SNS COLLEGE OF ALLIED HEALTH SCIENCES

SNS Kalvi Nagar, Coimbatore - 35

Affiliated to Dr MGR Medical University, Chennai

DEPARTMENT OF B.SC .PHYSICIAN ASSISTANT

II YEAR UNIT:3

TOPIC – NORMAL LABOUR

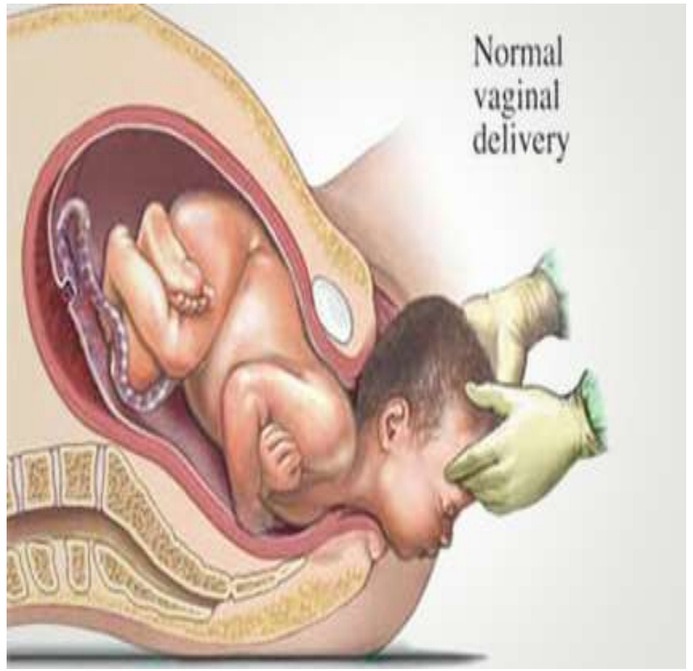
CASE HISTORY

22-year-old female presents with History of Second Gravida ,40 weeks of Gestation , C/o Labour pain since 4 hours . The patient also admitted to the Hospital , Her LMP is 01/03/2022 and xpected Date of Delivery is 08/12/2023, PV Examination shows Cx 1/5 dilated, and not effaced, Membrane intact,
FHR is 148/mt .., Advised to Give Enema and to Maintain Partograph.
How to manage the patient?

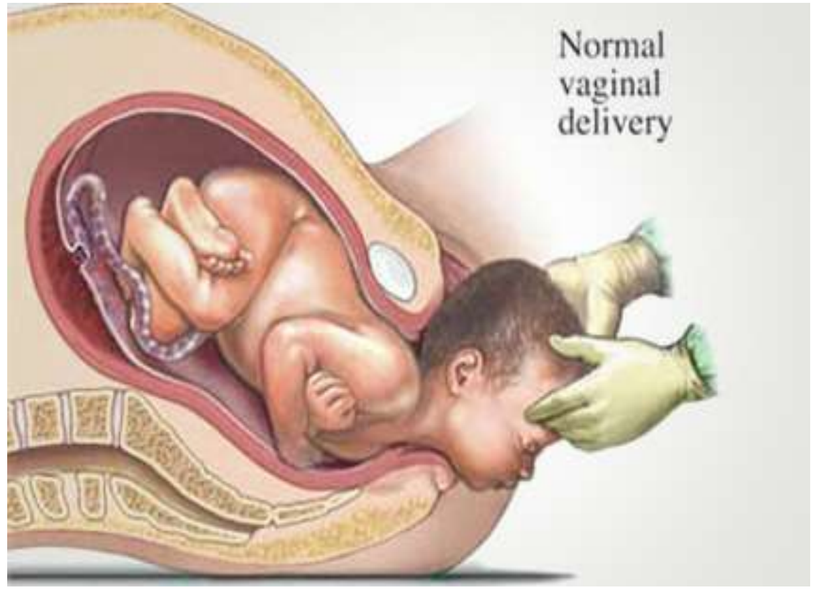
What is Labour

- Labour is the process by which a viable foetus i.e. at the end of 28 weeks or more is expelled or is going to be expelled from the uterus.

