. Progestogens may cause retention of the dead ovum leads to missed abortion.
- Gonadotrophins may be of benefit in cases of luteal phase deficiency and those get pregnant with ovulatory drugs.
- Sympathomimetics, antiprostaglandins and folic acid were used but of no proven beneficial effect.

(B) Inevitable Abortion:

Clinical picture:

1. Symptoms and signs of pregnancy coincide with its duration.
2. Vaginal bleeding is excessive and may accompanied with clots.
3. Pain is colicky felt in the suprapubic region radiating to the back.
4. The internal os of the cervix is dilated and products of conception may be felt through it.
5. Rupture of membranes between 12-28 weeks is a sign of the inevitability of abortion.

Treatment:

1. Any attempt to maintain pregnancy is useless.
2. Resuscitation and ergometrine 0.5 mg is given by IM or IV route to induce tetanic uterine contraction and stop bleeding.

(I) If pregnancy is less than 12 weeks: Termination is done by vaginal evacuation and curettage or suction evacuation under general anesthesia.

(II) If pregnancy is more than 12 weeks:

- Oxytocin is given by intravenous drip to expel the uterine contents.

- If the placenta is retained it is removed under general anesthesia.

Cervical abortion:

is a variety of inevitable abortion in which the products of conception has been separated from the uterine cavity but retained in the cervical canal causing its distension.

Clinical picture:

- The patient complains of considerable bleeding and severe lower abdominal pain referred to the back.
- On examination, the products of conception are felt through the dilated cervix.

Treatment:

Under anesthesia, the cervix is dilated, contents are removed and cavity is curetted to remove the decidua.

(C) Incomplete Abortion:

Retention of a part of the products of conception inside the uterus. It may be the whole or part of the placenta which is retained.

Clinical picture:

1. The patient usually noticed the passage of a part of the conception products.
2. Bleeding is continuous.
3. On examination, the uterus is less than the period of amenorrhea but still large in size. The cervix is opened and retained contents may be felt through it.
4. Ultrasonography: shows the retained contents.

Treatment:

As inevitable abortion.

(D) Complete Abortion:

All products of conception have been expelled from the uterus.

Clinical picture:

1. The bleeding is slight and gradually diminishes.
2. The pain ceases.
3. The cervix is closed.

4. The uterus is slightly larger than normal.
5. Ultrasound: shows empty cavity.

(E) Missed Abortion:

Retention of dead products of conception for 4 weeks or more.

Carneous mole is a special variety of missed abortion in which the dead ovum in early pregnancy is surrounded by clotted blood.

Clinical picture:

(A) Symptoms:

1. Symptoms of threatened abortion may or may not be developed.
2. Regression of pregnancy symptoms as nausea, vomiting and breast symptoms.
3. The abdomen does not increase and may even decrease in size.
4. The fetal movements are not felt or ceases if previously present.
5. Milk secretion may start particularly in second trimester abortion because of the decline in estrogens secretion that were normally blocking the action of prolactin on the breasts.
6. A dark brown vaginal discharge may occur (prune juice discharge).

(B) Signs:

1. The uterus fails to grow or even decreases in size and becomes firmer.
2. The cervix is closed.
3. The fetal heart sounds cannot be heard by the doptone.

Investigations:

1. Pregnancy test becomes negative within two weeks from the ovum death, but it may remain positive for a longer period due to persistent living chorionic villi.
2. Ultrasound shows either a collapsed gestational sac, absent fetal heart movement or fetal movement.

Complications:

1. Disseminated intravascular coagulation (DIC) may occur if the dead conceptus is retained for more than 4 weeks.
2. Superadded infection.

Treatment:

The dead conceptus is expelled spontaneously in the majority of cases. Evacuation of the uterus is indicated in the following conditions:

1. spontaneous expulsion does not occur within four weeks,
2. there is bleeding,
3. infection or DIC developed or ,
4. patient is anxious. Most gynecologists advise evacuation of the uterus once sure diagnosis of missed abortion is made.

