Institute of Mosul Technical Teaching
Nursing Department

MATERNITY NURSING

Second year

Preparing by: غصون عبد الاله عبد الله
Anatomy of the female reproductive system

In adult female reproductive organs lie in the pelvis below the level of the brim in the part known as (true pelvis)

The vagina

It is amuscular canal lined with stratified squamous epithelium the vagina connect the uterus to the external os.

It is average length is 10cm through which the baby is born.

The uterus

Is a hallow muscular organ lined with aglandular epithelium.

In adult mature female the uterus weight about 70 gram and about 7.5 cm length and has wall about 2 cm thick.

It is roughly pear shaped and consist of 2 unequal part an upper corpus and body which is about 5cm long and lower cervix which is about 2.5cm long.

In uterus the fetus grow and from which it is expelled during labour.

The fallopian tubes (uterine tubes)

Extend outward from the uterus cornu to end near the ovaries at the abdominal ostium.

The tubes open in to the peritoneal cavity so communicate with the uterine cavity.
The tubes convey the ovum sperm and zygote providing oxygenation and nutrition to them. They are about 10 cm in length and described in 4 parts:

1- interstitial part
2- isthmus
3- ampullary
4- infundibulum

Fertilization of mature follicle by the sperm occur in the tube

**The ovaries**

Are 2 almond-shaped solid organs measuring 3.5cm length 2cm in depth and 1cm in thickness.

The mature and actively functioning ovary contains numerous gravid follicle which rupture at about day 14 of each cycle to discharge it is ovum.
Puberty and menopause

Puberty:

Normally start at 11 years with normal range 9-13 year.

It begin with enlargement of the breast then growth of pubic hair ayear latter, during this time the girl continue to grow so may she appear taller than the boy in her age at this time the uterus and the pelvis grow at same time.

The age of menarche (first menstrual cycle) in girls is modified by:
1- hereditary
2- nutrition
3- environment

Menstruation usually occur earlier in tropical area than in cold area

The first few cycles are usually unovulatory (no ovulation) but when hypothalamus pituitary axis is fully mature the cycle become ovulatory

Menstruation: is discharge of blood and cast off endometrial cells from the uterine cavity, duration of cycle vary between 4-7 days and it vary from female to female, it occur in average of 28days frequency with range 24-35 days
Ovulation: is maturation of one or more primordial follicle by the effect of hypothalamic hormones acting on pituitary gland anterior lobe, gonadotropin releasing hormone pass via the hypophyscal portal veins to the anterior lobe of pituitary gland causing release of 2 gonadotrophic hormones (follicular stimulating hormone and luteinzing hormone) which are released in pulsatile manner.

FSH bring about the development of grafian follicle within the ovary, each follicle consist of a maturing ovum with surrounding granulosa and theca interna cells, it is derived from the ovarian stroma.

Granulosa and theca cells produce oestradiol hormone in gradually increasing amount as the follicle mature.

At about day 12 of the cycle a sudden surge in the output of LH, and a lesser rise in the output of FSH.

LH surge brings about ovulation on about day 14 of cycle.

Early in the cycle up to 50 follicle start to mature but only dominant follicle will mature fully and ovulate while others regress.

When the ovum has been release from the follicle there is temporary fall in the estrogen level and FSH and LH level are reduced the granulose and theca cells of empty follicle become swollen and take up fat. The whole of the follicle takes on a yellow colour and is so called
(corpus luteum) which secretes progesterone and estrogen so estrogen level rises again, if the ovum is not fertilized the corpus luteum degenerate in the last week of the cycle into a hyaline body called corpus albicans, the level of estrogen and progesterone fall the ovarian cycle ends and menstruation occur.

Fertilization:

Is penetration of the head of the sperm to the ovum where fusion of the nuclei occur and single nucleus formed and the fertilized ovum contains 46 chromosome fertilization takes place in the ampullary portion of the fallopian tube, as the ovum is picked by the fimbria of the tube as soon as rupture of the garffian follicle occur sperm pass through cervix, uterus reaching the tubes.

Fertilized ovum pass along the tube to uterine cavity and burrow into the endometrium (decidua)

The action of estrogen and progesterone is to maintain and carry on growth of endometrium.

If pregnancy not occur the endometrium undergo necrosis, disintegrate and discharge as menstrual cycle blood.
Menopause:

Is cessation of menstrual cycle at about age of 50 years with normal range of 47-55 years.
Pregnancy

Woman to get pregnancy should have the following physiology:

Stage:

1- **Ovulation**: is maturation of the grafian follicle and rupture giving mature ovum, taken by fallopian tube for fertilization.

2- **Insemination**: is entrances of the sperms to the female vagina about 300 millions sperms each time but one which will fertilize the ovum (should be active, normal shape sperm). Other sperm will die and degenerate.

3- **Fertilization**: is penetration of the head of sperm to the ovum where fusion of the nuclei occur and single nucleus formed resulting fertilized ovum contain 46 chromosome, fertilization take place in the ampullary portion of the tube fertilized ovum pass along the tube into the cavity of the uterus.

4- **Implantation**: is the embedding of the fertilized ovum in the uterine decidua small fingers-like project grow into surrounding the fertilized ovum. Implantation occur about 7 days after fertilization where it cannot delay any more than 4 days in fallopian tube and it start to divide and increase in size.

By implantation you can say pregnancy takes place.

Terminology:

**Zygot**: from conception to day 21.

**Embryo**: From third to 11 week inclusive.

**Fetus**: from 12th week till birth.

**Normal Pregnancy**: is state of being the woman is carrying fertilized ovum, embryo or fetus inside her uterus.
A full term pregnancy can last 37-42 weeks divided into 3 trimesters each last 13 weeks.

**Diagnosis of pregnancy:**

By using 3 main diagnostic tools:

1- History symptoms.
2- Physical examination-signs.
3- Investigation Hormonal and ultra Sonography.

**Symptoms of Pregnancy:**

1- **Amenorrhea:** is the earliest symptom of pregnancy in woman whose menstrual period was previously regular has sudden cessation of her period.

Things that confuse the diagnosis of early pregnancy are:

1) Atypical last menstrual period.
2) Contraceptive use.
3) History of irregular menses.

2- **Breast Symptoms:** is in the early weeks of pregnancy some tenderness and fullness of breast complained.

3- **Morning Sickness:** vomiting occurs in some pregnant and nausea especially in morning.

4- **Urinary Disturbances:** increase in number of urination times especially in early weeks.

5- **Quickening:** it occur on about 16-20 weeks.

6- **Vaginal Changes:** changing from red or pink to bluish colour as increase vascularity.

7- **Skin Change:** appearance of chlosma darkening of the nipple and lina nigra on abdomen.

8- **Fatigue.**
Signs of Pregnancy:

1) Enlargement of the abdomen: the size of abdomen increase to the end of the 12th week pregnancy where level of uterus felt above pubic symphysis directly.

At 22nd week of pregnancy uterine level at umbilicus. At 36th week uterine level at xifisternium.

2) Painless uterine contraction: (Braxton-Hicks) is due growing uterus.

3) Fetal heart sound: heard by sonic aid early in 2nd trimester; and feta scope later on.

4) Feeling of fetal parts and movement on palpation of abdomen

Investigation:

1) **B-HCG level**: increase level of human chronic, gonadotrophin in pregnant serum days after fertilization.

2) **Pregnancy test in urine**: detection of human chronic gonadotrophine hormone in urine days after missed period.

3) **Ultrasound Diagnosis of Pregnancy**: early in pregnancy detection of gestational sac at about 5 weeks pregnancy, later on detection of fetal heart pulsation and embryo within sac.

Calculations of expected date of delivery last menstrual period (LMP) should be known, add 7 days and return 3 months to calculate expected date of delivery (EDD).

**Growth and Development of Fetus**

Fertilized ovum stand to divide in (2-4-8…) manner in fallopian tube and increase in size till it forms mass of cells (Morulla) in the 4th day post fertilization. Morulla has outer trophoblastic layer and inner dividing celss and in between space containing fluids. When morulla reaches the
uterine cavity embend itself in the thick uterine lining (Decidua) in upper anterior or posterior part of uterus.

In day 7 or 8 morulla is connected to the decidua and embended in it by action of trophoblastic villi in decidua, by this time the embryonic period growth started and go one till the last day of the 8th week. Post fertilization (10 weeks post the LMP) when all organ systems are formed but are not mature for functioning.

From the end of 2nd week fetus is growing depending completely on mother's blood as the digestive respiratory fetal systems are inactive.

- At end of the 12th week, fetal length 8-9 cm, weighted 57 gm.
- At end of the 16th week, length is 15.2 cm, wt. 160-180 gm. Heart beat and movement are positive, sex can be differentiated.
- At end of 20th week, length 17 cm, wt. 300 gm. Quickening positive and can hear (FHS) fetal heart sound by feta scope.
- At end of 24th week, length 30 cm, wt. 690 gm, appearance of vernix caseosa on skin.
- At end of 28th week, length 35.6 cm, wt. 1200 gm. 20% of labour with good nursing care can live.
- At end of 32nd week, length 40.6 cm, wt. 1800 gm, redish wrinkled skin. Fetus respond to external stimuli. 60% of labour can live.
- At end of 36th week, length 45.5 cm, wt. 2.4 kg. appearance of planter creases, nail growth complete. Chance of life if labour occur is 94%.

- At end of 40th week, length 50.8 cm, wt. 3400 gm. Fully mature fetus, no skin wrinkles and skin covered with caseasa, hair cover whole head, testes descend, might see prominent breast due to effect of molthers hormone.
Placenta:

Is rounded disc like shape organ, 15-20 cm in diameter. Weight 1/2 kg, formed of 15-20 lobes attached to uterine wall by its rough surface. The outer surface (fetal surface) is smooth and in contact with amniotic sac, placenta consists of numerous chorionic villi each of which contains fetal blood vessels and is covered by trophoblastic lies on the uterine wall. It is connected with the fetus through the umbilical cord and carries fetal circulation.

Function of Placenta:

1) Nutritive, respiratory, secretory and excretory.

2) Passage of vitamins and hormones pass to the foetus through it.

3) Acts as a Barrier between toxic materials in maternal circulation, prevents its reach to fetus.

4) Hormonal secretion necessary for pregnancy continuation and fetus.
   a- Human chronic Somammodropin hormone.
   b- Human chronic Gonadotropin hormone.

Umbilical Cord:

Cord of 50 cm long, 1-2 cm in diameter, connecting between mother through placenta and fetal circulation. Cord contains two arteries (carrying deoxygenated blood) and one vein (carrying oxygenated blood). Cord attached to the center of the placenta. It is covered by whartous jelly to conserve it.
**Amniotic Sac and Fluid**

Sac fill the uterine cavity containing both fetus and amniotic fluid. The wall of the sac consist of 2 layers:

Inner, smooth translucent gray colour = Amnion.

Outer: rough, thick layer = Chorian. Both are adherent to each other. Membranes secret enzymes and steroids hormones.

**Amniotic Fluid**: is clear, faint yellow color, normally started 500 cc. and increase in amount to 1500cc with progress of pregnancy. Till 38 weeks.

**Function of Amniotic Fluid:**

1- Protect fetus against any injury or infection

2- Facilitate movement of fetus.

3- Maintains a constant temperature around the fetus.

4- Help dilation of the cx. Os. during labour and wash vagina before birth.
Prenatal Care

Aim of Antenatal care for Pregnant Mother:

1- To keep mother and fetus healthy during pregnancy by Routine examination and investigation to diagnose any disease, condition or abnormality.

2- Preparation of mother for labour and care of neonate, breast feeding, avidness of complication in Purperium.

Antenatal care include:

Information recording: in special file for each pregnant since the booking visit (first visit of pregnant the health center).

- Name, age, weight, length, blood pressure, investigation G.U.E. sugar albumin in urine.

- Past medical history, and surgical history.

- Past obstetric and gynological history.

- LMP and EDD.

- General examination of pregnant: appearance a anemia, jaundice, examination of chest and heart, oedema of legs or other part of body.

- Abdomen examination, palpation of fetus, position, lie, FHS.

- Vaginal examination if necessary.

Investigations: Hb, blood group and Rh (both parents). Test for toxoplasmosis, G.U.E (sugar and albumen, serological test for venereal disease.

Time of visits

1) 1st visit to the gynecologist in the clinic or in health centre.

2) routine visits are once monthly till the 7th month where will be once every two weeks and in last month weekly till labour in normal
pregnancy but in presence of any complications frequency of visits should be more.

**Advice to the pregnant mother:**

- Relaxation: 1-2 hours sleep or rest in afternoon or lying with elevation of feet.
- Avoid physical and psychological stress.
- Average hrs. of sleep should not less than 8 hrs. daily.
- Avoid travelling.

Pregnant Diet: should be balanced, containing proteins, carbohydrate, vitamins, iron, fat, calcium, water.

Pregnant is liable for anemia and hypocalcaemia due to the growing fetus in her uterus. She should decrease intake of tea, coffee.

3) Body Hygiene: daily bath and special care for the external gentile and perineum.

4) clothes: should be comfortable especially at area of chest and abdomen, avoid belts, and using suitable underwear (bar). Avoid high heeled shoes to prevent fall and accident.

5) Exercise: best one is walking and avoid strenuous exercise heavy lifting. Long standing should be avoided, to prevent pressure on veins and varicose vein.

6) Medication: drugs only prescribed by doctor can be taken.

7) Dental Care: routine dental examination for pregnant and treatment in presence of any problem as infection, caries, gingivitis, abscess.

8) Intestinal Care: drinking of adequate amount of water, eating vegetable and fruit keep normal intestinal movement, decrease or avoid ten with simple exercise.
9) Care of Breast: breast feeding should be promoted and all its advantages should be explained; cleaning massage for the nipple by fingers circulation to pull it out in the last 2 months of pregnancy. Using of suitable bar.

10) Abdominal Care: avoid itching by nail to prevent skin infection, using single creams.

11) There should be an invitation to attend classes in preparation for childbirth, and psycho-physical classes with simple explanation of the growth of fetus in uterus. Demonstration about the stage of labour and about the purperium.

12) Regular checking of the pregnant at the health center or the gynecologist monthly till the 7th month of twice monthly till last month were should be checked weekly, with routine procedures at each visit of general examination, uterine level and send for GUE (with sugar and albumin in urine). Checking FHS (Fetal Heart Sound). Checking B.P. weighting pregnant, examine for presence of oedema.

13) Vaccination: with tetanus toxoid to prevent tetanus neonaturn. 1st dose given at the 4th month of preg. (16 wks). 2nd dose given at the 5th month of pre. (20 wks). 3rd dose 6 months after the 2nd dose or 1 year. 4th dose 1 year after 3rd. 5th dose 1 year after 4th.

Vaccination dose 1/2 cc of tetanus toxoid given intramuscularly in the upper half of arm external surface of arm.

The height of the fundus at stages of pregnancy when head of fetus engages in the pelvis at 40 wks fundus descend below.
General Complications of Pregnancy

Abnormal Pregnancy

**Constipation:**

A troublesome symptom in many pregnant women. Constipation tend to aggravate haemorrhoids and varicose veins.

**Causes:**

1- Relaxing effect of progesterone hormone on the muscles of intestinal wall.

2- Later in pregnancy the enlarged uterus may cause mechanical obstruction of the large bowel.

**Nursing Care:**

1- Advice the pregnant woman to take diet containing plenty of fruit and cellulose (roughage).

2- Administration of mild laxatives like senna given at night is safe.

3 – Strong purgatives are avoided castor oil should never be taken.

**Varicosity: Dilation of veins**

**Causes:**

1- The pressure of the enlarging uterus on the pelvic veins.

2- The hormonal changes of pregnancy (progesterone) can cause increase in peripheral venous pressure and dilatation of veins.

2)Varicosity:

**Varicose veins of legs:**

May appear for the first time during pregnancy or may become worse if it is already present. Varicose veins tend to subside after delivery but frequently recur and are aggravated by each succeeding pregnancy.
Symptoms and Signs:
1- The women complains of dull aching pain in her limbs.
2- The superficial veins often engorged and bluish.
3- The limbs may be oedematous in severe cases.
4- Injury to the varicose veins may lead to heamorrhage or ulceration of skin.
5- Veinous thrombosis is serious complication.