Series of events that takes place in the genital organs in an effort to expel theviable product of conception out of the womb (uterus) through the vagina in to the outer world



TERMINOLOGY



- TERMS
- Normal labour- Eutocia
- Abnormal labour- Dystocia
- Parturient- women in labour
- Parturition- process of giving birth

CRITERIA OF ABNORMAL LABOUR

ABNORMALLABOR(DYSTOCIA):

Anydeviationfromthedefinitionofnormallaboriscalled Abnormal labor.

Thus,labor in a casewithpresentation otherthan vertex or

havingsomecomplicationsevenwithvertex presentation

affecting the course of laboror modifying the nature of termination

adversely affecting the maternal and /or fetal prognosis is called abnormal labor.

CRITERIA OF NORMAL LABOR

NORMALLABOR(EUTOCIA):

Labor is called normal if itfulfills the following criteria.

(1)Spontaneous in onset and at term.
(2)With vertex presentation.
(3)Without undue prolongation.
(4)Natural termination with minimal aids.
(5)Without having any complications affecting the health of the mother and /or the baby.

NORMAL LABOUR

A normal labour has the following characteristics:

- Spontaneous onset (it begins on its own, without medical intervention) and at Term (40 wks)
- Rhythmic and regular uterine contractions
- Vertex presentation (the ‘crown’ of the baby’s head is presented to the opening cervix,)
- Vaginal delivery occurs without active intervention in less than 12 hours for a multigravida mother and less than 18 hours for a primigravida (first birth)
- No maternal or fetal complications.

CAUSES OF ONSET LABOUR

It is unknown but the following theories were postulated:

HORMONAL FACTORS

- Oestrogen theory:

During pregnancy, most of the oestrogens are present in a binding form. During the last trimester, more free oestrogen appears increasing the excitability of the myometrium and prostaglandins synthesis.

CAUSES OF ONSET LABOUR

- Progesterone withdrawal theory:

Before labour, there is a drop in progesterone synthesis leading to predominance of the excitatory action of oestrogens.

- Prostaglandins theory:

Prostaglandins E2 and F2α are powerful stimulators of uterine muscle activity. PGF2α was found to be increased in maternal and foetal blood as well as the amniotic fluid late in pregnancy and during labour.

CAUSES OF ONSET LABOUR

- Foetal cortisol theory:

Increased cortisol production from the foetal adrenal gland before labour may influence its onset by increasing oestrogen production from the placenta.

Mechanical factors

- Uterine distension theory:

Like any hollow organ in the body, when the uterus in distended to a certain limit, it starts to contract to evacuate its contents. This explains the preterm labour in case of multiple pregnancy and polyhydramnios.

Stretch of the lower uterine segment:

by the presenting part near term.

CLINICAL PICTURE OF LABOUR

Prodromal (pre-labour) stage

The following clinical manifestations may occur in the last weeks of pregnancy.

Shelfing:

It is falling forwards of the uterine fundus making the upper abdomen looks like a shelf during standing position. This is due to engagement of the head which brings the foetus perpendicular to the pelvic inlet in the direction of pelvic axis.

Lightening:

It is the relief of upper abdominal pressure symptoms as dyspnoea, dyspepsia and palpitation due to:

descent in the fundal level after engagement of the head and shelfing of the uterus.

CAUSES OF ONSET LABOUR

- Pelvic Pressure symptoms:
- **With engagement of the presenting part the following symptoms may occur:**
- Frequency of micturition,
- rectal tenesmus and
- difficulty in walking.
- Increased vaginal discharge.
- False labour pain

TRUE PAIN VS FALSE PAIN

TRUE PAIN	FALSE PAIN
Regular.	Irregular.
Increase progressively in frequency, duration and intensity.	Do not.
Pain is felt in the abdomen and radiating to the back.	Pain is felt mainly in the abdomen.
Progressive dilatation and effacement of the cervix.	No effect on the cervix.
Membranes are bulging during contractions.	No bulging of the membranes.
Not relieved by antispasmodics or sedatives.	Can be relieved by antispasmodics and sedatives.