Evacuation is carried out as following:

1. *If the uterine size is less than 12 weeks' gestation:* vaginal or suction evacuation is done
2. *If the uterine size is more than 12 weeks' gestation :* evacuation can be done by
 - a. Prostaglandins: given intravaginally (PGE₂), intravenously, intra-or extra-amniotic (PGF_{2a}).
 - b. Oxytocin infusion.
 - c. Combination: starting with prostaglandin and completed with oxytocin.
 - d. Hysterotomy: is rarely indicated in 2nd trimester missed abortion if the medical induction fails initially and after repetition few days later.

(F) Septic Abortion:

It is any type of abortion, usually criminal abortion, complicated by infection.

Microbiology:

E.Coli, bacteroids, anaerobic streptococci, clostridia, streptococci and staphylococci are among the most causative organisms.

Clinical picture:

General examination:- Pyrexia and tachycardia. - Rigors suggest bacteraemia. - A subnormal temperature with tachycardia is ominous and mostly seen with gas forming organisms.- Malaise, sweating , headache, and joint pain. - Jaundice and /or haematuria is an ominous sign, indicating haemolysis due to chemicals used in criminal abortion or hemolytic infection as clostridium welchii.

Abdominal examination:

- Suprapubic pain and tenderness.
- Abdominal rigidity and distension indicates peritonitis.

Local examination:

- Offensive vaginal discharge. Minimal inoffensive vaginal discharge is often associated with severe cases.
- Uterus is tender.
- Products of conception may be felt.
- Local trauma may be detected.
- Fullness and tenderness of Douglas pouch indicates pelvic abscess which will be associated with diarrhea.

Complications:

Endotoxic (septic) shock may develop with its serious sequels as acute renal failure and DIC.

Treatment:

1. Isolate the patient . Bed rest in semi-sitting position.
2. An intravenous line is established for therapy. In case of shock a central venous pressure (CVP) line to aid in the control of fluid and blood transfusion is added
3. Observation for vital signs: pulse, temperature and blood pressure as well as fluid intake and urinary output.
4. A cervico-vaginal swab is taken for culture (aerobic and anaerobic) and sensitivity,
5. Antibiotic therapy: Ampicillin or cephalosporin (as a broad spectrum) +gentamycin (for gram -ve organisms) + metronidazole (for anaerobic infection)are given by intravenous route while awaiting the results of the bacteriological culture. Another regimen to cover the different causative organism is clindamycin + gentamycin.

6. Fluid therapy: e.g. glucose 5% normal saline and/or lactated ringer solutions can be given as long as there is no manifestations of acute renal failure particularly the urinary output is more than 30 ml/hour.
7. Blood transfusion : is given if CVP is low (normal: 8-12 cm water). It is of importance also to correct anaemia coagulation defects and infection.

8. Anti-gas gangrene (in *Cl. welchii*) and antitetanic serum (in *Cl. tetani*).
9. Oxytocin infusion: to control bleeding and enhances expulsion of the retained products.
10. . Surgical evacuation of the uterus can be done after 6 hours of commencing IV therapy but may be earlier in case of severe bleeding or deteriorating condition in spite of the previous therapy.
11. . Hysterectomy may be needed in endotoxic shock not responding to treatment particularly due to gas gangrene (*Cl. welchii*).

(G) Therapeutic Abortion:

Abortion induced for a medical indication.

(H) Criminal Abortion:

Illegal abortion induced for a non-medical indication.

(I) Recurrent (Habitual) Abortion:

Definition:

Three (two by some authors) or more consecutive abortions.

Etiology:

(I) Chromosomal abnormalities:

Can be detected in

1. Fetus : e.g. autosomal trisomy, sex chromosome monosomy (X), and polyploidy.
2. Parents : e.g. balanced translocation.