Nursing Care:
1- No tight bands that would impede the circulation.
2- Advice the patient to avoid long periods of standing and to sit with her feet raised as high as possible.
3- Temporary wearing of supportive elastic stocking or crepe bandage make the patient more comfortable. The bandage should always be removed during the night.
4- In serious cases absolute rest in bed, the foot of which is raised.
5- Surgery is better to be avoided.

Varicose of the vulva:

The veins of the lower third of the vagina and vulva may become varicose during pregnancy causing great disability. After delivery they usually disappear.

Signs and Symptoms:
1- Discomfort or aching pain on standing.
2- The vulva is enlarged, knotty and bluish.
3- Some pruritus.
4- Rupture during pregnancy is rare but subcutaneous rupture may occur during labour (delivery) giving rise to a big hematoma is treated by pressure.

**Nursing Care:**

1- Advice the patient for bed rest with the foot of bed raised.
2- The wearing of a diaper may give some support on standing.
3- Operation should never be done during pregnancy because bleeding is severe, healing is slow due to moisture of the part and sepsis.

**Hemorrhoids (Piles)**

External hemorrhoids are varicose veins on the anal margin which may appear during pregnancy especially if the patient is constipated.

**Causes:**

1- The pressure of the uterus on the large intestinal and pelvic veins.
2- Constipation.

**Signs and Symptoms:**

1- Pain in the anus.
2- Protrusion of the dilated veins out of the anus.
3- Sometimes bleeding from them.

**Nursing Care:**

1- Avoidance of constipation.
2- Application some soothing, hemorrhoid ointments is enough in mild cases.
3- Suppositories e.g. Anusal.
4- Cold compresses.
5- Sometimes warm bath to which magnesium sulphate is added to reduce the engorgement.
6- Gentle replacement of the lubricated piles inside the anal canal.

**Hyperemesis Gravidarium:**

It is an exaggeration of the common morning sickness. The vomiting is so severe to affect the patient's health. The combination of vomiting, nausea and anorexia can produce state of malnutrition which may be fatal.

**Causes:**

1- Probably a hypersensitivity of the vomiting center to the raise in oestrogen level during early pregnancy.

2- Emotional cause in women who have a sensitive nervous system.

**Signs and Symptoms:**

1- The patient is apathetic, weak and miserable.

2- Signs of dehydration the eyes are dull and sunken. Skin is inelastic tongue is brown coated.

3- Breath is offensive and smells of acetone.

4- Urine is dark in colour high specific gravity contains ketones, low chlorides.

5- Constipation due to starvation and dehydration.

**Nursing Care:**

1- The patient should be admitted to hospital.

2- The psychological aspect:

The impression that recovery is assured should be created and the patient told that she is past the worst and not likely to vomit much more.

3- The temperature-pulse should be recorded twice daily and in serious cases four-hourly.
4- The blood pressure is taken twice daily. Low B.P. is a sign of myocardial weakness.

5- Urine analysis: the urine is examined on admission and twice daily for specific gravity, ketones, chlorides and twice daily for protein and bile.

6- Weight: the patient is weighted on admission and every second day.

7- No food is given by mouth for at least 24 hours in order to rest the stomach.

8- Intravenous fluids is given (fluid, glucose, sodium chloride and vitamins B and C must be replaced).

9- Watch for serious signs:
   a- When pulse is over 100 this is a warming sign, and when over 120, weak or irregular it indicates serious myocardial weakens.
   b- Temperature over 37.2ºC.
   c- Jaundice or presence of bile in urine
   d- persistent protein urea.
   e- cerebral signs are a late manifestation, double vision nystagmus, squint, delirium, and loss of memory drowsiness and coma.

10- On discharge the patient is advised regarding her diet, to avoid constipation and to report any further vomiting.

**Anemia:** common in pregnancy especially multipara of lower income group. It is essential to diagnose anaemia at beginning of pregnancy to be treated. Haemoglobin of 10 gm/100 ml (70%) indicates anaemia,
Causes:
1- Menstrual loss between pregnancies.
2- Dietary deficiency e.g. low protein and iron intake.
3- Imperfect absorption of iron (aggravated by ingestion of alkalis).
4- Withdrawal of iron by the fetus.
5- Loss of blood during the third stage of labour.
6- Hook warm infection.

Signs and Symptoms:
1- Pallor of mucous membrane.
2- Lassitude (always tired).
3- Palpation and rapid pulse.
4- Poor appetite.

RX:
1- Mild cases respond well to oral administration of medical iron but digestive disturbances and constipation may occur. Ferrous sulphate tablets 180 mg. T.I.D are effective and cheap.
2- Intravenous inferon if the response to oral iron is poor.
3- Blood transfusion if the haemoglobin is dangerously low or labour is approaching.

Nursing Care:
1- Test the blood for haemoglobin value.
2- Advice the pregnant woman to prevent anaemia by taking food rich in protein and iron like liver, meat, brown bread, vit. C in fruits and green vegetables. Also urging women to take regularly the tablets prescribed by the doctor.
3- To avoid excessive blood loss during the third stage of labour.
4- Encouraging the puerperal women to continue taking iron pills for one month.
Megaloplastic Anemia of Pregnancy:

It is severe form of anemia due to insufficiency of folic acid when Hb is below 7g/100 ml (50%).

Causes:

1- The demand of the fetus for folic acid.
2- Interference with absorption or metabolism of folic acid.

Signs and Symptoms:

1- Severe Pallor.
2- Extreme, Weakness.
3- Vomiting.
4- Despnea.
5- Sometimes diarrhea.
6- Persistent swelling of the ankles.

RX:

1- Administration of folic acid 5 mg t.i.d with iron throughout pregnancy and continued six weeks post partum.
2- Rest in bed.
3- light diet, high in protein, iron and minerals.
4- Blood transfusion if anaemia is severe or delivery is imminent.

Oedema in Pregnancy

Oedema of legs and feet is common at end of pregnancy but normally oedema is not present in other parts. Oedema is detect by pressure with thumb over tibia. 25% of pregnant women have leg oedema.
**Signs and Symptoms:**

1- Oedema is an early sign, slowly increasing, may remain static rarely appears suddenly.

2- Toxemic oedema usually affect ankles first, involves the whole body sooner or later especially obvious in eyelids and face, sudden tight wedding ring.

3- Marked Oedema of the vulva makes vaginal delivery dangerous due to actual obstruction. Caesarean section is necessary.

**Nursing Care:**

1- A mild case only reassure the woman and advice for rest in bed and good diet.

2- Check the blood pressure and examine urine for albuminuria (signs of toxemia of pregnancy) pre-eclampsia.

3- Check the weight of the patient.

4- Amount of oedema is assessed and recorded every day.

**Essential Hypertension:**

It is the elevation of blood pressure over 140/90 mmt. Present on two or more occasion prior to the 20\textsuperscript{th} week of pregnancy.

**Causes of Essential Hypertension:**

1- Unknown.

2- Hereditary factor (family history positive in 80\% of cases).

2- Increase in the peripheral resistance due to vascu constriction of blood vessel.

**Causes of Secondary Hypertension:**

1- Chronic pyelonephritis.
2- Glomerular nephritis.
3- Polycystic kidneys.
4- Unilateral renal Ischemia.
5- Phaeochromocytoma.

**Complications:**

1- The hypersensitive woman is liable to develop pre-eclampsia (toxemia of pregnancy). Where these in hypertension + albuminuria + oedema.
2- Small fetus and placenta.
3- Fetal death inside the uterus or neonatal death.
4- Ante-partum baemorrhage.
5- Prematurity.
6- Renal failure and ureamia.
7- Retinal changes.
8- Cerebro vascular accident (Haemorrhage) C.V.A.
9- Cardiac failure.

**Signs and Symptoms:**

1- Symptoms (+ve family history of hypertension).
2- Headache.
3- Epigastric pain.
4- Vomiting.
5- Visual disturbances.

**Nursing Care of Pregnancy:**

**A- Mild cases:** When B.P. is not over 150/90 mm.Hg.
   1- The woman may be treated at home.
2- Advice her for additional rest two hours during the day and 10 hours at night.

3- Reassurance and protection from worries.

4- Sedative drug to ensure good sleep at night.

5- No excess salt in diet (Restriction of salt).

6- Continuous checking of blood pressure daily.

7- Examine for signs of pre-eclampsia (complication).

8- Take the weight every week.

B- Severe cases: when B.P. is more than 150/90 mm H.G.

1- Admission of patients to hospital for long periods to ensure, complete bed rest, weight control and salt restriction.

2- Restriction of salt in diet.

3- Sedatives at day and night.

4- Urine test for (Albuminurea) every other day.

5- Careful watch for signs of pre-eclampsia.

6- Urinary oestriol assays made weekly after the 30th week to detect foeto-placental dysfunction.

7- Antihypertensive drugs. Methyldopa (Aldomet) dose 250 mg orally tired when B.P. is unduly high.

8- Induction of labour:

If B.P. remains high there is danger of intrauterine death of foetus. For the multigravida woman with a bad obstetric history labour is usually induced at the 36th weeks. Puncture of membranes and oxytocin intravenous drip are usually employed.

Early in labour: Amylobarbitone sodium 200 mg is given.
During labour: Ergometrine is not prescribed. For old primegravida must be delivered by Caesarean-section at 36 to 37 weeks to ensure live infant.

**Diabetes Mellitus in Pregnancy:**

D.M. occurs in one pregnancy in 500. The patient must be under control of obstetrician and diabetic specialist.

**Causes:** D.M. may appear for first time during pregnancy but usually pregnancy occurs in already established diabetics (Hereditary factor). Deficiency of insulin hormone secreted from beta cells of pancreas is the cause of D.M.

**Signs and Symptoms:**

1- Polyuria and thirst (poly depsia).
   * Patient urinates more than the 2-3 times at night.
   * Patient drink water at night.
   * Patient complains of dry mouth in the morning.

2- Polyphagia (patient eat more).

3- General fatigability and tiredness.

4- Obstetric history (Large weight babies intra uterine death).

5- Increase of sugar level in blood more than 120-100 ml/F.B.S.

6- Glycosuria (presence of sugar in urine).

7- Pruritus vulva is suggestive of D.M.

**Complications:**

1- Abortion in early pregnancy.

2- Hydramnios in about 25% of cases. When severe the fetal prognosis is poor. Close observation in hospital is essential.
3- Pre-eclampsia may be a cause of intra uterine death. If severe pregnancy is usually terminated.

4- Large babies over 3.6 kg in about 40% of cases.

5- Small babies under 2.7 kg are also common due to placental dysfunction.

6- Intrauterine death of foetus in some cases after the 36th week.

7- Foetal abnormalities is high.

8- Vaginal moniliasis.

9- Ketosis and diabetic coma may occur or hypoglycemic coma.

10- Premature labour.

A- Nursing care and management During Pregnancy:

1- The woman admitted to hospital for reassessment of diabetic control about the 13th week.

2- Regular urine test for sugar, blood test for glucose level.

3- Observe for any sign of complications.

4- Patient should be seen and examined weekly after the 16th week.

5- Advice patient to decrease the sweats and carbohydrate in her diet and to take good protein diet.

6- Hospitalization of woman again not later than the 32nd week or earlier to detect sign of pre-eclampsia, hypertension or hydramnios.

7- Treatment with insulin.

8- Diabetic women are usually advised to have not more than 3 children.

B- Nursing care and management during labour:

Termination pregnancy at about 36-37 weeks by Caesarean-section in the old primigravida and by surgical induction multigravida who had previous vaginal deliveries.
Labour:

Induction of labour at 36\textsuperscript{th}-38\textsuperscript{th} week in the young primigravida and multigravida (with good obstetrical history).

Procedure:

1- No breakfast is given.
2- Membranes are punctured.
3- Oxytocin drip started.
4- A second drip in other arm to give dextrose and insulin depending on blood glucose level.
5- Hypoglycaemia must be avoided.
6- Avoid sedatives and analgesics which depress the fetal respiratory center.
7- Delay in labor over 12 hours is serious Caesarean-section is advice.

Caesarean-Section: This operation is performed at 36\textsuperscript{th} to 38\textsuperscript{th} week in old primegravida and multigravida with bad obstetrical history if the fetus is unduly large.
Toxemia of Pregnancy

Includes

Pre-eclampsia

Eclampsia

Pre-eclampsia occurs in 10% of pregnant women, appears usually after the 28th wk. The disease is of unknown etiology. Characterized by one or more of the following signs:

1- Hypertension.
2- Oedema.
3- Albuminuria or proteinuria.

Etiology (cases): unknown. There are the:

1- Toxins produced by the foetus.
2- Toxins produced by the placenta.
3- Toxins from the uterine wall.
4- Abnormal endocrine balance.
5- Dietary and vitamin deficiency.
6- Vascular spasm.
7- The disease more common in primigravida, multiple pregnancy (twin), polyhydraminos, essential hypertension, diabetes and hydatid from mole.

Signs and Symptoms:

The mild case change to severe in short time so hospitalization is necessary.
Mild to Moderate         Severe
B.P. 140/90           B.P. 160/110
Oedema of ankles       Oedema of hands face
Proteinuria under 0.5 g/l   Proteinuria over 1 g/l

1- Edema: The edema could be occult edema, so every primegravida should be weighted every two weeks. If wt. gain is excessive then admit her to hospital. Edema of ankles, pre-tibial oedema (pitting) more serious is the oedema of face, hands, sacrum, abdominal wall and vulva.

2- Hypertension: the B.P. must be taken in early pregnancy in order to know her usual B.P. The height of diastolic pressure is more serious than the systolic B.P. The increase 10 mm Hg is an indication for close observation. If B.P. 140/90 mm Hg or more with slight oedema then admission to hospital.

3- Proteinuria: it is a late and serious sign of pre-eclampsia. All the women with proteinuria however slight in a mid-stream specimen of urine should be hospitalized for investigation, supervision, complete rest and dietary measures. The amount of protein in urine is an index of the severity of the condition.

**Dangers of pre-eclampsia:**

1- Maternal (to mother)
   a- Eclampsia.
   b- Accidental antepartum hemorrhage.

2- Foetal.
   a- Intra-uterine death (due to placental dysfunction).
   b- Neonatal death.

Often due to prematurity.
**Nursing care and management:**

1- Rest in bed.

2- Administrations of Drugs:
   - Sedatives: in mild pre-eclampsia.
     Phenobarbiton 60 mg t.d.s
     Sodium Amytal 200 mg (to ensure good sleep at night).
     In severe cases: Sodium Amytal 200 mg, eight hourly for 36-48 hours.
     Avertin or paraldehyde is given of serious signs.
   - Antihypertensive drugs: to lower the B.P. Aldoment (methyl dopa)
     250 mg orally t.i.d dose, may be increase, drowsiness should be
     reported to doctor.

3- Diet:
   - Restriction of salt intake.
   - Low carbohydrate diet.
   - Limit fluid intake when edema is severe.
   - The bowels should move every day.

4- Observation:
   a- Urine: daily exam for protein. Urinary aestriol estimation to assess
      degree of placental dysfunction.
   b- Blood pressure: Recorded twice daily in mild case and four-hourly
      in severe case.
   c- Oedema.
   d- Weight: every second day.
   e- fluid balance: fluid intake and output is measured daily.
   f- Temperature, pulse and respiration are recorded b.i.d
g- abdominal pain: could be due to epigastric pain, concealed accidental haemorrhage, labour pain.

5- serious sings and symptoms
   - Sharp, rise in B.p.
   - Definite increase in protein uria.
   - Marked increase in edema.
   - severe headache.
   - visual disturbances.
     a- Dimness or blurring of vision.
     b- flashes of light.
   - Vomiting.
   - Diminished urinary output (less than 600 ml/24 hours).
   - Epigastric pain.