STAGES OF LABOUR

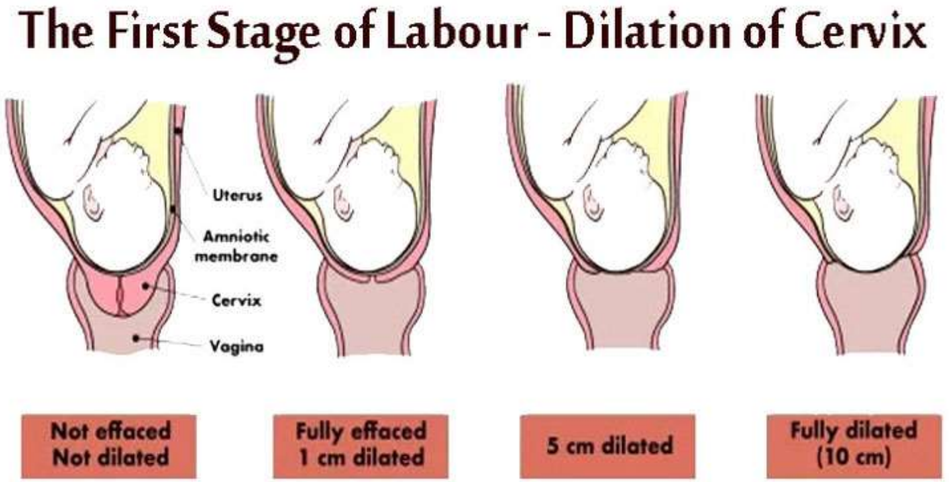
Labour is divided into four stages:

❖ First stage

It is the stage of cervical dilatation.

Starts with the onset of true labour pain and ends with full dilatation of the cervix i.e. 10 cm in diameter.

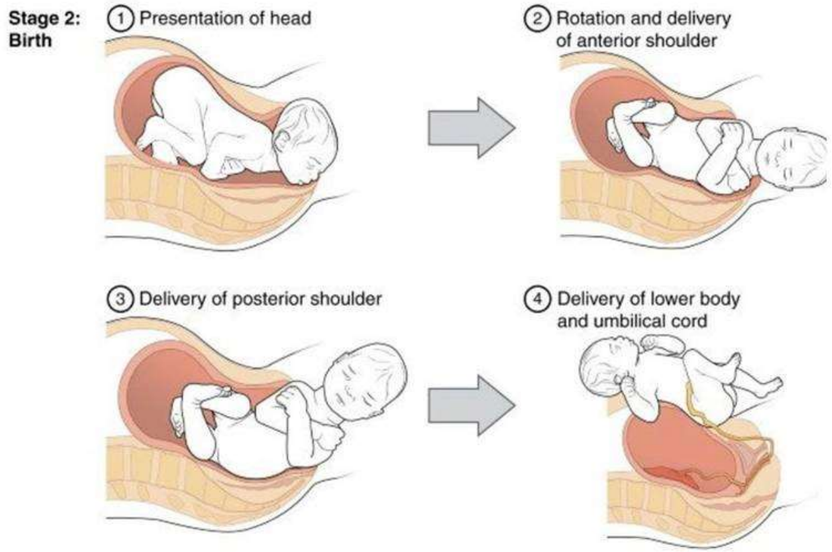
It takes about 10-14 hours in primigravida and about 6-8 hours in multipara.



STAGES OF LABOUR CONT.....