(II) Uterine abnormalities:

1. *Congenital anomalies*: e.g. hypoplasia, bicornuate, septate and subseptate uterus.
2. *Intrauterine synechiae* (*Asherman's syndrome*).
3. *Cervical incompetence*: whether congenital or acquired.
4. *Uterine myomas*.
5. *Deficiency of endometrial oestradiol and progesterone receptors*: leads to failure of implantation or early abortion .
6. *Divided uterine artery*: uterus with two ascending uterine arteries may fail to provide adequate blood flow to the developing placenta and the growing fetus.

(III) Infections:

- Toxoplasma. - Mycoplasma hominis -Ureaplasma urealyticum. - Listeria monocytogenes.- Brucella. - Chlamydia.- Syphilis.

(IV) Hormonal:

- Hypothyroidism, - Diabetes.- Luteal phase deficiency.

(V) Immunological:

1-Human leukocyte antigens (HLA) : the difference in HLA between both parents stimulates the maternal production of the "blocking factors" which prevent rejection of the conception. More sharing in HLA between the parents causes recurrent abortions. So the incidence of recurrent abortions is higher if there is positive consanguinity between the two partners.

2-Antiphospholipid antibodies: These antibodies cause placental vessels thrombosis resulting in infarction and placental insufficiency.

3-Systemic lupus erythematosus.

(VI) Miscellaneous:

-Chronic malnutrition. -Chronic anaemia. -Chronic cardiac and renal diseases. - Cigarette smoking and alcohol abuse.

Diagnosis

(A) History:

Abortion due to cervical incompetence is characterized by:

History of a previous operation as dilatation or amputation of the cervix may be present.

It is a midtrimester abortion; occurs usually between 16-28 weeks of pregnancy,

preceded by spontaneous rupture of membrane,

abortion process takes a short time,

usually associated with slight pain and bleeding,

the expelled fetus shows no abnormalities,

the duration of pregnancy is decreasing each time due to weakness of the isthmus by successive pregnancies.

Recurrent abortion with increasing duration of pregnancy:

Uterine hypoplasia.

Syphilis : abortions occur after the 4th month as the treponema pallidum cannot pass the placental barrier before that.

Recurrent abortion with decreasing duration of pregnancy:

Cervical incompetence

Ask about:

1. **Consanguinity between the couple.**
2. **History of in utero exposure to diethylstilbestrol (DES) that causes uterine anomalies..**
3. **Exposure to radiation, infections or environmental pollutants.**

(B) General examination:

may reveal:- malnutrition,- anaemia,- thyroid disorder.

(C) Local examination:

may reveal

- fibroid,

- cervical incompetence: which can be diagnosed by:

(a) Between pregnancies:

1-The cervix can admit easily No. 8 Hegar's dilator without resistance or pain.

2-A 2 ml (6 mm diameter) Foley's balloon catheter can be withdrawn through the cervical canal with minimal resistance.

3-Hysterosalpingogram: demonstrates cervical funneling.

4-Extensive old cervical lacerations may be detected.

(b) During pregnancy:

1.The membranes are bulging through the patulous os.

2.The transverse diameter of the internal os is more than 2 cm measured by abdominal or vaginal ultrasonography.

(D) Special investigations:

1. *Urine analysis* for chronic renal disease and diabetes.

2. *Blood for:*

Hemoglobin. - Sugar. - kidney function tests.

Thyroid function tests.

VDRL (venereal disease research laboratory) for syphilis.

Serological tests for toxoplasma and brucellosis.

Mid- luteal serum progesterone level.

Detection of HLA sharing between the couple.

Antiphospholipid antibodies.

3. *Microbiological investigations* for Chlamydia and mycoplasma.

4. *Dating of premenstrual endometrial biopsy.*

5. *Cytogenetic study* to detect chromosomal abnormalities in both parents and the resultant abortus.