6- Nursing are of serious cases when there is serious sign the pt. should be nursed as an eclamptic:
   a- The pt. should be in quiet, single room, with sufficient light to observe her colour.
   b- The requirements to deal with an eclamptic fit should be at hand (oxygen, face mask, dentures are removed).
   c- Heavy sedation by rectal Avertin or paraldehyde.
   d- Each specimen of urine is examined for protein.
   e- B.P. recorded every two or four hours.
   f- Diet consists of milk and fresh orange juice.
   g- Fluid balance chart is kept.

7- Obstetric management:
A- Induction of labour causes

- If serious signs present not allowed to persist beyond 24 hours.
- When hypertension and proteinuria persist, labour induced at the 37th wk.
- Placental insufficiency

How to induce labour:

- Anti-hypertensive drug is given if B.P. is high.
- Puncture of membrane is done, and if labour is delayed on intravenous oxytocin drip is put.
- Caesarean section is preferred in elderly primegravid and if uterus not respond to previous step.

B- Care in labour:

- A nurse or midwife should remain with her because of danger of an ecliptic fit.
- Urine exam for protein.
- B.P. recorded hourly.
- Record the fetal heart.
- Well sedation of woman.
- An episotomy may be made and low forceps applied.
- Oxygen is ready to be given.

C- After labor:

All pt. are given a sedative after delivery because the first convulsion frequently occurs after the completion of labour. In severe case sodium amytal 200 mg given the pt. transferred to puerperal ward (single, quiet room with a nurse for the first 12 hours). Phenobarbitone 60
mg given four hourly or t.i.d. the B.P. is recorded every 4 hours for 24 hours then daily.

**Eclampsia**: a more advanced stage of serious pre-eclampsia, it is an acute condition characterized by convulsions and coma. It can occur:

1- Aute partum.
2- Intra partum.
3- Post partum (usually during first 12 hours).

**Signs and Symptoms:***
- Vomiting.
- Intense headache.
- Epigastric pain.
- Hypertension.
- Oedema.
- Proteinuria.

**Stage of an eclamptic fit:**

1- Premonitory stage (20-30 seconds). Pt. restless, her eyes roll sideways, twitching of facial muscles.

2- Tonic stage (20-30 seconds). Whole body is rigid, muscular spasm, teeth tightly clenched, respiration is checked and cyanosis occurs.

3- Elonic stage (1-2 minutes). Violent contraction of the muscles produce convulsive movement maybe so severe to throw the pt. out of bed, profuse salivation may be blood-stained if tongue is bitten, face is congested.

4- Coma stage (maybe few minutes or hours). Pt. is unconscious.
Nursing care of eclamptic fit:

Good Nursing is important factor in saving the pt. life:

1- Take the pt. into single, quiet room with sufficient light for observation of pt.

2- Protect the pt. from injury, not leave the pt. alone, remove the dentures of present. Place a rubber wedge between teeth.

3- Send for medical aid without leaving the pt.

4- Turn the woman on her right side.

5- Keep clear airways, use suction apparatus or mop out saliva.

6- Oxygen should be given so admission to hospital.

7- Sedation of pt. (sodium thiopertone) given I.V.

8- B.P, temp, pulse, respiration are taken and recorded.

9- Self-retaining catheter is inserted, and urine is examined for protein.

Nursing care after a fit:

- Oxygen is given for 5 minutes after each fit.

- Position: put the drowsy woman is right semi-prone position.

- Pt. is turned at intervals.

- Clean the mouth and nostrils.

- Put a self-retaining catheter to empty the bladder.

  Convulsive stage is under control. (wither 48 hours).

- Postpone the bed bathing at least 24 hours after admission.

- No fluid by mouth, any necessary fluid is given I.V.

- Observation of pt. for

  a. Signs of onset of fit.

  b. Signs of labour.
c. General condition of pt. for any serious signs.
   - Pulse, temp, respiration, B.P., foetal heart rate.
   - Slow respiration may be due to cerebral haemorrhage.
   - Rapid respiration may be due to pulmonary infections.

**The serious signs of eclampsia:**

1. Rapid fits.
2. Pulmonary oedema.
3. Pulse over 120 /min.
5. Temp. over 39ºC.
6. Jaundice.

**Obstetrical management:** The pt. may go in:

1. Spontaneous labour after fit.
2. If labour not occur within 12 hours after fit induction of labour (puncture of membrane and I.V. oxytocin drip).
3. Caesarean section may be advisable.

**Care after delivery:**

- Sedative is given (sodium amytal 200 mg) to prevent convulsions during the first 48 hours.
- Mental confusion and impairment of vision may exist for few days.
- Breast feeding is contraindicated.
- Period of convalescence should extend until B.P. and proteinuria are reduced.

**Complications of Eclampsia:**

1. Cerebral: haemorrhage, thrombosis.
2. Hepatic: liver damage.
3. Injuries: to tongue, fractures.
4. Cardiac reilure.
5. Renal: acute failure.
8. Maternal death due to above causes.
9. Perinatal mortality varies (10%-30%).

**Ante partum haemorrhage**

Bleeding from the placental site due to premature separation of the placenta after the 28th of pregnancy and prior to the birth of the baby.

**Types of antepartum haemorrhage:**

1. Unavoidable haemorrhage: (placenta praevia): bleeding due to premature separation of placenta which is situated partly or wholly in the lower uterine segment.

2. Accidental haemorrhage: bleeding due to the premature separation of a normally situated placenta.

**Management of undiagnosed antepartum haemorrhage:**

1. Hospitalization is important whether the bleeding is slight or severe.
2. Vaginal examination is dangerous because it may induce profuse haemorrhage.

**Rx of slight bleeding (nursing care):**

1. The pt. is put in a warmed bed.
2. No vaginal or rectal examination is made.
3. Observation:
   - General condition (pulse rate, pallor, B.P., oedema) and temp.
   - Blood loss.
   - Gentle abdominal examination (pain, tenderness, high head, malpresentation, foetal heart).

4. Sedatives (as chloralhydrate) is given.

5. Blood exam for ABO blood grouping and cross matching and haemoglubin, Rh factor.

6. Routine shaving and swabbing.

7. Midstream specimen of urine is examined for protein.

8. Perineal pads are kept for inspection.

9. Speculum exam is made after 2-3 days to rule out cervical cause of bleeding. Sonar and Doppler exam to exclude placenta previa.

10. Pt. is allowed up after 5 days if no bleeding.

11. Pt. is discharged if after another 2 days no bleeding, no pre-eclampsia, no essential hypertension, no placenta previa.

**Rx and nursing care of severe bleeding:**

The woman will be in dangerous state of collapse due to profuse haemorrhage:

1. The woman is admitted to special unit for resuscitation.

2. The same procedures for slight bleeding.

3. Maternal pulse and B.P.

4. Plasma fibrinogen and clot formation test C.B.P and plat late count.

5. Sedatives are given and analgesics for pain.

6. I.V. fluid is given (while blood compatibility is test).
7. Blood transfusion is given.
8. Foetal heart is auscultated every 10 or 20 min.
9. Oxygen is given to avoid foetal anoxia.
10. The woman is not permitted to go home.
11. Further Rx is done after diagnosis is made.

**Unavoidable haemorrhage (placenta previa):**

Bleeding due to premature separation of abnormally situated placenta after the 28th weeks of pregnancy. Occur 1 in 200 cases.

**Causes:** low implantation of the placenta, more common in multiparous woman.

**Types:**
Type 1: the edge of placenta dips into the lower segment.
Type 2: the edge of placenta is at margin of internal os.
Type 3: The placenta lies completely over the os.
Type 4: The center of placenta lies over the center of os.

**Signs and symptoms:**

Painless vaginal bleeding (during rest or sleep). Initial loss usually slight, becoming more profuse.

- Abdominal findings: uterus not tenoler, no pain. Unstable lie, malpresentation, head is high.

**Dangers of placenta praevia:**

1- Haemorrhage → ante partum (usually after vaginal exam)
   → post partum (the lower segment of uterus not contract)
2- Stillbirth due to foetal anoxia, prematurity.
Management and nursing care:

1. Resuscitation measure (as for severe ante partum haemorrhage).
2. At the 38th wk. the woman is taken to the operating theatre.
3. Vaginal examination is done under anaesthesia.
4. Puncture of membrane is done for type 1 and 2. Woman will deliver spontaneuously.
5. Caesarean section is done if:
   a- Profuse haemorrhage occur.
   b- Type 3 or 4.
   c- If type 2 and placenta is situated posteriorly.

(Accidental haemorrhage) (Placentae abruptio)

Bleeding due to premature separation of a normally situated placenta.

Causes:

1. Hypertension.
2. Pre-eclampsia.
3. Strong physical effort.
5. Trauma: fall or blow on abdomen.

Types:

1. External: revealed accidental haemorrhage in which blood escapes from vagina.
2. Combined: both revealed and concealed.
3. Concealed: No vaginal bleeding very serious much less common.

**External accidental haemorrhage:**

**Signs and symptoms:**

- Vaginal bleeding.
- Abdominal pain and tenderness.
- Pre-eclampsia or hypertension
- Normal presentation.

**Rx and nursing care:**

1. As for ante partum haemorrhage.
2. Blood transfusion.
3. Fluid balance.
4. Membrane are punctured.
5. Oxytocine drip is given of not spontaneous labour.
6. C.S. when haemorrhage persists and foetus alive.

**Combined accidental haemorrhage:**

- Pt. in a degree of shock.
- The uterus is tender and rigid.
- signs of pr-eclampsia or essential hypertension. Maybe present in 7%-10%.

**Rx: same of concealed haemorrhage.**

**Concealed accidental haemorrhage:**

    Serious condition with high mortality and foetal mortality rate. It is less common.

**Signs and symptoms:**

1. No vaginal bleeding.
2. Shock.

3. Abdominal pain.

4. Uterus is tender to touch and board like.

5. Pulse slow at first then becomes rapid and thread.

6. Very little urine.

7. Foetus cannot be palpated.

8. Foetal heart can't be heard.

9. Signs of pre-eclampsia or essential hypertension.

**Management and nursing:**

1. Give peithidine 100 mg.

2. Keep 5-minute pulse chart.

3. Measure the urine passed.

4. In treating shock do not apply heat, not elevate the foot of bed.

5. Pt. is transferred to hospital.


7. Oxygen is administered.

8. Urine is examined for protein.

9. Pulse, B.P., recorded every 30 minutes.

10. Caesarean section should be performed.
Abortion

The commonest cause of bleeding in early pregnancy is abortion. **Abortion:** the interruption of pregnancy before the 28th weeks of gestation. It occurs in about 15% of cases. More frequent in multiparous women.

### Classification of Abortion

```
       Classification of Abortion
         |          |
         |          |
Spontaneous          Induced

         |          |
         |          |
Threatened          Therapeutic

         |          |
         |          |
Missed     Criminal

         |          |
         |          |
Inevitable

         |          |
         |          |
Incomplete         Complete

         |          |
         |          |
Habitual
```

### Causes:

1. In 60% of cases no cause is found.

2. Foetal Causes:

   a- Maldevelopment of the fertilized ovum.
b- Anoxia of the embryo.

3. Maternal Causes:
   a- General conditions:
      1- Endocrine imbalance.
      2- Infection (e.g. Rubella) syphilis.
      3- Diseases (e.g. chronic nephritis).
      4- Effects of drugs (phosphorus, quinine, ergut, strong purgatives).
      5- Extreme emotion (as fright).
      6- Defective diet.
   b- Local conditions:
      1- Implantation of the ovum in lower uterine segment.
      2- Trauma (criminal interference, accidents, violent exercise).
      3- Cervical incompetence.
      4- Uterine malformation (e.g. fibroid).
      5- Retroversion of uterus.

**Threatened Abortion:**

**Signs and Symptoms:**

1. Bleeding is not severe.
2. OS is closed.
3. Membranes intact.
4. May be back ache and intermittent pain in low abdomen.
Outcome of threatened abortion (Th.ab):
1. Pregnancy goes to term.
2. Inevitable abortion.
3. Missed abortion occurs when foetus dies and retained in uterus.

Treatment and Nursing care:
1. Patient is put to bed and kept quiet.
2. Physical and mental rest.
3. Diet rich in protein and iron and vitamins.
4. Pulse and temperature recorded twice daily or 4 hourly if patient is febrile.
5. Pregnancy test.
6. Speculum examination is made to exclude cervical cause.
7. Sedatives are given (phenobarbitone for slight pain, pethidine (100 mg) for severe pain).
8. Avoid any purgative or enema for constipation.
9. Observe the vaginal discharge and bleeding.
10. Advice patient on discharge: to take extra rest, heavy lifting, heavy exercise and excitement. Coitus is contraindicated.


Signs and Symptoms:
1. Free bleeding:
2. Intermittent uterine contractions with pain.
3. If membranes rupture the ovum protrude through the OS.

Management and Nursing care:
1. Treated as Th. Abortion until the doctor arrive.
2. Morphine for pain and relaxation of cervix.

3. If contractions are weak especially after 16 week oxytocine drip is given.

4. Evacuation of uterus with forceps under anesthesia.

**A: Complete Abortion:**

A condition where foetal sac is expelled intact. This is usually occurs before the 8th week.

**Signs and Symptoms:**

1. Bleeding is reduced.
2. Pain ceases.
3. The OS close.
4. Involution of uterus occurs.
5. After the 20 week milk may come to the breast.

**B: Incomplete Abortion:**

Foetus is expelled but the whole or part of placenta and membranes retained in uterus.

**Signs and Symptoms:**

1. Patient usually more than 12th week pregnancy.
2. Bleeding may be profuse.
3. Pain may or may be not be present.
4. OS is partly closed.
5. Involution not occurs.

**Management and Nursing care:**

1. Admit the patient to hospital.
2. If bleeding is not severe give ergot 0.5 mg I.M., blood typing, hemoglobin estimation high vaginal swab is taken, uterus is evacuated vaginally.

3. When bleeding is so severe (patient collapse) put the patient in a warmed bed, the foot of which elevated, I.V. fluid is given, arrange for blood transfusion.

   Ergot 0.5 mg is given I.V.

   Pulse is taken every 5 minutes. When patient condition is better than uterus is evacuated.

**Habitual Abortion (Recurrent):** when a woman has had three consecutive abortion.

**Causes:**
1. The cause is obscure.
2. We should exclude disease like, diabetes mellitus, nephritis, hypothyroidism, uterine abnormalities, displacement or fibroids cervical incompetence.

**Management and Nursing care:**
1. The woman must reports the clinic at the beginning of pregnancy.
2. Adequate rest.
3. Well balanced diet (proteins, minerals, vitamins).
4. Psychological support.
5. Same advice for threatened abortion.

**Cervical Incompetence:** Abortions occurring at about mid-term may by due to incompetence of cervix.

**Diagnosis:** By Sonar.
Management:

A purse-string suture of non-absorbable material is inserted after the 12th week. This cervical suture must be removed at the 38th week to prevent cervical damage at labour. In case of bad obstetric history the suture is left in site and Caesarean section is performed.

(2): Missed Abortion: When fetus dies and retained is utero.

Signs and Symptoms:

1. Signs of threatened abortion arise and then subside.
2. The uterus not increase in size.
3. Breast become soft and other signs of pregnancy disappear.
4. Brownish vaginal discharge.
5. No abdominal pain.
6. Hypofibrinogenamia may develop in cases of missed abortion which persist for over 6-8 weeks, the refore plasma fibrinogen level estimations are done weekly.

Management: an intravenous oxytocin drip is given and repeated in 24 hours if necessary.
Induced Abortion

It is of 2 types

A- Therapeutic Abortion:

Evacuation of the uterus, carried out by a qualified medical practitioner, as treatment to save mother's life or health.

Indication (Causes):
1. Cardiac diseases.
2. Chronic nephritis.
3. Psychiatric disorders.
4. Serious epilepsy.
5. Rubella (German measles) during first 3 months of pregnancy.

Management and Nursing care:
1. Therapeutic abortion should always be done in hospital.
2. Husband and wife must give written consent.
3. Before the 12th week it is usual to evacuate the uterus vaginally.

B- Criminal Abortion:

Abortion when there are no obstetrical or medical indications. The nurse must never give advice for this type of abortion, also not assist any person to do it.