❖ Second stage

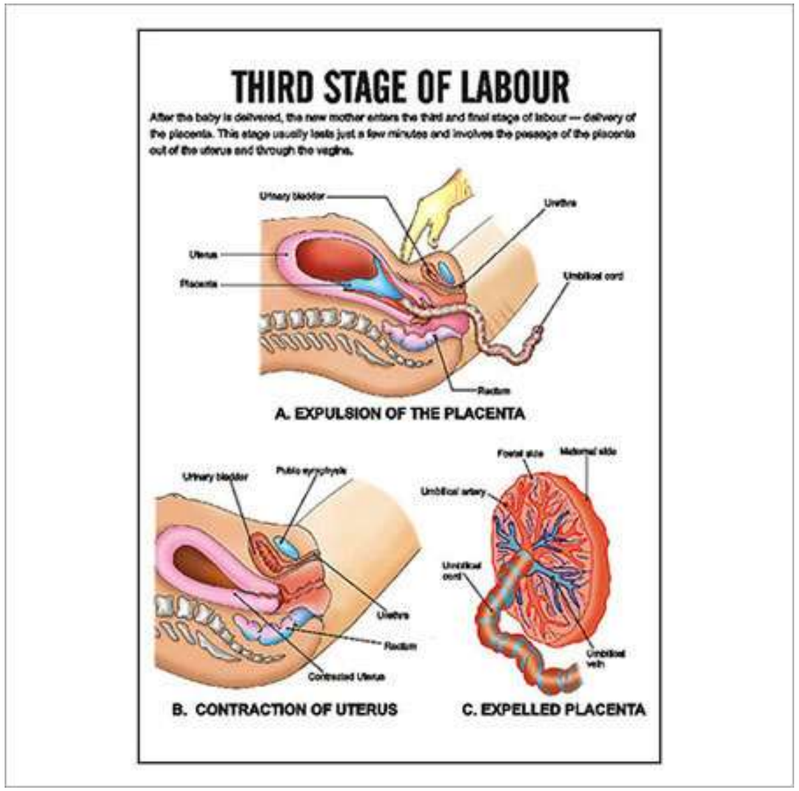
- It is the stage of expulsion of the foetus.
- Begins with full cervical dilatation and ends with the delivery of the foetus.
- Its duration is about 1 hour in primigravida and ½ hour in multipara.



STAGES OF LABOUR CONT .....

❖ Third stage

It is the stage of expulsion of the placenta and membranes.
Begins after delivery of the foetus and ends with expulsion of the placenta and membranes.
Its duration is about 10-20 minutes in both primi and multipara.



STAGES OF LABOUR CONT.....

❖ Fourth stage

It is the stage of early recovery.

Begins immediately after expulsion of the placenta and membranes and lasts for one hour.

During which careful observation for the patient, particularly for signs of postpartum haemorrhage is essential.

Routine uterine massage is usually done every 15 minutes during this period.

Premonitory signs of labor

Cervical changes

softening and dilationwith descent of the presenting part into the pelvic.

This stage occurs one month to one hour before actual labor.

The cervix becomes shortened and thinned segment

Premonitory signs of labor

- ✓ Lightening:
- ✓ occurs when the fetal presenting part begins to descend into the maternal pelvic.
- ✓ The uterus lowers and moves into a more anterior position. this change will cause:
- ✓ Breathing becomes easier
- ✓ Increased pelvic pressure Cramping and low backache
- ✓ Lower extremities edema
- ✓ Increased vaginal secretion
- ✓ More frequent urination
- ✓ In PG it occurs 2 weeks ore more before labor.
- ✓ In MP it occurs during labor

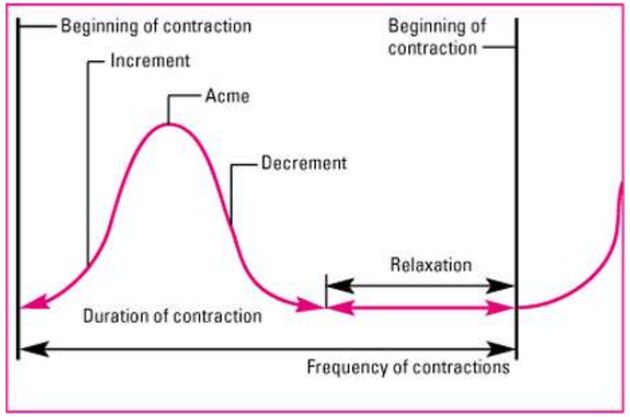
Premonitory signs of labor

Spontaneous rupture of membrane:
one in four women experience SROM before onset of labor
. This reduces the capacity of the uterus, thickens theuterine wall, and increases uterine irritability.
Labor usually follows.
At term, 90% will be in labor within 24 h after membrane rupture

Physiology of First stage

UTERINE CONTRACTION IN LABOR:

Throughout pregnancy
there is irregular involuntary spasmodic uterine contractions
which are painless (Braxton Hicks) and have no effect on dilatation of the cervix. The character of the contractions changes
with the onset of labor. While there are wide variations in
frequency, intensity and duration of contractions, they remain
usually within normal limits in the following patterns.