6. *Hysterosalpingography and / or hysteroscopy:* may diagnose uterine malformations as septate uterus , submucous myoma or incompetent cervix.

Treatment

(A) Medical treatment:

Treatment of the cause as :

- 1. anemia and malnutrition,**
- 2. diabetes,**
- 3. renal diseases,**
- 4. infections as Chlamydia and mycoplasma (tetracycline or doxycycline) and toxoplasma (spiramycin) which may need another course(s) of treatment during pregnancy.**
- 5. Luteal phase defect treated by progesterone or progestogens in the secretory phase and up to 16 th week of pregnancy.**

(B) Surgical treatment:

(1) *Cervical cerclage:*

- It means encircling the cervix at or as near as possible to the internal os by a non-absorbable suture.
- The best time for the operation is about 12-14 weeks, so that the placenta is formed and there is no possibility of abortion due to congenital anomalies of the early embryo.
- The suture is removed at 38 weeks or if labor started at any time.

Ultrasonography is done before operation to:

- confirm fetal viability,
- exclude congenital anomalies,
- measure the internal os.

I- Vaginal cerclage:

i) Shirodkar operation: Two incisions at the reflection of the vaginal wall on the cervix are done anteriorly and posteriorly and bladder is dissected upwards. Nylon or silk suture or a dacron (mersilene) tape is applied around the internal os under the cervical mucosa.

ii) Mc Donald operation: It is the commonest operation. The cervix is surrounded from outside by a nylon or silk purse- string suture. The suture takes bites of cervical tissue at 3,6,9 and 12 o'clock then tied anteriorly or posteriorly. This operation is easier and gives nearly the same results as Shirodkar.

(II) Abdominal cerclage:

In case of previous high amputation of the cervix extensive cervical laceration or repeated failure of vaginal cerclage. The isthmus uteri is encircled by a non-absorbable suture and the patient should be delivered by caesarean section.

(2) Metroplasty :

i) Bicornuate uterus:

Strassman operation is done to unify the two horns.

ii) Septate uterus:

- Jones operation: involves excision of the uterine septum through a wedge - shaped incision.

- Tompkin's operation: involves dissection of the uterine septum.

- Hysteroscopic excision of the septum is the preferred management nowadays as it leaves no scar in the uterus and the patient can be delivered vaginally later on in addition to absent abdominal incision and early ambulation

(3) Asherman's syndrome:

Hysteroscopic dissection of the intrauterine adhesions is the preferred management nowadays.

(4) Myomectomy:

In case of submucous myoma which disturb the endometrium and its vasculature affecting implantation and subsequent fetal development. This can be done through hysteroscopy also.

POST-ABORTIVE BLEEDING

Definition:

Persistent or recurrent bleeding within the first 4 weeks after abortion.

Causes:

1. Perforation of the uterus or cervical laceration.
2. Retained products of conception.
3. Infection leading to sloughing of a septic debris.
4. Submucous myoma or a fibroid polyp.
5. Gestational trophoblastic disease
6. Local gynecological lesion as cervical polyp or carcinoma.
7. Hemorrhagic blood disease.
8. Dysfunctional uterine bleeding.

Generally the frequency of spontaneous abortion is 15 % however, the incidence varies with maternal age:

<35 years.....15% -35-39 years.....25-30%

39-42...35% ->42 years...50%

*85% occurs in the first trimester and is more likely of embryonic causes.. chromosomal or developmental abnormalities.

*2nd trimester abortion is commonly due to maternal factors. cervical incompetence and Antiphospholipid antibodies.

**Investigations for abortion....CBC,B-HCG,Bood type,urine analysis.
Crossmatching and DIC profile (platelet,fibrinogen,prothrombin
time,PT,activated partial thromboplastine time,aPTT) when needed**

**Give anti-D immunoglobulin for RH negative mothers 250ug if <12weeks and
300ug if >12weeks.Give iron to correct anemia.**

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