Dangers (complications):
1. Injuries such as perforation of uterus.
2. Sudden death.
3. Sepsis.
Septic Abortion:

Sepsis usually associate with incomplete abortion especially if it has been induced criminally. The condition is similar to puerperal sepsis and it is a notifiable disease.

Dangers (Complications)

1. Infertility.
2. Ill health.
3. Death.

Signs and Symptoms:

1. Tender uterus.
2. Offensive and profuse vaginal discharge.
3. Rapid pulse.
4. High temperature.
5. Abdominal pain may or may not be present.

Treatment and Nursing care:

1. Isolation: the patient is admitted to hospital in an isolated single room.
2. Clinical bacteriological and haematological investigation.
3. Vaginal interference is avoided (unless severe bleeding) until the infection is controlled.
4. Fluid and electrolyte balance chart.
5. The patient should be observed for jaundice and oliguria.
6. Proper AB should started.
Extrauterine Pregnancy (ectopic pregnancy)

It is the pregnancy that occur in some site other than normal uterine decidua.

**Definition:** Zygote implants at some site other than endometrium. About 95% of ectopic pregnancy occur in:

A- Fallopin tube especially near the ampullary end. Implantation in the isthmus part may be seen. But interstitial implantation rarely seen other. 5% can occur in the other as:

B- In ovary giving primary ovarian pregnancy.

C- Or inperitoneal cavity like in broad ligament.

D- Or omentum giving abdominal pregnancy. The incidence of ectopic pregnancy is related to the prevalence of salpingitis.

**Clinical Picutre:**

1. Missed menstrual period but sometimes occur before the missed period.

2. Abdominal pain which arise on the site of ectopic and sometimes it is acute or severe.

3. Irregular vaginal bleeding.

4. Profused intraperitoneal haemorrhage which cause severe pain and may lead to shock and collapse.

**The Possible outcome of ectopic pregnancy.**

1. Tubal mole.

2. Tubal abortion.

3. Tubal rupture (to peritoneal cavity or to broad ligament).

4. Abdominal pregnancy.

**Signs and Symptoms:**

1. Amenorrhea common one or two missed periods.
2. Lower abdominal pain accompanied by a faint.
3. Vaginal bleeding. Scanty brown discharge continues without clots.
4. Vague mass palpable usually.
5. Occasionally sudden hemorrhage.
6. Severe lower abdominal pain. Shock later pain and tenderness spread to epigastrium with referred shoulder tip pain due to diaphragmatic irritation.

**Investigations:**

2. Ultrasound: either abdominal or vaginal u/s in early pregnancy (6-7) week.

   The most important diagnostic tests of ectopic pregnancy are:
   1- Laparoscopy.
   2- Fetal heart pulsating outside the endometrial cavity.

**Treatment:**

- Laparotomy blood transfusion.
- Examination under anaesthesia precede laparotomy in doubtful cases.
- Salpingectomy performed of ectopic.

**Hydatidiform Mole:**

This produced by a degeneration of the chorion which occur about the second month of pregnancy and causes death of the fetus. The chorion is converted into a mass of small cysts, often growing at a rapid rate, cases are seen in all ages, but considerable number are women over forty.

The pt. has usually missed one or two periods, and often experiences severe morning sickness, with headache, odema of the ankle
and sometimes albuminuria. Intermittent blood stained discharge occur, and bleeding may become continuous when she is exam the uterus is enlarged pregnancy tests are strongly positive. No fetal heart rate.

The complication of hydatidiform mole:

1. Haemorrhage when the mole is expelled or removed.
2. Sepsis.
3. Malignancy.

Treatment:

1. 70% infusion of oxytocin.
2. Aid expulsion by digital evacuation also under anaesthetic the mole is evacuated after dilitation of the cervix.
3. Abdominal hysterectomy is done if pt. over 40 years.
4. Course of penicillin is given.
5. The pt. leave hospital until bleeding has ceased.
6. Follow up is imperative of the risk of appearance of an malignant condition chorion epithelioma or chorio carcinoma.
Normal Labour

Definition: labour is described as the process by which the fetus, placenta and membranes are expelled through the birth canal.

Normal Labour: characterized by:

1. The foetus is born at term (40 weeks) presented by vertex.
2. The process is completed spontaneously.
3. The time does not exceed 24 hours.
4. No complication arise (no injury to mother or child).

Factor affecting labour:

1. The powers.
   A. The primary powers are the contractions and retraction of the uterine muscles.
   B. The secondary power are the contractions of abdominal muscles and diaphragm.

2. The passages (the pelvis, uterus, vagina).

3. The passenger (foetus).

Duration of labour: There are wide variations

1. In premigravida 14-24 hours.
2. In multigravida 8-12 hours.

<table>
<thead>
<tr>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 12 hours</td>
<td>2</td>
<td>1/2</td>
</tr>
<tr>
<td>2. 8 hours</td>
<td>1/2→1</td>
<td>1/2</td>
</tr>
</tbody>
</table>
Factor affecting the duration of labour:

1. Age of woman: in old primigravida duration is more.
2. Multiparity: 2nd and 3rd is shorter than the 1st.
3. Type of pelvis.
4. Strength and frequency of uterine contraction.
5. Size and Presentation of foetus.

Causes of Labour:

1. Oxytocin from posterior pituitary gland and placenta.
2. Increased contractability of uterine muscles.
3. The pressure of the presenting part on the nerve ending in the cervix.
4. Overdistension of the uterus, twins, hydraminos tend.

The premonitory signs of labour:

During the 3 weeks previous to the onset of labour certain changes take place which determine the approach of labour. These signs are:

1. Lightening: Sinking of uterus about 2-3 weeks before term so the breathing is easier, heart and stomach function better, walking becomes more difficult.
2. Frequency of micturition: Due to pressure of foetal head on bladder.
3. False pains: Irregular pains causing the uterus to contract and relax while in true labour uterus contract and retract. These pains are often mistaken especially by the nervous patient's for established labour, but they are distinguishable by they are irregular, felt in abdomen, no backache not accompanied by discharge of blood and mucous. They not increase in force and frequency and the cervix does not dilate.
3. Taking up of the cervix: cervix is shorter because it is being drawn up.
Signs of true labour:

1. Painful Rhythmatic uterine contraction: Patient feel as lightening, actual pain. Each contraction begins painlessly the pain increasing gradually in intensity until its acme then diminishing and ending painlessly.

2. Dilation of the OS: The enlargement of external OS from a circular opening (small) to big one permit the passage of foetal head.

3. Show: show is blood stained mucoid discharge seen a few hours before labour has started.

4. Formation of bag of water.

<table>
<thead>
<tr>
<th>True Labour</th>
<th>False Labour</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. uterine contraction.</td>
<td>1. uterine contraction.</td>
</tr>
<tr>
<td>- accompanied by pain.</td>
<td>- not always painful.</td>
</tr>
<tr>
<td>- accompanied by backache pain</td>
<td>- not backache pain.</td>
</tr>
<tr>
<td>- rhythmic regularity.</td>
<td>- irregular.</td>
</tr>
<tr>
<td>- rarely exceed 60 seconds.</td>
<td>- may last 3-4 minutes</td>
</tr>
<tr>
<td>2. cervix is shortened</td>
<td>2. cervix not shortened</td>
</tr>
<tr>
<td>- OS is dilating</td>
<td>- OS is not dilating.</td>
</tr>
<tr>
<td>- membranes feel tense.</td>
<td>- not tense.</td>
</tr>
<tr>
<td>- show is usually present.</td>
<td>- no show.</td>
</tr>
</tbody>
</table>

Preparation and Nursing advice to the pregnant women for normal labour:

1. Advice her for hospital delivery especially the primegravida and the abnormal pregnancy.
2. Reassure the woman, avoid of fear, encouraging her.

3. Advice for regular antenatal care to detect any abnormality.

4. Good general health by good diet and exercise, especially walking in the last month.

5. Advice about cleanliness of her body, clothes and prepare the baby's clothes and instruments.

6. Teach her how to take deep breaths during the uterine contraction.

7. Advice the woman for rest and good sleep.

**Stages of labour:**

1. First stage (dilatation of OS): last from onset of labour to complete dilation of the OS, it is the longest stage.
   - In primegravida 12-16 hours.
   - In multigravida 6-8 hours.

2. Second stage (expulsion of foetus): begins when OS is fully dilated and ends when baby is born (shorter).
   - In primegravida 2 hours.
   - In multigravida ½-1 hours.

3. Third stage (separation and expulsion of placenta and membranes). It is last from birth of baby to the complete expulsion of placenta and membranes.

**Nursing care during first stage:**

1. Patient admission to hospital should welcomed in a friendly manner take the address of nearest relative.
   - Take history of present labour. Ask about uterine contraction, show, if any rupture of membranes.
- Take history of previous labour, instrumental delivery, Caesarean section, still birth, weight of babies.

- Be sure it is true labour.

2. General examination: Stature, appearance, pulse, temperature, BP, oedema, urine analysis (for proteins).

- Abdominal examination: period of gestation, lie, presentation, foetal heart.

- Vaginal examination: degree of dilation of OS, membranes condition. Vaginal examination not done if there is ante partum haemorrhage.

3. Preparation of woman:

- Take care of perineal cleaning, shaving of pubic hair, wash the area with antiseptic.

- Evacuation of lower bowel (enema). Enema not done if patient has eclampsia or ante partum haemorrhage.

**Benefits of Enema:**

a- It stimulate uterine contraction.

b- helps the heads to descend done.

c- ensure a clean field during labor.

- Bladder care: help her to empty the bladder every 3-4 hours, if she can't use the catheter.

- Diet: small light meals in early labour. Better to give fluid diet. Dehydration should be avoided, if vomiting give I.V. fluid.

- Rest and sleep.

- Posture: upright position at early labour. Recumbent position when contraction increase in intensity.
Advice her to take deep breathing during contraction and not to push during this stage because the OS is not fully dilated.

4. Observation:

- Observe the uterine contraction, frequency, length and strength.
- Dilation of OS.
- Descent of presenting part. In primegravida head engaged before labour. In multigravida head may not descend until labour begins.

- Vaginal discharge:

  **Show:** it is the blood stained mucous seen in early labour.

Liquor amnii may be strickling from vagina. Presence of meconium in the liquor suggest foetal distress (except in breech presentation).

- Early rupture of membrane. If for 24 hours the liquor may become infected offensive odor, danger of foetal condition (pneumonia):
  * Normal feotal heart rate 120-140 beats/min.
  * Record foetal heart every 30 minutes at early labour then every 5 minutes.
  * Foetal heart should never be taken during contraction.

**Signs of Foetal distress:**

1. Foetal heart is slow or rapid.
2. Foetal heart beats irregular and weak.
4. Excessive foetal movement.

* **Observe maternal condition:** pulse, temp, B.P. 4 hourly also urine examination for proteins and acetones.

**Signs of Maternal distress:**

1. Rising pulse rate.
2. Rising in temperature.
3. Anxious expression.
4. The woman feels ill.
5. Restlessness.
6. Dark vomitus.

- **Observe for any complications:**
  1. Eclampsia or antepartum haemorrhage.
  2. Faults on the power (weak hypotonic uterine contraction).
  3. Faults in passenger (big baby, mal presentation).
  4. Faults in passages (contracted pelvis).

**Management and Nursing care of second stage of labour:**

The signs of this stage is:

1. No cervix felt on vaginal examination.
2. Strong and frequent contraction.

**Duration:** primegravida 1 ½-2 hours.

  Multigravida ½-1 hours.

**Observation:**

1. The foetal condition: Foetal heart listen to after every contraction.
2. The maternal condition: pulse taken every 10 minutes.

Uterine contraction (strength, frequency), tonic contraction (without relaxation) and Bandle's ring is a bad sign (may result in rupture uterus).
**Preparation for delivery:**

1. Bladder: encourage the woman to empty the bladder, if she can't catheterization is indicated.
2. Clean the pubic region, thigh wash with soap and water and use a sterile perineal pad.
3. Prepare the baby's cot, clothes and cotton blanket, all must be warm.
4. Diet: nothing more than amene slip should be taken.
5. A soft towel to dry the woman face because she is warm and thirsty.
   - Dorsal position of patient (lithotomy position). The woman lies on her back with knees flexed and widely separated. The nurse stand on the right side of the bed facing the pt's feet.

**General Care and Assistance:**

1. Puncture of membranes: The membranes should have ruptured by the end of the first stage, if not try to puncture then when tense during a contraction by using a pair of artery forceps. The baby's head then will be born within few minutes.
2. When to bear down (push): ask the woman to push when the presenting part appears at the vulva.

**Method:**

The women takes a deep breath while the uterus is contracting, closes her lips and bears down. She must not cry out. Encouragement should be given.

- When to scrub up: The nurse should sterile her hands, wear gloves and use her hand in redness for delivery of the head. She places the palm of her left hand on the advancing head. A pad in the palm of her right hand is placed over the anus.
- Attention to the cord around the neck may cause anoxia to baby.
- **Prevention perineal lacerations:**

  The cause of perineal lacerations:
  
  a- A large baby, face presentation, breech presentation.
  
  b- Rigid perineum, andnoid pelvis.

  To prevent lacerations by:
  
  2. Having control on the advancing head.
  3. Keeping the hand on perineum.
  4. Delivery the head the end of or between contraction.
  5. Avoiding too wide separation of the legs.
  6. Taking care in delivery shoulder and body.
  7. Episiotomy.

**Immediate care of the baby**

1. Cleaning of the air passages. If baby cries immediately then no need to clean the passages. Hold the baby upside down for few seconds to allow any fluid in the trachea to drain out. Sometimes suction is needed.

2. Identification. Avoid the danger of mixing babies in hospital. Use wrist name tape.
   
   - Record the exact moment of birth on birth certificate.
   - Examine the colour of baby: pallor or cyanosis.
   - Warmth: baby should be received into a warm sterile towel.

3- Attention to nose and mouth: wipe and mucus from mouth and nostrils with a gauze swab.
- Attention to the eyes: Each eyelid should be wiped with separate swabs of dry sterile cotton, wool to remove secretion containing organisms from the birth canal.

4- Attention to the umbilical cord: By tying the cord excessive exposure of infant is avoided.

- Tying and cutting of the cord: use plastic clamps (ligatures) applied to the umbilical cord. The first ligatures is placed about one inch from the umbilicus. Another ligature is applied 2 inches on the outer side of the first one. Apply a mayo forceps to the cord on the outer side of the first ligature and leave it for 20 minutes. Use a blunt pointed, sterile scissors to cut the cord.

**Management of third stage of labour:**

1. An aseptic technique must be used, wearing masks, clean hands, aseptic lotions changed, sterile towels (over thighs).

2. Dorsal position (lithotomy position).

3. Observation:
   a- For perineal laceration.
   b- General condition (pulse, colour, B.P.).
   c- Uterus size.
   d- Signs of placental separation.
   e- Amount of blood loss, normal amount (120-240 ml).

4. Delivery of placenta: woman lies with her knees drawn up and well separated, when uterus contract tell her to hold her breath and bear down (as in baby’s birth).

5. Ergot (I.M): when baby is born will shorten the third stage.
The fourth stage of labour:
The First hour after explusion of the placenta:

1- Ergot I.M. Be sure uterus is firm (contracted).

2- Any blood clot should be expelled by squeezing the uterus downwards and backward.

3- Examination of placenta. Be sure no part has been retained because of danger of post partum haemorrhage.

4- Mother pulse should be 70/min.

Mother temp. should be not more 37.2ºC.

Mother B.P. the systolic B.P. 110-120 mm Hg.

5- Light meal.

6- Encourage the woman to pass urine.

7- Rest and sleep.
Mechanism of Labour

It is a series of passive movements of the foetus in its passage through the birth canal

Mechanism of vertex presentation.

* The lie: the relation of the long axis of the foetus to the long axis of the uterus. It is a longitudinal.

* The attitude: the relation of the foetal limbs and head to it's trunk it is of flexion.

* The presentation: the foetal part lying at the pelvic brim, it is vertex.

* The position: the relation of the foetus (denominator) to the areas of pelvic brim. It is left occipital anterior (L.O.A). The denominator is the occiput.