Physiology of First stage

- Intensity:

The intensity of uterine contraction

describes the degree of uterine systole.

The intensity

gradually increases with advancement of labor until it

becomes maximum in the second stage during

delivery of the baby.

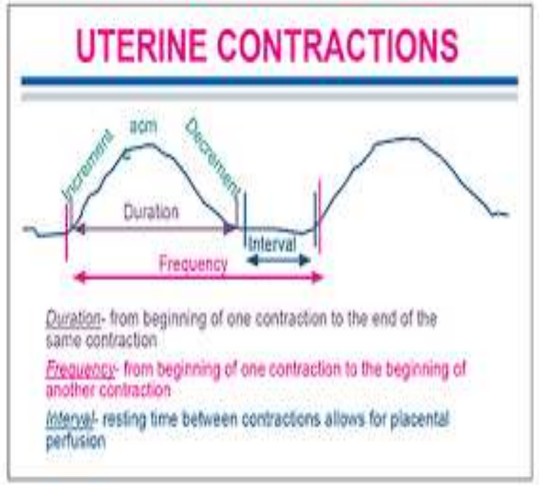
PHYSIOLOGY OF FIRST STAGE

- Intrauterine pressure is raised to 40–50 mm Hg during first stage and about 100–120 mm Hg in second stage of labor during contractions.
- In spite of diminished pain in third stage, the intrauterine pressure is probably the same as that in the second stage. The diminished pain is due to lack of stretching effect.

PHYSIOLOGY OF FIRST STAGE

Duration: In the first stage, the contractions last for about 30 seconds initially but gradually increase in duration with the progress of labor. Thus in the second stage, the contractions last longer than in the first stage.

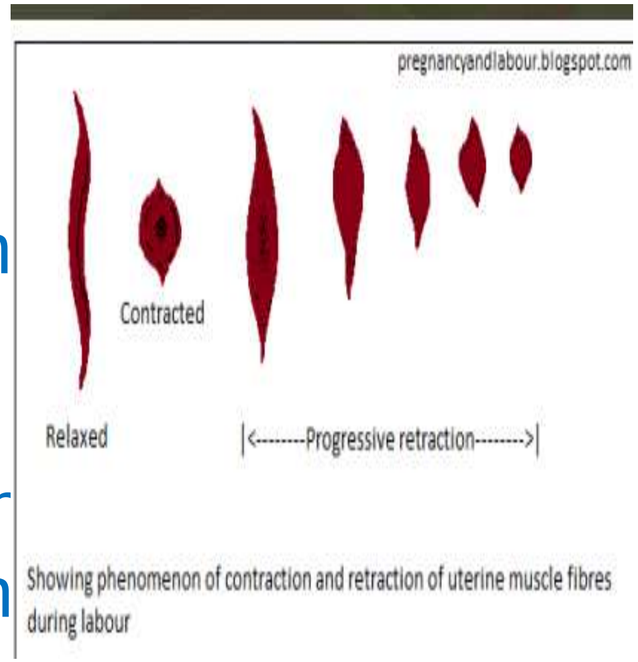
Frequency: In the early stage of labor, the contractions come at intervals of 10–15 minutes. The intervals gradually shorten with advancement of labor until in the second stage, when it comes every 2–3 minutes.



PHYSIOLOGY OF FIRST STAGE

RETRACTION: Retraction is a phenomenon of the uterus in labor in which the muscle fibers are permanently shortened. Unlike any other muscles of the
body, the uterine muscles have this property to becom shortened once and for all.
Contraction is a temporary reduction in length of the fibers, which attain their full length during relaxation. Ir contrast, retraction results in permanent shortening an the fibers are shortened once and for all.