Mechanism of first stage of labour:

1. Descent.

   In primegravida: 2weeks before onset of labour. When engagement of head occurs. Further descent occurs during the 1st stage of labour.

   In multigravida: descent occur with the onset of labour.

2. Show.

3. Uterine contractions.

4. Rupture of membrane. At end of 1st stage or beginning of 2nd stage.

Mechanism of 2nd stage of labour:

1. Flexion.

2. International rotation.

3. Extension.

4. External rotation.

5. Internal rotation of shoulders.

Mechanism of 3\textsuperscript{rd} stage of labour: The 3\textsuperscript{rd} stage of labour consist of two steps:

1. Placental separation.
2. Placental expulsion.

3\textsuperscript{rd} stage of labour

It is the separation and expulsion of placenta. It lasts from the birth of baby until the placenta is expelled. Usually it is 10 minutes.

**Mechanism of Placental separation**

It occurs by contractions and retractions of uterine muscles. It is associated by bleeding.

**Signs of placental separation**

1. Uterus is hard and like a ball.
2. Elevation of the uterus in abdomen.
3. Elongation of the umbilical cord 3 inches.
4. Bleeding.

**Mechanism of placental expulsion**

Occurs by effect:

1. Pushing of mother down.
2. The internal pressure of uterus. Placental expression.

**Methods of placental expulsion**

1. Schultz's mechanism (more common). Placenta slips down into vagina.

   The foetal surface appears first like an inverted umbrella.

2. Duncan's mechanism. Lateral separation. The maternal surface seen first.
Presentations

Types of Presentations:

Presentation: it refers to the part of the foetus which lies at the pelvic brim.

There are five presentations:

1. Vertex presentation, 96% (more common).
2. Breech presentation.
3. Shoulder presentation.
4. Face presentation.
5. Brow presentation.

- Vertex, face and brow are all head or cephalic presentation.

1- Vertex Presentation:

- Presentation part is the vertex.
- The denominator is the occiput.
- Flexion of the head.

Type of Vertex Presentation:

1. Left occipito anterior L.O.A.
2. Right occipito anterior R.O.A.
3. Left occipito posterior L.O.P.
4. Right occipito posterior R.O.P.

Signs of vertex presentation:

1. Lie longitudinal.
2. Head felt on pubic symphysis.
3. Engagement of the head.
4. Vaginal examination: can feel the sutures and fontanels.
5. Foetal heart between umbilicus and pubic symphysis.

**Occipito posterior presentation:** it is a abnormal presentation which may lead to difficult labour.

**2- Breech Presentation:**

**Types of Breech presentation:**

1. Complete breech.
2. Incomplete breech.
3. Footing breech.

**Complete breech:** the lower limbs are flexed on each other.

**Incomplete breech:** the legs are extended on the thighs and the foot infront of face.

**Footing breech:** one or two feet appear first at the vulva.

**Causes of Breech presentation:**

1. Multigravida. (laxation of uterine and abdominal muscles).
2. Abnomality of uterus.
3. Prematurity.
4. Multiple pregnancy (twin)
5. Abnormality of foetus.
7. Tumor of genital canal.
8. Hydrocephallus.

**Signs and Symptoms**

1. Foetal heart above umbilicus.
2. Vaginal exam: (feel the breech) (irregular and soft).
**In Labour:** the liquor after rupture of membrane is stained with meconium.

**Diagnosis of breech presentation**

At late weeks of pregnancy:

1. The head felt at fundus.
2. Foetal heart above umbilicus.
3. Vaginal exam: feel the breech (irregular and soft).

**Rx:** Between 32-36 week the doctor can do the external version

**Contraindication of extra version:**

1. Ante partum haemorrhage.
2. Previous C.S. (Caesarean section).
3. Hydrocephaly.

**Danger of Breech Presentation:**

To mother (maternal):

1. Prolonged labour.
2. Perineal trauma.

To baby:

1. High mortality rate.
2. Intracranial haemorrhage.
3. Prematurity.
4. Anoxia due to premature placental separation or traction on the cord during labour or prolapse of the cord.
5. Injuries, e.g. Fractures of humerus.
Nursing care and management:

Advice the woman to bear down when part of breech appear out of vagina. Pushing down must be during the uterine contraction. So the breech then foot, shoulder, and head delivered gradually.

Indication of Caesarean section:

1. Contracted pelvis.
2. Placenta previa.
3. Old primigravida.
4. Bad obstetric history.

3- Shoulder Presentation: Also called transverse lie.

Causes:

1. Multiparity.
2. Hydraminos.
4. Contracted pelvis.
5. Placenta previa.
6. Fibroid tumours.
7. 2nd twin.
8. Prematurity.

Danger: rupture uterus

Diagnosis:

1. The uterus is wide.
2. No foetal head on breech at lower abdomen.
3. Head feel at the mother's loin.
4. Vaginal exam: feel the shoulder or arm instead of head or breech.

**Neglected shoulder presentation:**

Will lead to:

1. Obstructed labour.
2. Rupture uterus.
3. Haemorrhage and shock.
4. Infections.
5. Foetal death (stillbirth) due to anoxia.

**Management and Nursing care:**

The only way to normal delivery is version from shoulder to breech presentation. The nurse should keep the membrane intact. Ask the mother not to bear down to prevent cord prolapsed.

**Caesarean Section:** the only treatment of shoulder presentation.

**4- Face Presentation:** the head is extended instead of flexion. Presenting part is face or mentum.

**Causes:**

- Maternal causes
  1. Anterior uterine obliquity
  2. Wide pelvis.
  3. Hydrominos.
  4. Multiparity.
- **Foetal causes**
  1. Anencephaly.
  2. Spasm of muscles of neck.
  3. Tumors of neck.
4. Prematurity.

5. Twisting of umbilical cord around foetal neck.

6. Short umbilical cord.

**Diagnosis of face presentation**

1. Abdominal exam: feel the back of foetus on pubic symphysis.
   
   Foetal heart: heard louder from chest instead of the back.

2. Vaginal exam: you feel the mentum, mouth and eyes.

**Management:**

   In left and right mento anterior presentation spontaneous delivery is more safe. In left and right mento posterior position the labour is difficult and may need forceps delivery or Caesarean section.

**Dangers of face presentation:**

1. Delay in labour.
2. Cord may prolapse.
3. Foetal trauma. (oedema of face, head).
4. Cyanosis of face.
5. Laryngeal oedema.

**5- Brow presentation:**

   Head is mid way between flexion and extension. Labour is difficulty.

**Causes:** prematurity (main cause)

**Management:** Change the brow presentation into face or vertex or breech presentation.

- Forceps delivery.
- Caesarean section.
Complications of labour

Complication of first stage:

1. Early rupture of amniotic sac: Normal rupture occurs at the end of 1st stage or at beginning of 2nd stage. If rupture occurs early in the 1st stage then complication may occur as infection and cord prolapse.

2. Cord prolapse: occurs after the early rupture of amniotic sac and before the entering of presenting part the pelvis of mother.
   * Cord prolapse occurs in 1st stage of labour as 1/400.
   * Danger: is foetal anoxia, foetal death (stillbirth).

Causes:

1. Malpresentation.
2. Multiparity.

Management and nursing care of cord prolapse:

1. Take foetal heart every 5 minutes.
2. Place the woman: Trendeleburg position (elevation of pelvis).
3. Clean the cord by clean gauze in warm normal saline.
4. Don't press or insert the cord into vagina to avoid danger of twisting the cord and foetal death.
5. Caesarean section (C.S).

Complication of 2nd stage of labour

1. Rupture of uterus: Rare but dangerous. It leads to foetal death. It is either partial or complete. 1/3 of women die.

Causes:

1. Excessive contractions of uterine muscles.
2. Rupture of previous C.S scars.
3. Prolonged labour.
4. Obstructed labour.
5. Mal presentation.
7. Version of the foetus.
8. Misuse of Forceps.

**Signs and symptoms of uterine rupture**

1. Abdominal pain.
2. Uterine contraction.
3. Internal bleeding (in the abdominal cavity), also bleeding from vagina.
4. Signs of shock. Rapid weak pulse, cold skin pallor dyspnea or air hunger.

**Management and Nursing care of uterine rupture:**

1. Prepare the patient immediately for C.S. to take the baby out and repair the rupture.
2. I.V. fluids.
4. Antibiotic to prevent infection.
5. Porphelaxis and preventions of rupture uterus by good antenatal care.

**Other complication of 2nd stage:**

2. Laceration of cervix and vagina and perineum.

**Causes:**

1. Large baby.
2. Narrowing of birth canal.
3. Use of forceps.
4. Difficult labour.

**Signs and Symptoms:**

1. Continuous bleeding after delivery of baby.
2. Uterus contracted.
3. Pain in region of laceration.

**Danger:**

1. Postpartum haemorrhage P.P.H.
2. Weak bladder and anal region.
3. If neglected leads to uterine prolapse.

**Management and Nursing care:**

1. Immediate call for doctor.
2. Prepare instruments for suturing the wounds.
3. Pressure on the site of bleeding by sterile gauze.
Nursing care of the newborn baby

After delivery of the baby he must be gently dried and wrapped in a warm towel. Time of birth is noted. The upper airway is cleared by removing the fluid and mucous substances from his nose and mouth. Raise the baby from his ankle joint (feet) his head down so any fluid comes out of his respiratory system. If fluid excessive in amount use suction. Not hit the baby on his back if the crying is delayed because this may lead to shock and death. Crying will remove the fluids and mucous from his mouth.

Apgar Score:

<table>
<thead>
<tr>
<th>Signs</th>
<th>0</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Heart rate</td>
<td>Zero</td>
<td>Less than 100/min</td>
<td>More than 100/min</td>
</tr>
<tr>
<td>2. Respiration</td>
<td>Absent</td>
<td>Weak, irregular</td>
<td>Regular</td>
</tr>
<tr>
<td>3. Muscular tone</td>
<td>Flacid</td>
<td>Some flexion</td>
<td>Normal with movement</td>
</tr>
<tr>
<td>4. Response to</td>
<td>None</td>
<td>Weak crying</td>
<td>Loud crying</td>
</tr>
<tr>
<td>stimulation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Colour of body</td>
<td>Pale or blue</td>
<td>Body pink, extremities blue</td>
<td>All body pink</td>
</tr>
</tbody>
</table>

Apgar Score:

1. Heart rate:

   important vital sign. Heard by stethoscope from cardiac area. Normal heart rate of newborn infant in his first minutes of life between 150-180/min. after these it decrease gradually to 130-140/min. if heart rate less than 100/min the resuscitation of baby to prevent asphyxia.
2. Respiratory effort:

Normal crying is strong and clear. After 1 min respiration becomes regular. If respiration is irregular or weak then give O₂ to baby.

3. Muscle tone:

Normal baby has good muscle tone seen by flexion of his limbs. Flaccidity means baby is in bad situation.

4. Reflex irritability:

Normal response to hit or the foot or suction tube is by strong crying. Weak crying means lesion in his nervous system.

5. Colour of body:

Cyanosis appear on all babies after delivery but after crying of baby the colour returns to normal pink colour after 3 minues.

* If baby gets 7-10 marks it means he is in good health. No need special care only routine nursing care and observation of the respiration.

* If baby gets 4-6 marks means weakness of his central nervous system (CNS) and need special nursing care and suction of fluids from upper respiratory tract and giving O₂ by special mask.

* If baby gets 0-3 marks means he is in bad condition. Need resuscitation to save his life.

**Care of umbilical cord:**

Very important tp prevent bleeding and entrance of bacteria. Tight the umbilical cord by surgical sutures or ligatures, and cut the remaining part. Observe the baby in first day for signs of bleeding. The umbilical stump either dressed by clear gauze or left without dressing to dry up and separate early.
**Care of eyes:**

To prevent infections of eye put local preventive application on the conjunctival sac or AgNo₃ eye drops (diluted 1/100). To prevent eye infection as Ophthalmia Neonatorum. In using AgNo₃ wash the eyes after 2 minutes with distaled water (D.W) or normal saline to decrease the irritant chemical effect of the AgNo₃.

**Identification methods:**

To prevent the mistake of changing of babies so use special pieces of clothes or plastic and write the triple name of mother and number of bed and put one on mother's wrist and other on baby's wrist.

**Examination of newborn:**

During first hours of life examine the baby full exam.
- Examine the head, the frontal over riding of skull.
- Examine the eyes, mouth, tongue, heart, lungs abdomen, upper and lower limbs, anus and genitalia.
- Head circumference normal.
- Weight of ♂ baby= 3 kg (7 pounds)
- Weight is less in ♀ baby.
- Long= 51 cm.
- Examine for conjenital abnormality as: cleft palate, club foot, tongue tie, cephalic haematoma.

**Weight of baby:**

Baby loses about 5-10% of his body weight during first day after delivery. After that the weight increase and reaches the birth weight in the 10th day.
**Temperature and Pulse:**

Take the pulse from the temporal artery during sleep. Temperature better taken by rectal route. It is higher than temperature from mouth about 1°C.

**Writing the birth certificate:**

Information of birth certificate:

1. Baby's name.
2. Parent's name.
3. Date and time of delivery.
4. Weight of baby.
5. Type of delivery,
6. Name of nurse.
7. Name of hospital.
Changes during Puerperium

Puerperium:

the Period of 6 weeks which follows labour is called puerperium it is characterized by:

1. Return of generative organs to their pregravid state. This is called (involution).
2. Starting of lactation.

Involution of Uterus

After labour the uterus becomes as a strong mass of tissues, it's wt is about 960 gm. At the end of puerperium it returns to it's normal size and the wt is 60 gm. This reduction in size and weight occur more fast during this first week. Involution of uterus is by atrophic process which occurs due to:

1. Autolytic process of proteins substances in the uterine wall into simple form which is absorbed into blood stream and excreted by kidneys in urine.
2. Ischemia of uterus due to contraction of muscles fibers of uterus compress the blood vessels and reduce the blood supply.

Changes in decidua:

The deep layer of decidua stays to from the endometrium. The superficial layer is shed out with lochia. Involution of the uterus is a diagnostic sign of normal puerperium. To diagnose this examine the size of uterus daily. The bladder must be empty. Full bladder pushes the uterus up and to one side and may be a cause of post partum hemorrhage. After labour the uterus sinks down into pelvic fundus is between the umbilicus and pubic symphysis. Uterus become not palpate in the abdomen at the end of 10\textsuperscript{th} day.
Signs of abnormal Involution of uterus:
1. No reduction of uterus size.
2. Flaccidity of uterine muscles.
3. Stopage of lochia.
4. Retaining of blood clot inside uterus.

Changes in Cervix

After labour, cervix is soft and opened, but after one week it contracts becomes tight. The internal OS is closed, but the external OS may remain open, especially in multipara.

The Lochia:

The discharge from the uterus during puerperium. It is alkaline in reaction. Amount of lochia varies in different women. It is more in multipara. Lochia disappear after 3 weeks.

Types of Lochia
1. Lochia Rubra: 1-3 days. For the 1st 3 days lochia consist mainly of blood, it contains also slight amount of mucous, pieces of decidua liquor.
2. Locia Serosa: 4-9 days. The discharge is pale brownish in colour, contains less blood but more serum, also leucocytes and organisms.
3. Lochia Alba: 9-15 days. The discharge is creamy whitish contains leucocytes organisms, mucous.

Abnormal signs of lochia
1. Persistent lochia rurba for long time is a sign of retained placental pieces in uterus.
2. Sudden early stoppage of lochia.
3. Severe bleeding after lochia alba.
Causes of these abnormal signs could be retained pieces of placenta, psychological factors as fright, or cold.

**Changes in abdominal wall**

Abdominal wall needs 6 week to return gradually to normal state. The striae which occur during pregnancy remain, but becomes light in colour. The strength of abdominal muscles could be regained by good diet, adequate rest, practice and exercise.

**After pain:** due to uterine contractions during puerperium. This pain increased with lactating of the baby because suction of breast stimulates the uterine contraction. This pain may stay few days.

**Digestion:** Epitite may decrease after labour. Thirst is increased due to sweating and loss of fluids. Constipation is also occur (present) in early puerperium.

**Loss of weight:** woman loses about 10 pounds of her weight due to labour. Also loss of her weight due to loss of fluids from her body.

**Skin:** more sweating especially at night so the woman better not expose to cold.

**Kidneys:** there is increase in amount of urine during 2nd-5th day after labour (about 3L/day). During early puerperium urine contains more nitrogen due to autolysis of proteins in the uterus wall. Also urine may contain sugar (lactose).

**Menstruation:** menstrual cycle returns to normal state after 8 weeks if the mother not lactating her baby. Usually the cycle disappears during lactation, although sometimes may reappear after 2-4 months. Disappearance of the cycle is also due to stoppage ovulation although pregnancy may occur sometimes.
Nursing care of puerperal woman:

* Observation of temp, pulse and respiration:

Some increase in temp. may occur after labour without a known causes (not more the 37.8). ingorgment of blood vessels of the breast may be a cause of slight fever. Increase of baby temp. especially with rapid pulse is a sign of puerperal pyrexia. During early puerperium take temp. every 4 hours then twice daily. Normal pulse after labour is slow 60-70/min then returns to normal rate after 10 days. Fast pulse more than 100/min may indicate shock due to post partum haemorrhage.

* Diet:

Good quality and quantity diet must be given to woman during puerperium to:

1. Supply her body with the normal calories demand.
2. Additional supply to promote production of milk.
3. To increase the resistance and immunity against diseases and infections. The diet of puerperal woman must contain enough fluid especially milk (2 pints/day), also proteins, vitamin, minerals, Ca, rich in Iron to treat anaemia. Vegetables and fruits.

* Early ambulation: it has many advantages

1. Activates the blood circulation.
2. Aids the function of digestion and urinary system. So prevent constipation and abdominal destention.
3. Promotes the involution of uterus.
4. Woman feel better and healthy. Normal woman can leave her bed after 8-24 hours after labour.

* Daily bath: important due to night sweating. Daily bath will clean her body and activate the blood circulation. Also feel more comfortable.
* Urinary elimination: encourage the woman to empty her bladder regularly because full bladder could be causes of haemorrhage. Better to avoid catheterization unless very necessary.

* Catheterization: use clean and sterile instruments. Also clean the perineal area and cover the vaginal orifice with sterile piece of cotton to avoid any bacterial contamination.

* Intestinal Elimination: usually constipation present in early puerperium. Advice her to drink lot of fluids and eat raphage diet and to practice exercises. If constipation for more than 3 days use rectal enema or laxative suppositories. Oral laxatives may interfere with lactation.

* Promotion of breast feeding: encourage the woman to feed the baby from her breast and advice her how to take care of cleaning her breast and how to lactate her child.

* Care of perineum: to prevent infection and for quick healing of torn tissues. Clean the area with warm water and soap using small pieces of gauze. The nurse must clean her hands before and after cleaning the perineal area. Cleaning should be from downwards using one piece of gauze every time.

* Perineal self-care: teach the woman how to clean the area by herself. Using sterile clean instrument and the direction of cleaning.

* Perineal discomfort: in normal labour there will be no perineal discomfort but with episiotomy or if there is tearing of tissues which is sutured or if there is oedema. Then the woman will feel discomfort and pain in the area.

**Treatment:**

Use local thermal treatment or use local medical ointment. Also may give analgesic tab by mouth for pain.
Complications of puerperium

1. Puerperal pyrexia (puerperal infection):

   Entering of bacteria the body of the woman through the genital canal during the 3 weeks which follow labour or abortion will cause puerperal pyrexia of infection. Usually occurs in the endometrium, and if not treated reaches to the blood causing septicemia. Puerperal infection is a common cause of maternal death during puerperium.

   Causative micro-organism:

   1. *Streptococcus*.
   2. *Staphelococcus*.

   * Factors which lead to puerperal infection:

   1. The bacteria is transmitted by hands, fingers contaminated.
   2. Incomplete sterilization of the labor ward or puerperal ward.
   3. Prolonged labour and haemorrhage or tearing and injuries to mother due to abnormal presentations.
   4. Early rupture of the amniotic sac.
   5. Retained pieces of placenta or membrane inside the uterus.

   Prevention of puerperal infection (pyrexia)

   1. Full examination of woman during pregnancy to diagnosis and treat any diseases like (anaemia).
   2. Treat the carious teeth, and fungal infection as foot athletes.
   3. Advice the woman to avoid sexual intercourse during last 2-4 week of pregnancy.
   4. Diagnose any case of cephalo-pelvic disproportion before labour.
5. complete sterilization and cleaning of the labour and puerperal wards.
6. use sterile and special clothes for the workers in these wards.
7. Better to avoid frequent vaginal examination after rupture of membrane.
8. Isolation of the feverish woman in special room.
9. Prevent dehydration by giving fluids by mouth or I.V.
10. Vaginal culture swab.
11. Complete care of the cleaning of perineal region and avoid bacterial contamination.

One type of puerperal infection is:

**Endometritis**: it is local infection affect the endometrium. The bacteria enter through the placental site and may affect whole of endometrium uterus. The severity of this infection depends on:

1. The resistance of woman.
2. The strength of the microorganism.
3. Degree of trauma.

**Signs and Symptoms**

- These appear after 48-72 hours.
- There is rise in temp. more than 38.4°C.
- Shivering, rapid pulse, loss of appetite, headache, backache, engorgement of milk in breast, restlessness.
- Abdominal pain, big uterus (slow inovation) tenderness of uterus on examination.
- Decrease of lochia which become dark brown and offensive. Sometimes lochia increase in amount and also offensive.
- If the infection remain locally in the uterus patient may cure in 7-10 days if treated well.

- If the infection separated in difficult case it may cause peritonitis.

- Or thrombosis.

- Or cellulitis.

**Management and Nursing care:**

1. Put the patient in semi-sitting position better drainage of lochia.

2. Isolation in special room to prevent infections of other women and to provide her with enough rest.

3. Fluids give by mouth or I.V.

4. Ergot or methergine injection is given.

5. Diet rich in proteins, vitamins and iron.

6. In difficult cases avoid breast feeding.

7. Proper antibiotics, penicillin and streptomycine together, or tetracycline better to do culture from vaginal swab.

**Other complications of puerperium:**

**2- Pulmonary embolism:**

It is due to separation of small blood clot from any vein and reaches the right side of the heart and when the clot obstruct the pulmonary artery blood flow to the lungs will stop partially or completely and the woman may due to hypoxia in few minutes. If the clot is small it may not cause death only dyspnea. Repeated attacks of pulmonary embolism may be followed by thrombophlebitis or severe haemorrhage or shock.

**Signs and Symptoms:**

1. Severe pain in cardiac area.
2. Severe dyspnea.
3. Irregular pulse.
4. Death may occur in few minutes or hours depending upon severity of pulmonary obstruction.

**Management and Nursing care:**

Prevention of diseases during pregnancy and labour. Early ambulation and walking after labour and surgical operation. Treatment of diseases by:

1. Giving oxygen to decrease the dyspnea and cyanosis.
2. Heparin or dicumarol (anticoagulant).
3. Morphine to decrease the fright.
5. Give antibiotics to prevent infections.
6. Give I.V. fluids during the attack after that give good diet.

**Other puerperal complications:**

**3- Complications of urinary bladder:**

1. Retension of urine.
2. Residual urine.
3. Incontinence of urine. Condition in which the woman can't control her urination. It is common with cases of retension of urine.

**Signs and symptoms of incontinence of urine:**

1. The women feels drops of urine with cough or sneezing.
2. The of disease is due to weakness of muscles of pelvic flour.
3. Sometimes there is a fistula or tear between the urethra and vagina. This tear happen during labour or surgical operations.
Management and Nursing care:

1. Advice and teach the woman to do special exercises of the muscles of pelvic floor to strengthen it. By relaxation and contraction of these muscles during urination.

2. Diet rich in iron, proteins and vitamins.

3. General cleaning of the body and changing of the clothes to prevent infections.

4. Catheter is used sometimes to correct the condition.

5. Surgical operation if this case persist for long time.
Abnormal Labour

1. Presipitated labour

Delivery of baby in short period due to over contraction of the uterine muscles.

Dangers:

- To baby: high mortality rate.
- To mother: haemorrhage, tear, infection.

2. Prolonged Labour

Also called mechanical dystocia, or obstructed labour. The period of labour exceeds the normal limit (24 hours) and lead to maternal and foetal distress.

Causes of Prolonged labour:

1. Abnormal power. (Abnormal uterine contraction).
2. Abnormality of passenger (foetus).
3. Abnormality of passages (pelvis and genital canal). As:
   - Contracted pelvic.
   - Pelvic tumers.

Abnormal uterine contraction:

Also called uterine dysfunction or inertia it is of 2 types:

1. Hypertonic uterine dysfunction.
2. Hypotonic uterine dysfunction.

Causes of uterine dysfunction:

1. Over use of analgesics during early labour.
2. contracted pelvis.
3. uterine tumors and obliquity of uterus.
4. Scars of previous caesarean section.
5. Pendulans abdomen.
6. Foetal malposition.
7. Post maturity.
8. Polyhydramnios.
10. Obesity.
11. Twins.
12. Full bladder or rectum.

**Malpresentation of foetus:**

1. Persistent occipito posterior presentation.
2. Breech presentation.
3. Shoulder presentation.
4. Face presentation.
5. Brow presentation.

**Cephalo-Pelvic disproportion:**

It is a cause of prolonged labour. Also called obstructed labour. Caesarean section is the treatment.

**Causes:**

1. Contracted pelvic.
2. Oversize baby.
   
   Causes of oversize baby: diabetes mellitus, multiparity and hereditary factor.
3. Hydrocephalus.
4. Ascites.
Nursing care of prolonged labour:

1. Urine analysis: bladder is emptied and urine examined every 4 hours for acetone, protein.
2. Fluid balance chart. After 24 hours give I.V. fluids to prevent dehydration.
3. Food may be dangerous.
4. Sedative: Drugs given to relieve pain.
5. Observe signs of foetal and maternal distress.

Sign of maternal distress:

1. Rising pulse.
2. Increase of temp.
3. Woman feels weak (anxious expression).
4. Vomiting.
5. Signs of dehydration.

Signs of foetal distress:

1. Rapid or slow foetal heart.
2. Irregular rhythm.
3. Passage of meconium.
4. Excessive foetal movement.

Surgical Obstetrical Operation

Induction of labour:

It is one type of artificial labour.

Causes:

1. Post maturity.
2. Toxiemia of pregnancy.
3. Haemolytic diseases.
4. Diabetes mellitus.
5. Placenta previa.
6. Accidental A.P.H.
7. Mechanical dystocia.
8. Chronic hypertension.
11. Delayed or prolonged labour more than 24 hours after rupture of amniotic membrane.
12. Intra uterine death.

**Before Induction of labour**

1. The nurse must be sure about expected date of delivery (E.D.D).
2. Take the agreement of the woman and her husband.
3. Be sure that foetal head had entered the mother's pelvis.
4. cervix should be soft, short and dilated.

**Types of Induction of labour**

1. **Medical induction:**

   Nowadays use pitocin, given I.V. in small doses with (glucose solution-5%). The doctor most decide the number of the drops/min. it should not be more than 4-5 drops/min.

**Nursing care of medical induction**

1. Observe the number of the drops of the solution and pitocin given I.V./min.
2. Observe the duration and intensity of uterine contractions and its frequent intervals. Any uterine contractions which stays more than 90 seconds means the dose of pitocin is large, and must be decreased (to avoid rupture of uterus).

3. Observation of foetal heart.

   Bradycardia means foetal distress and must stop given the drug and call the doctor.

   4. Record the B.P every 15 min.

**Dangers of medical induction:**

1. To mother:
   a- Rupture of uterus.
   b- Tears and laceration of genital tract.
   c- Haemorrhage due to placental separation.

2. To foetus:
   a- Prematurity.
   b- Foetal distress.
   c- Central nervous system injury.
   d- Neonatal Jaundice.

**2- Surgical Method of induction of labour**

   It means the artificial rupture of the membranes or called (amniotomy). It is a safe method used after the use of I.V. pitocin. The doctor or the nurse rupture the membrane which will allow the descend of the head and this will stimulate the uterine contraction. So labour will occur few hours after puncture of membrane.
**Nursing care of the surgical method of induction of labour**

- This operation is the doctor duty but in special cases (emergency) the nurse may do it.

- Put the patient in lithotomy position.

- Clean the perineal area, put antiseptic solution on the vulva.

- Then insert two fingers of her hand in the cervix till feel the amniotic membrane then insert forceps or long hook in the vagina and do puncture of the membrane.

- Observe the amniotic fluid, its quantity, colour and consistency.

- Observe then the foetal heart and uterine contraction every 10 min.

- Avoid vaginal examination frequent to prevent entrance of bacteria to uterus.

- Also observe for any cord prolapsed.

**Artificial labour**

1. Induction of labour → medical method
   → surgical method

2. Episiotomy or perineotomy.

3. Forceps delivery.

4. Labour by using vacuum extrator (ventous).

**Episiotomy**

It is a surgical operation done in the 2\textsuperscript{nd} stage of labour to shorten it especially in the primegravida.

**Causes or advantages of episiotomy**

1. Make delivery easier and shorter.

2. Prevent perineal laceration and its complication.
3. Healing of the surgical wounds is better and faster than the laceration.
4. Allow easy delivery of the head and prevent trauma to the brain.
5. Shorter the 2\textsuperscript{nd} stage of labour.
6. Prevent the pain of piles.
7. Helps the return of the genital tract tissues to its normal condition especially the vaginal tissues.

**Types of Episiotomy**

1. Mediolateral incision.
2. Central incision.
   
   Bleeding is less, patient more comfortable, suturing is easier.

**Nursing care of episiotomy**

1. It should be done under local anaesthesia.
2. Suturing of the wound by catgut sutures by the doctor.
3. Suturing is done after 3\textsuperscript{rd} stage of labour. (after delivery of placenta).
4. Keep the perineal area clean and dry by putting sterile piece of gauze on it.
5. Use of antiseptic solution to prevent infection.
6. Sedative is given to decrease pain.
7. The nurse must observe and examine the perineal area daily to detect any abnormality like bleeding, oedema, or infection.
Forceps delivery

Obstetric forceps

Parts of forceps delivery

1. Blade.
2. Shank.
3. Lock.
4. Handles.

Forceps delivery uses

1. Cervix fully dilator.
2. Head presentation-cephalic.
3. Head in the pelvic.

Types of forceps operation

1. Mid forceps operation. Used when the head is in the middle of the pelvic.
2. Low forceps operation. Used when the head reaches the perimeum. This is used when there is delayed in progress of labour and in foetal or maternal distress.
3. Wrigley forceps operation (after-coming head)
   Used in breech presentation after the delivery of the body of baby so use the forceps to extract the head.

Kiellands forceps operation

Causes of forceps delivery:

I- Maternal Factors:

1. Maternal distress.
2. Uterine inertia.
3. Prolongation of 2\textsuperscript{nd} stage of labour.
4. Heart diseases.
5. Narrow perineum.
6. To decrease the pressure of foetal head on the perineum in occipito posterior presentation.

\textbf{II- Foetal factors:}

1. Foetal distress.
2. Malpresentation.

\textbf{Dangers of forceps delivery}

\textbf{I- To mother:}

1. Injuries to bladder or rectum.
2. Tear of perineum or cervix.
3. Uterine bleeding.
4. Infections.

\textbf{II- To the Foetus:}

1. Facial or brachial palsy.
2. Cord compression.
3. Intra cranial haemorrhage.

\textbf{Nursing care before the operation}

1. Prepare the instruments, forceps catgut suture, catheter, sterile gauze local anaesthetic.
2. Take the agreement from the woman and her family.
3. Be sure the presenting part is the head.
4. Cervix must be fully dilator.
5. Catheterize the patient to empty the bladder.
6. Be sure that membrane is rupture.
7. Foetal head must be descended in the pelvis.
8. Be sure that pelvis is wide.
9. Prepare the baby's clothes.
10. Prepare the resuscitator suction, incubator.
11. The nurse must wear special clothes for operation like, mask wear gloves for operation.
12. Put the patient in lithotomy position and prepare her for operation.