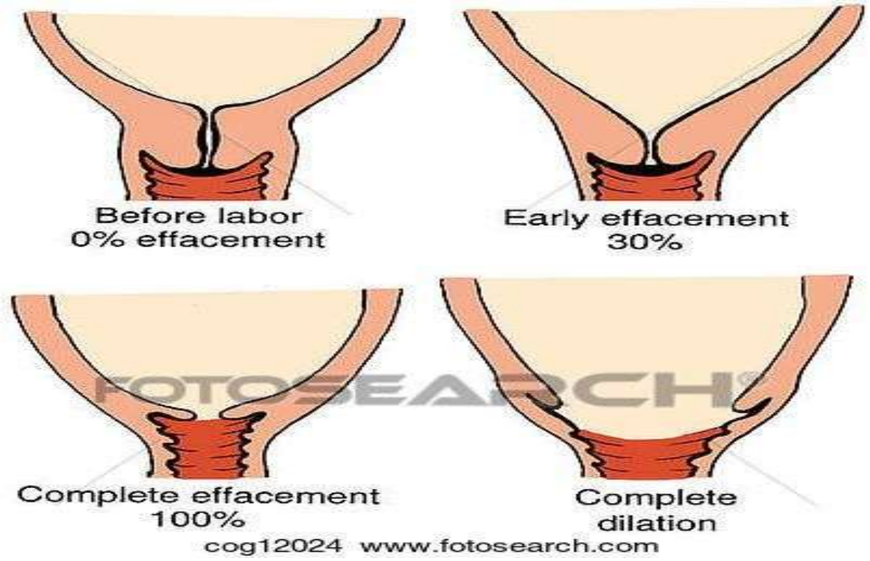
RETRACTION



Showing phenomenon of contraction and retraction of uterine muscle fibres during labour

PHYSIOLOGY OF FIRST STAGE

The first stage is chiefly concerned with the preparation of the birth canal so as to facilitate expulsion of the fetus in the second stage. The main events that occur in the first stage are— dilatation and effacement of the cervix and full formation of lower uterine segment.



PHYSIOLOGY OF FIRST STAGE

DILATATION OF THE CERVIX: Prior to the onset of labor, in the prelabor phase (Phase-1) there may be a certain amount of dilatation of cervix, especially in multiparae and in some primigravidae.

Actual Factors Responsible are:

- Uterine contraction and retraction
- Fetal axis pressure
- Bag of membranes

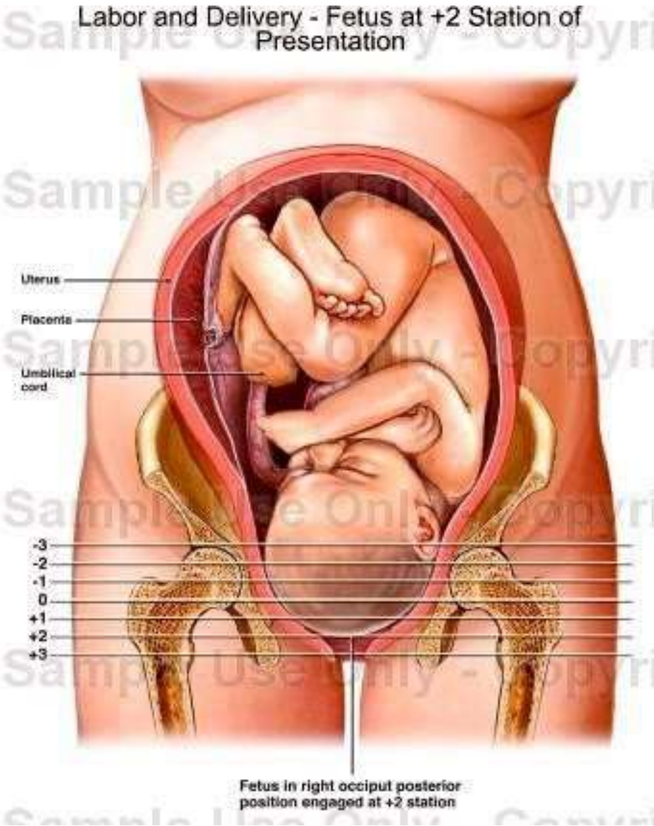
PHYSIOLOGY OF FIRST STAGE

The longitudinal muscle fibers of the upper segment are attached with circular muscle fibers of the lower segment and upper part of the cervix in a bucket- holding fashion. Thus, with each uterine contraction, not only the canal is opened up from above down but also it becomes shortened and retracted. There is some co- ordination between fundal contraction and cervical dilatation called “polarity of uterus” . While the upper segment contracts, retracts and pushes the fetus, the lower segment and the cervix dilate in response to the forces of contraction of upper segment.