Nursing care during and after forceps operation

1. To prepare the forceps ready for the doctor.
2. To catch the 1st part of the forceps after its insertion in the birth canal.
3. Use the antiseptic lotion to prevent infection.
4. Prepare the suture and help the doctor in suturing the episiotomy.
5. Observe the uterus after the operation. Must give ergot or @ after labour to avoid post partum haemorrhage.
6. Observe the uterus bleeding or lochia after labour and record its colour, quantity and its type.
7. Cleaning the perineal area and putting sterile gauze over it.
8. Observe and record the general condition of the woman, pulse, temp., B.P., respiration.
9. Observation of the child, breathing, heart rate, colour of skin, reflexes, apgar scoring system in 1st and 5th min. after labour.
10. Care of newborn baby. Ligation of the cord.
**The Vacuum Extractor (ventouse)**

An instrument used in prolonged labour to deliver the head of the baby. The vacuum extractor has 3 metal cups 40, 50, 60 mm in diameter, the cup is applied to the head (occiput) and can be applied during the 1st or 2nd stage of labour. The small cup used in cervix is not fully dilated.

**Indications for use of vacuum extractor**

1. Vacuum extractor is used as an alternative to the obstetrical forceps.
2. Prolonged first stage of labour. Vacuum extractor can be used even if the cervix is not fully dilated.
3. Delay in second stage of labour due to uterine dysfunction.
4. Unrotated posterior position of the occipit simple tract with ventouse results in spontaneous rotation to the anterior position.
5. In delivery of 2nd twin.

**Dangers of vacuum extractor**

1. Injury to mother when the cup is applied to the head with tissues of mother.
2. Formation of cephalohaematoma to the baby.
3. Necrosis of scalp
4. Alopecia  
   If traction exceeds 30min.

**Caesarean Section**

It means extraction of the foetus and placenta from the uterus through an incision done in the abdominal and uterine walls. This operation done for the prophylaxis of complications to both child and mother.
Types of Caesarean Section

I- The low segment C.S.

This operation done by incision in the abdominal wall then the uterine wall in the lower part near the cervix. The incision is transverse.

Advantage of this operation

1. Less dangerous from other types due to less number of big blood vessels so less chance of haemorrhage.
2. Less chance of infection after operation.
3. Healing of wound is better.
4. Less chance of rupture uterus in successive pregnancies because uterine activity is less in the lower segment from the upper segment.

The operation done by incision in the abdominal wall than the peritoneum, then the uterine is incised (its 3 layers) in its lower segment. The amniotic membrane is rupture. The fetus is taken out then the placenta then suturing of uterine muscles peritoneum and the layers of abdominal wall.

II- Classical Caesarean section:

This operation done by middle ventrical incision in the abdominal and uterine walls.

Advantages of Classical C.S.

1. This operation done in the urgent cases when there is danger to foetus, mother or both.
2. Also done in transverse lie of foetus.
3. Done in case of anterior placenta previa.
4. Also done in cases of presence of adhesions between the urinary bladder and the low segment of uterus as a result of previous C.S.
Other types of C.S.

III- Elective C.S.

This operation is done in special time which has been arranged to and determined before the date of end of pregnancy.

Indication of elective C.S.

1. Cephalo-pelvic disproportion
2. Previous C.S.
3. Ante partum.
4. Diabetes mellitus.
5. Placental dysfunction.
6. Previous operation in the uterus.

VI- Post Mortem C.S

This operation done after death of the pregnant woman when the foetus is still alive. The operation must be done quickly (2-20 min.) after the death of mother).

Causes or indications of C.S.

A- Maternal causes:

1. Cephalo-pelvic disproportion in cases of:
   a- Contracted pelvis.
   b- Tumor blocking birth canal.
   c- Presence of ovarian cyst which prevent normal labour.
2. Previous C.S. or any other operation in uterus for fear of rupture uterus.
3. Severe Toxiemia of pregnancy.
4. Placenta previa and premature of normal implanted placenta.
5- Mother distress.

6- Old premigraivda and fertile women.

7- Disease of mother like heart dis., hypertension, D.M., psychosis.

8- Obstructed labour due to uterine dysfunction.

**B- Foetal causes**

1. Cephalo-pelvis disproportion due to large baby.

2. Cord prolapse.

3. Foetal distress.


5. Rh incompatibility.

**Contraindications of C.S.**

1. Intra uterine foetal death.

2. Major foetal abnormalities.

3. Peritoneal or genital infections.

**Management and Nursing care before C.S.**

1. Prepare the instruments necessary for the child like suction apparatus oxygen, clothes of baby.

2. Full examination of mother.

3. Obstetrical examination. Presentation of foetus, vaginal examinations to know dilation of cervix and the membrane if rupture or intact. Examine the vaginal discharge. Type of pelvis, examine for any abnormality of genital tract like tumors or varicose.

4. Listen to foetal heart.

5. Write the cause of C.S. in the case sheat patient.
6. Psychological preparation of the pt. and take written agreement of pt. and her husband.

7. Routine laboratory investigation like Hb, blood groups, Rh factor.

8. Prepare by the pt. by shaving the skin of abdominal wall and perineal region.

9. Prepare the drugs which are needed like morphine, pethedine, ergot, methargine.


**Nursing care (post) after C.S.**

1. Observation of respiration and degree of consciousness of the pt. Observation of mucous membrane of lips and nails. If cyanosis give O₂.

2. Observe bleeding from wound or vagina.

3. Record the B.P. pulse, temp. and respiration every 15 min. till become regular then every 4 hours to detect any internal bleeding or shock.

4. Observation of the I.V. fluids given to the pt. during 24 hours (number of drops/min). Nothing by mouth, record the amount of I.V. fluids given and the amount of fluids is excreted out.


6. Encourage the pt. to take deep breath and to expelled the sputum out of her chest by cough.

7. Abdominal distention due to agas and can be treated by walking or by low rectal enema.

8. Observation of bladder function.
9. Pethedine or Morphine given every 6 hours for pt.

10. Oxytocin drip given help contract the uterus.

11. Antibiotics given to prevent infection.

12. After 24-36 hours given fluid by mouth.

13. Cleaning of the body, teeth, breast and perineum.

14. Examination and observation of infant.

15. Mother can breast feed her baby after 8-24 hours after operation.

Complications of C.S.

1. Internal and external haemorrhage.

2. Atelectasis.

3. Pneumonia.

4. wound infection.

5. Disruption of wound.

Discomfort after C.S

1. Abdominal distention.

2. Vomiting.

3. Constipation.

4. Urinary retention.

5. Pain.
Lactation

Lactation is of 2 types

1. Breast feeding.
2. Artificial feeding.

Advantages of breast feeding

1. Breast milk contains all the nutrient substances which the infant needs and it changes according to his age.
2. Easily digested.
3. Colostrum is secreted from the breast in the first three days after labour and this provide antibodies and immunity against diseases.
4. Clean, warm and cheap.
5. Breast feed babies develop better, less chance for infectious dis. As gastroenteritis (diarrhoea).
6. Good psychological relationship between the mother and her child.
7. Mother feels more comfort and happy.
8. Breast feeding helps the inovulation of uterus.
9. Breast feeding decrease the rate of breast carcinoma.

Factors which prevent breast feeding

1. Diseases of the mother, like pulmonary TB, typhoid fever, cardiac dis., puerperal sepsis.
2. Bad psychological condition of mother like mania or epilepsy.
4. Flattened nipple.
5. Engorgement of breast, breast abscess, breast cancer.
6. Infant causes like congenital abnormality dis. of nervous system.
The Breast

It is a gland which is enlarged during pregnancy due to the effect of prolactine hormone from the anterior lobe of pituitary gland and prepared for lactation. In the nipple opens 15-20 lactiferous ducts. Around the nipple it the areola it is brown in color. Oxytocine hormone from post lobe of pituitary gland help in the lactation.

Factors affecting on formation of milk

1. Hormonal factor,
2. Suction of baby and emptying of breast.
3. Age of baby.
4. Psychological condition of the mother.

How to feed the baby

Breast feeding can begin at 8-24 hours after labour. The mother must be comfortable, (sitting or lying down) and support the baby with her arm. Use the other hand to help the baby to suck. The baby must suck the nipple and the areola. The mother must notice the movement of his jaw and his swallowing. After feeding she lift him to get red of air.

Time and period of lactation

After birth, lactation from 1-5 min, the increase to 20 min. time of lactation according to his need about 6-8 time/day.

Nursing care and teaching

1. Breast care: important to help to breast clean (use water only) not use soap. Wash her hands before lactation.
2. Teach the mother how to feed the baby and the time and character of correct suction.
3. Expression of milk; use:
a- Hand pump expression.

b- Electric pump expression.

4. Rest and diet: Rest and good diet are important factors in the formation of milk. Diet must contain protein, Ca\(^+\), vitamins, fluids. She must avoid large quantity of fats and carbohydrates.

5. Drugs: in some drugs are secreted with milk.


**Artificial feeding:**

Cows milk can be modified and use as substitute for breast milk.

<table>
<thead>
<tr>
<th>Substances</th>
<th>%Sugar</th>
<th>%Protein</th>
<th>% Fats</th>
<th>% Minerals</th>
<th>% Water</th>
<th>% Calories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colostrum</td>
<td>3.5</td>
<td>8.5</td>
<td>2.5</td>
<td>0.4</td>
<td>85.1</td>
<td>21/30 ml</td>
</tr>
<tr>
<td>Human milk</td>
<td>7</td>
<td>1.5</td>
<td>3.5</td>
<td>0.2</td>
<td>87.8</td>
<td>20/30</td>
</tr>
<tr>
<td>Cows milk</td>
<td>4.5</td>
<td>3.5</td>
<td>3.5</td>
<td>0.75</td>
<td>87.75</td>
<td>20/30</td>
</tr>
</tbody>
</table>

**Types of artificial milk**

1. Fresh milk
2. Condensed milk

3. Dried milk
   a- Half cream milk.
   b- Full cream milk.

Dried from cow's milk after heating, fluid removed by evaporation.

To reconstitute milk add 30 ml water to each 49 m of powder.

**Nursing care and advice to mother**

1. Breast feeding is better the artificial feed.
2. Clean the bottles by boiling it.
3. Teach her how to prepare the milk (using).
4. During 1st 3 months give half cream then change to full.

**Complications of breast feeding**

**I- Engorgement of Breast occurs between 3rd-5th day of puerperium.**

**Causes**

1. Engorgement of blood vessels and lymphatics in the breast.
2. Fullness by milk.

**Symptoms**

1. Breasts are full, heavy and hard. Slight pain.
2. Breast is red in colour and warm, tenderness.
3. It is transitional case and many disappear after 24-48.

**Treatment**

1. Use hot or ice compressions.
2. Give her analgesic for pain (Aspirin).
3. Empty of the breast other by suction of baby or by using the breast pump.

**II. Abnormalities of the nipples**

1. Flat nipple.
2. Depressed nipple.
3. Inverted nipple.

**Treatment:** should begin from pregnancy by teaching the woman how to do massage of on the nipple using her fingers on the 6th month of pregnancy 4-5/day during puerperium mother use the breast pump to empty the breast and try to take the nipple out.
Cracked Nipple:

Tenderness in the nipple. Baby must not take the breast for 24 hours during should the milk must be evacuated by breast pump.

**Treatment:** one drop of gentle violet 1% applied to the breast twice daily. Ointment are soothing use landine or masse cream.

**Mastoitis**

- Simples mastitis is the inflammation of the tissues around the nipple.
- Severe mastitis is the inflammation of the glandular tissues of the breast.

**Causes**

Intrance of bacteria through the fissures in nipple either Staphylococcus aureus or hemolytic streptococcus.

**Signs and Symptoms**

- Puerpeal mastitis occurs usually 1-3-4 weeks of puerperium. Usually preceded by engorgement.
- Pain in breast and tenderness.
- Rise temp.
- Breast hard and red in colour and tender.
- Headache and general weakness.

**Treatment and Nursing care:**

**Preventreis**

1. Care of breast since the last 3 months of pregnancy.
2. Advice about it's cleaning and bathing and using clean clothes.
3. Take care and observe the suction of the baby during breast feed.
4. Early treatment of nipple fissures.
5. Crystaline or procaine penecilline for 3-4 days better to do culture and sensitivity test.

6. If fissures present to nipple then prevent baby from sucking for 24 hour and use the breast pump to empty the breast.

7. Analgesic for pain (Aspirin).

8. Warm compress over the breast.

**VI Breast Abcess**

Infection of the breast either simple around nipple or severe to form suppurative process and form abcess in the glandular tissues.

**Causes**

Same as mastitis.

**Signs and Symptoms**

1. Severe acute pain may radiate to axilla after its occurs in breast.

2. Rise of temp., rigor, and rise pulse.

3. Breast is hard and oedematous.

**Treatment and Nursing care**


2. Take swab for culture and sensitivity to give the prepare antibiotics.

3. Elevate or supporting of breast.

4. Use hot compresses in case of suppusion.

5. Avoid the baby from suction.

6. If pus accumulate then surgical drainage under anaesthesia.

7. After drainage put sterile gauze in the wound then closed.
Gynaecological Surgical Operations

These are either simple operations as cauterization and curettage, or big operation as Caesarean section and hysterectomy.

Complications of gynaecological operations

I- Immediate Complications

1. Hypotension and shock.
2. Primary haemorrhage divided to
   a- Internal, b- External.
3. Damage and injury to ureter, bladder or rectum.
5. Atelectasis.
8. Drug allergy.

II- Later Complications

1. Infections.
2. Secondary haemorrhage.
3. Pneumonia.
4. Retention of urine and urinary tract infection.

Nursing care of gynaecological surgical operation

I- Before operation (starts 2 days before operation):

1. Take full medical and obstetrical history, ask about drug allergy, previous operation.
2. Examine the general condition, B.P., respiration, pulse and temp.
3. Examine the urine for sugar, proteins and ketones. Examine blood for Hb, Blood group.

4. Prepare blood and do cross matching.

5. Encourage the pt. and explain her the investigations needed type of operation and anesthesia.

6. Teach the pt. how to take deep breath after early movement and walking after operation.

7. Take signature of both pt. and her husband.

8. Remove the make up from face.

9. Preparation of pt. by shaving and cleaning the area of operation by soap and water.

10. Emptying of rectum and bladder by the pt. in constipation use laxative suppositories or do rectal enema. If necessary insert foley's catheter.

11. Fluid diet only in the day before operation and nothing by mouth at evening.

II- Nursing Care during operation

1. Cleaning the skin by antiseptic solution like chlorhesidine.

2. Put the pt. in lithotomy position, head slightly directed downwards.

3. Observe the I.V. fluids, types, quantity.

4. Observe the B.P., pulse, respiration every 5 min and observe the colour of lips and nails.

5. Observe the catheter if present.

6. Help the surgeon and anesthetist.

7. Dressing of the wound of end of operation and putting plaster on it.

III- Nursing care after Operation

1. Stay with the pt. until she is conscious.
2. Measure the vital signs (B.P., pulse, Resp., temp.) every 15 min. If cyanosis occur give O₂ immediately. If respiration is difficult use suction.

3. Observe amount of bleeding from vagina.

4. Position of pt. is straight. Change her position every one hour.

5. Give drug for pain like pethidine or morphine every 6 hours.

6. Give antibiotics to prevent infections.

7. Observe the I.V. fluids which are given during its 2 days after operation.

8. Care of the catheter if present and change the urine bag.

9. The vaginal pack if present is removed in the end day morning.

10. After removal of catheter, encourage her to empty her bladder at short intervals to prevent distension of bladder.

11. Sutures are removed on 7ᵗʰ-10ᵗʰ day after operation.

12. After removal of I.V. fluid encourage her to take fluids by mouth.

13. Give diet rich in protein, iron and vitamins.

14. Advice the pt. to lift heavy things.

15. Help the pt. to move and walk after operation.

**Types of gynaecological operation:**

1- Hysterectomy.