PHYSIOLOGY OF FIRST STAGE

Fetal axis pressure:

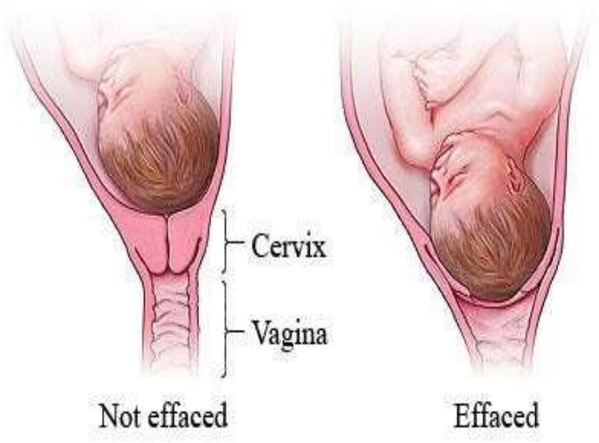
In labor with longitudinal lie and with well-fitted (flexed) fetal head on the cervix, fetal vertebral column is straightened by the contractions of the circular muscle fibers of the body of the uterus. This allows the fundal strong contraction force to be transmitted through the fetal podalic pole and vertebral column to the well-fitted fetal head. This causes mechanical stretching of the lower segment and opening up (dilatation) of the cervical canal.



PHYSIOLOGY OF FIRST STAGE

EFFACEMENT OR TAKING UP OF CERVIX:

Effacement is the process by which the muscular fibers of the cervix are pulled upward and merges with the fibers of the lower uterine segment. The cervix becomes thin during first stage of labor or even before that in primigravidae. In primigravidae, effacement precedes dilatation of the cervix, whereas in multiparae, both occur simultaneously. Expulsion of mucus plug is caused by effacement.