2- Curettage.

3- Cauterization.

**I- Hysterectomy:**

1- Total Hysterectomy:

   Removal of uterus and cervix.

2- Subtotal Hysterectomy:
Removal of body of uterus.

3- Radical hysterectomy:

In case of malignancy

Removal of uterus, cervix, upper 1/3 of vagina, both tubes and ovaries and pelvic lymph nodes.

**Methods of Hysterectomy:**

1- Abdominal Hysterectomy.

2- Vaginal Hysterectomy.

**Indication of Hysterectomy**

1- cancer of uterus, cervix, ovaries and fallopian tubes.

2- Large fibroids of uterus.

3- Pelvic inflammation not respond to medical treatment

4- Dysfunctional uterine bleeding (during menpase).

5- Prolaps of uterus.

**Complications of hysterectomy**

1. Primary and secondary haemorrhage.

2. Shock.

3. Damage to ureter, bladder, rectum (uretic fistula).

4. Sepsis (infections of wounds).

5. Retenstion of urine.

6. Paralytic ileus and abdominal distension.

7. Thrombosis and embolism.

**II- Dilation and Curettage**

Patient is usually anasthesized, placed in lithotomy position and cervical canal is gently dilated with gradual dilators to not more the 7 mm
in size. Then small polyp forceps or curette is introduced in the uterine cavity and evacuated of uterus is done.

**Indications or Causes of Curettage**

1. **Diagnostic Indications:**
   a. Post menopausal bleeding.
   b. Post coital bleeding.
   c. Irregular and heavy vaginal bleeding in pt. over 40 years which not respondal to hormonal therapy.
   d. Infertility to take endometrial biopsy.

2. **Therapeutic indications:**
   a. Treatment of menorrhage and irregular uterine bleeding due to presence of endometrial polyp.
   b. Removal of retained products of conception following incomplete abortion.

**Complication of curettage**

1. Performation of uterus.
2. Cervical incompitance and habitual abortion.
3. Infections.

**III- Cauterization**

It used for special condition or diseases called cervical erosion. This diseases the acidic medium of vagina is changed into alkaline so cause erosion of cervix. Patient complains of mucous brownish or red vaginal discharge which occur post coital. Cauterization can be done without anesthetic because the cervix is sensitive. After dilating the cervix the lower part of cervical canal and whole area of erosion are
cauterized to depth of 2mm. The patient will have discharge for 2-3 weeks after operation till burn heats.

Complications of Cauterization

1. Infections: so use sulphoamide cream application post operatively.

2. Secondary haemorrhage 10-14 day after operation pt. must be readmitted to hospital. Speculum is passed and blood cleaned away. Vaginal pack is used finally which will apply pressure on the cervix and stop bleeding. The pack is removed after 48 hours.
Menstrual Disorders

Normal menstruation

It is a periodic discharge of blood, mucous and necrotic fragments of endometrium from the mucous membrane of the body of uterus. It occurs at cycle of 4 weeks (28 days). Menstruation lasts 3-5 days, blood loss about 40 ml. menstruation continues from puberty till menopause.

Menorrhage

Excessive menstruation either in amount of blood loss or in period more than 7 days or in both.

Causes

1. Local pelvic causes:
   a- Uterine fibroids.
   b- Endometritis and endometriosis.
   c- Infections of fallopian tubes and ovaries (Salpingo-Oophritis).
   d- Retroversion of uterus.
   e- Intrauterine contraceptive devices I.C.D.

2. General Causes:
   a- Early stage of myxoedema (hypothyroidism) or thyrotoxicosis (hyperthyroidism) (diseases of thyroid gland).
   b- Blood diseases like leukaemia and thrombocytopenic purpura.
   c- Hypertension.
   d- At puberty or menopause.

3. Emotional Causes:
   a- Anxiety, shock, fear, distress.
   b- Over-extension before and during menstruation.
   c- Climatic conditions.
Signs and Symptoms of Menorrhagia:

1- Excessive blood loss in amount.
2- Prolonged menstruation.
3- Anaemia.

Nursing care of menorrhagia

1. Rest in bed during the period.
2. Diet rich in iron.
3. Sedative drug as bromide and phenobarbeton.
4. Ergot drug to control and stop the bleeding.
5. Thyrotoxine may be used in some cases.
6. Hormonal treatment (oestrogen) used in acute case.
7. Operative management by curettage for endometritis or hysterectomy if other steps fail.

Irregular Uterine Bleeding:

Also Called Metrorrhagia:

It Means inter menstrual uterine haemorrhiga.

Causes:

1. Fibroids of Uterus.
2. Endometrial Polyps.
3. Adenoma of endometrium.
4. Carcinoma of uterus.
5. At ovulation (middle of cycle at 14 days).
6. Influenza or any acute fever.
7. Sudden severe emotional crisis.
8. Carcinoma of Cervix.
9. cervical polyps.
10. Erosion of cervix.
11. Acute salpingitis and vaginitis.
12. Puberty and menopause.
13. Oestrogen treatment is followed by irregular bleeding.

**Management and Nursing care**

1. Treat the cause.
2. Curettage for diagnosis.
3. Drugs like ergot.

**Amenorrhoea**

It means absence of menstruation. It is of two types:

A. Primary amenorrhoea: when menstruation has never occurred.
B. Secondary amenorrhoea: when amenorrhoea follows a period of menstruation.

**Cryptomenorrhoea**

When menstruation is occurring but is concealed because the vagina is occluded by a congenital septum.

**Causes of amenorrhoea**

A. **Physiological causes:**

1. Before puberty.
2. During pregnancy.
3. During lactation.
4. After menopause.
B. Pathological causes:

1. Uterine lesion.
2. Ovarian lesion eg. Polycystic ovary.
3. Pituitary disorders.
4. Thyroid gland disorders like myxoedema and hyperthyroidism.
5. Diabetes mellitus.
6. Severe general diseases like chronic renal disease anaemia, tuberculosis.
7. Drugs- contraceptive pills for long time.
8. Amenorrhoea after surgical operations like hysterectomy and after pelvic irradiation.

C. Psychological and emotional stress like fright, anxiety, hysteria, change job.

Management and Nursing care of Amenorrhoea

1. In every case pregnancy must be excluded.
2. Ask the pt. about her previous menstrual cycles if regular or not.
3. Treat any emotional stress.
4. Observe the body build, weight, hair distribution.
5. Breast and pelvic organs are examined.
8. Inductional ovulation by drugs like clomiphene.
The Menopause

- Termination of the reproductive period of life in woman which is characterized by cessation of menstrual period usually occur between 47-52 years of age.

- At menopause ovarian production of oestrogen hormone diminish or ceases.

- Excess of gonadotrophic hormone from pituitary gland.

- After menopause gradual atrophy of genital organs the uterus diminishes in size, vaginal wall becomes thin and atrophied.

- The menopause usually taken about 2 years duration so cycles become irregular, diminish then cease.

**Signs and symptoms of menopause**

1. majority of woman have discomfort.
2. Cessation of menstruation usually gradual.
3. Hot flashes of skin and sweating.
4. Mild rise of B.P.
5. Fatigue, anxiety, irritability and depression with insomnia.
6. Headache and vertigo.
7. Pruritus vulva due to decrease of activity.
8. General Obesities.

**Management and Nursing care of menopause**

2. Avoidance of worries.
3. Care in diet and avoidance of obesity with extra daily rest.
4. Sedative drugs: for insomnia give phenobarbiton.
5. For hot flashes and sweating give oestrogen hormone.
6. Reassurance of patients.
Gynecological Disease (inflammation)

Vaginitis

Inflammation of vagina due to trichomonas, candida's or septic infection. Normal vaginal fluid is acidic (pH=4) and this prevents the multiplication of pathogenic organisms. Decrease of acidity occur during.

Causes of vaginitis

Decrease of acidity of vagina due to:

1. Pregnancy.
2. At menopause.
3. After antibiotic therapy.
4. Diabetes mellitus.

Types of vaginitis

A. Monilial vaginitis (candidiasis): it is a fungal infection with candida albicans especially in pt. with glycosuria (D.M).

Causes

1. D.M.
2. Pregnancy.
3. Use of oral contraceptive pills.
4. Use of antibiotics.

Sings of Symptoms

1. Intense vulval irritation.
2. Vaginal discharge thick and white.
3. Redness of vulval skin and vaginal wall.
4. Vaginal swab for culture will show the fungus.
Management

1. Nystatine pessaries (100,000 units) inserted in the vagina for 14 days.
2. Nystatine cream locally or vulva.
3. Nystatine tablets (500,000 units) twice daily by mouth.

B- Trichomonas Vaginitis

The infection is usually transmitted from husband or by using articles from diseased woman.

Signs and Symptoms of T.V.

1. Profuse offensive, frothy, greenish yellow vaginal discharge.
2. Irritation and itching.
3. Onset is sudden.
4. History of similar previous attacks.
5. Occur at any age often during pregnancy.

Management

1. Use gloves on examination.
2. Take vaginal swab for culture and examination of protozoa which is motile.
3. Metronedazole (falgyl) 3 time daily for a week for both woman and her husband.
4. Advice pt. about good hygiene, avoid intercourse for 2 weeks.

C- Atrophic or senile vaginitis

Vaginitis which occur after menopause.
Inflammation and infection of the uterus

I- Endometritis:

Causes of endometritis

1. After delivery or abortion (puerperal endometritis).
2. After operations as curettage.
3. After insertion of intrauterine contraceptive device (I.U.C.D).
4. Gonococci endometritis sexually transmitted disease spread from cervix to uterus.
5. Tuberculosis endometritis.
6. After menopause (atrophic endometritis)

II- Inflammation of Fallopian Tubes and ovaries

Salpingitis: inflammation of fallopian tubes.

Oophritis: inflammation of the ovaries.

Salpingo-Oophritis

Causes:

1. After delivery or abortion (the microorganism is staphylococci or Streptococci).
2. Gonococcal infection.
3. Insertion of contraceptive device.
4. Infection from the intestinal tract as appendicitis.
5. Tuberculosis.
**Complications of Salpingo-Oophritis**

1. Tubal blockage.
2. Infertility.

**Signs and Symptoms**

1. Patient feels ill.
2. Lower abdominal pain.
3. Vomiting with constipation.
4. Rise of temp. 39.5°C
5. Rapid pulse.
7. Irregular cycle.
8. Tenderness on the both iliac fossa.
9. Pelvic examination causes pain especially on movement of uterus.

**Treatment**

1. Bed rest.
2. Adequate fluid intake.
3. Analgesics
4. Bacterial swab from cervix and uterus to give the suitable antibiotics.
5. Removed of the intrauterine contraceptive device if present.
**Gynecology**

**Utero-vaginal prolapse**

A prolapse is a hernia and protrusion of pelvic organ or structures beyond its normal anatomical boundaries.

Descend of uterus and cervix occur when the lateral cervical ligament become weakened.

Vault prolapse occurs following hysterectomy due to inadequate support by lateral cervical ligaments.

**Grading:**

1st degree: descent within the vagina
2nd degree: descent to the introitus
3rd degree: descent outside introitus

**Aetiology:**

1. congenital
2. acquired include:
   - child birth
   - rise in the intra-abdominal pressure associated with chronic cough
   - constipation ascitis
   - lack of vitamin c and corticosteroid therapy
   - surgery as burch colposususpension

**Clinical presentation:**

- discomfort
- feeling of lump in the vagina which usually worse toward the end of the day and relieved by lying down
- uterine descent cause low backache protrusion of the cervix and blood stained discharge
- vault prolapse may produce vague symptoms of discomfort rarely dehiscence of the vault with acute abdomine and small bowel may be seen at the vulva
Clinical examination examined in lithotomy or left lateral position, the bladder is full and the patient is asked to cough.

**Investigation:**
1. Mid-stream urine sent for culture and sensitivity
2. Perineal ultrasound
3. Vaginal endosonography
4. MRI can be used

**Prevention:**
Woman should avoid smoking, constipation, and heavy work.

**Treatment:**
Attempt should be made to correct obesity, chronic cough, constipation if prolapsed is ulcerated. 7-day course of local estrogen.

**A. Medical treatment:**

By pessaries

Indication of pessaries
1. During and after pregnancy
2. As a therapeutic test to confirm benefit of surgery
3. When the patient has not completed her child bearing
4. When she is medically unfit
5. When the patient wishes conservative therapy
6. While waiting for surgery

They are needed to be replaced at intervals of 3 months to one year.

**Complication of pessaries:**
- Vaginal ulceration
- Infection
- Incarceration leading to vaginal discharge and bleeding when pessaries are forgotten and not changed.

**B. Surgical treatment**
Fibroid

Firm rounded spherical well-circumscribed white tumour in the uterus separated from the myometrium by a pseudocapsule of connective tissue it could be single or multiple hard and stony to soft

**Causes:**

The exact cause of fibroid are not well understood although estrogen progesterone and growth hormone appear to promote fibroid growth

**Clinical feature:**

It is variable depending on the size location and number of tumour

1-menstrual disturbance
   - The bleeding pattern:
     A-menorrhagia
     B-intermenstrual bleeding
     C-postcoital bleeding
       - It commonly cause iron anemia

2-pressure symptoms
   - As large fibroid cause pressure on the surrounding structure:
     A-urinary symptom
       - urinary frequency
       - incontinence
       - urine retention
       - hydroureter and hydrenephrosis
     B-venous congestion lead to:
       - varicosities
       - lower extremity edema
       - hemorrhoids
       - pain and dyspareunia
     C-as fibroid grow compress the nerve that supply the pelvis and the legs cause pain in the back flanks or legs
3-pain
   - pelvic heaviness that radiate to the back or lower extremities
   - congestive dysmenorrheal
   - dyspareunia
   - acute abdomen
4- subfertility:
5- palpable abdominal-pelvic mass and abdominal swelling
6- Malignant transeformation

**Investigation:**
1- ultrasound
2- hystrosalpingiography
3- MRI
4- hystroscopy
5- laproscopy
6- endomaterial sampling

**Treatment:**
1- expectant treatment
   By observation and periodic examination every 3 to 6 months
2- medical treatment
   - treatment of symptoms as menorrhagia
   - treatment of fibroids
3- surgical treatment:
   - myomectomy
   - hysterectomy
4- uterine artery embolization
Ovarian cyst

Can be of 2 types:
1-physiological cyst
2- pathological cyst

Physiological cyst:
Occur in normal physiology and it is ex.
1.follicular cyst
2.corpus luteal cyst
3. hormone dependent luteal cyst

Follicular cyst:
It is usually unilateral or unilocular either in the right or in the left it result from retention of unruptured graffian follicle in which the ovum will disappear then proliferation of granulosa cell it is on the surface of the ovary

Clinical feature:
It is usually symptomless and discovered accidentally but sometime due to high estrogen level the presentation is amenorrhea followed by heavy period

Diagnosis:
- small
- not more than 5 cm
- mobile
- not tender
- unilateral
- unilocular
By u\s

Treatment:
Supportive Rx no surgery needed until complicated sometime oral contraceptive pills given to suppress the ovulation
2-corpus luteal cyst:
   Here ovulation occur and there will be enlargement of corpus luteum
   we see such cyst in early pregnancy and until 16 weeks
   No treatment is needed we keep it due to beneficial effect by
   secreting both estrogen and progesterone
3-hormone dependent luteal cyst:
   Occur in hydatiform mole and choriocarcinoma due to high level of
   H.C.G
   There will be theca luteal cyst it is usually bilateral
   No need for surgical removal it is usually regress due to treatment
   of H.M or choriocarcinoma by cytotoxic drugs

Pathological
1-neoplastic
2-non-neoplastic

Neoplastic:
1-surface epithelium either benign or malignant
2- C.T between the follicle either benign or malignant
3-teratoma
4- sex cord stromal tumour
5-germ cell tumour
6- tumour of special physiology and function:
   -feminizing
   -virilizing
   -both type
   Each ovarian tumour is a characteristic of each type and epithelial
   type usually occurring in middle and old age while teratoma and
   functional occur in young age