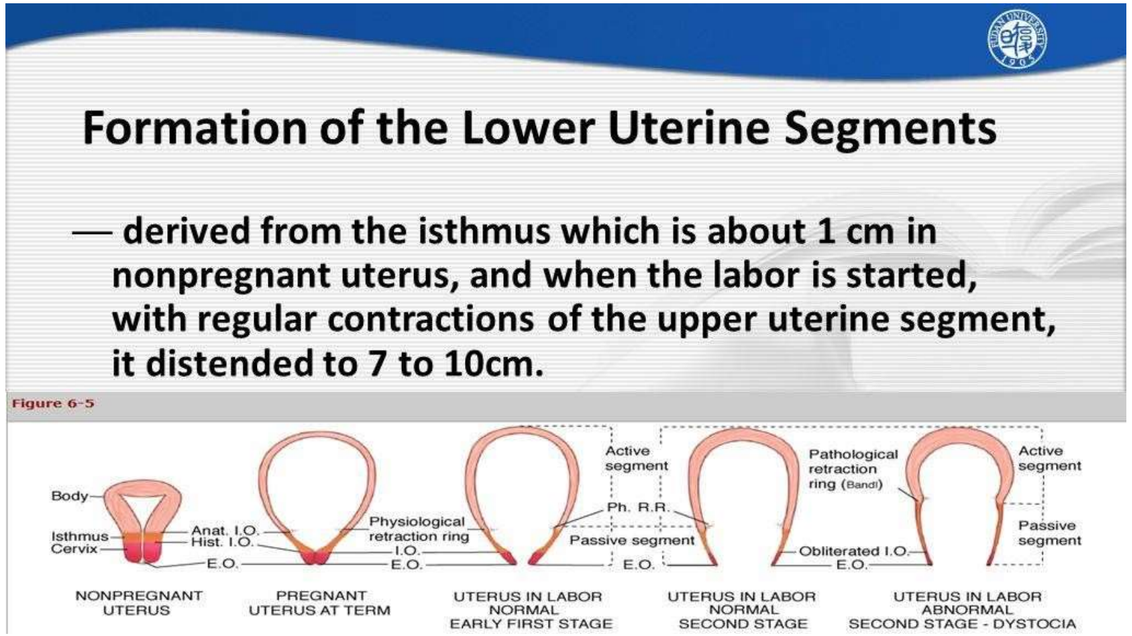


PHYSIOLOGY OF FIRST STAGE

LOWER UTERINE SEGMENT: Before the onset of labor, there is no complete anatomical or functional division of the uterus. During labor the demarcation of an active upper segment and a relatively passive lower segment is more pronounced. The wall of the upper segment becomes progressively thickened with progressive thinning of the lower segment. This is pronounced in late first stage, especially after rupture of the membranes and attains its maximum in second stage.

PHYSIOLOGY OF FIRST STAGE

A distinct ridge is produced at the junction of the two, called physiological retraction ring which should not be confused with the pathological retraction ring—a feature of obstructed labor.



MANAGEMENT OF FIRST STAGE OF LABOUR

General considerations:

Labor events have got great psychological, emotional and social impact to the woman and her family.

The caregiver should be tactful, sensitive and respectful to her.

Continuous emotional support during labor may reduce the need for analgesia and decrease the rate of operative delivery.

Privacy must be maintained.

She is explained about the events from time to time.

Comfortable environment, skill and confidence of the caregiver and appropriate support are all essential so that a woman can give birth with dignity.

MANAGEMENT OF FIRST STAGE OF LABOUR

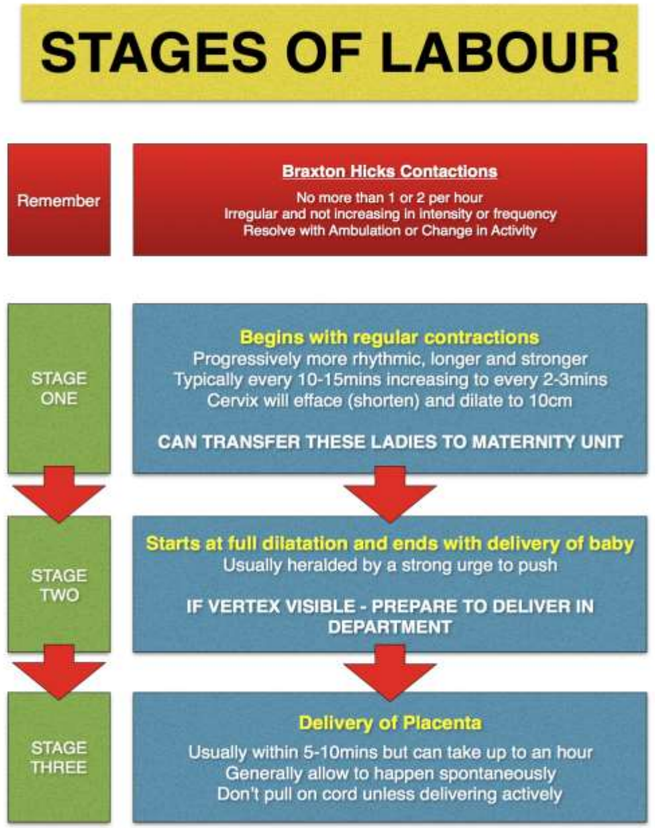
Management of normal labor

AIMS :

at maximal observation with minimal active intervention.

The idea is to maintain the normalcy

T o detect any deviation from the normal at the earliest possible moment.



MANAGEMENT OF FIRST STAGE OF LABOUR

ANTISEPTICS AND ASEPSIS:

surgical cleanliness and asepsis on the part of the patients and the attendants involved in the delivery process are to be maintained.

Patient care:

Shaving or hair clipping of the vulva is done.

The vulva and the perineum are washed liberally with soap and water and then with 10% Dettol solution or Hibitane (chlorhexidine).

MANAGEMENT OF FIRST STAGE OF LABOUR

The woman should take a shower or bath, wear laundered gown and stay mobile.

Throughout labor she is given continued encouragement and emotional support.

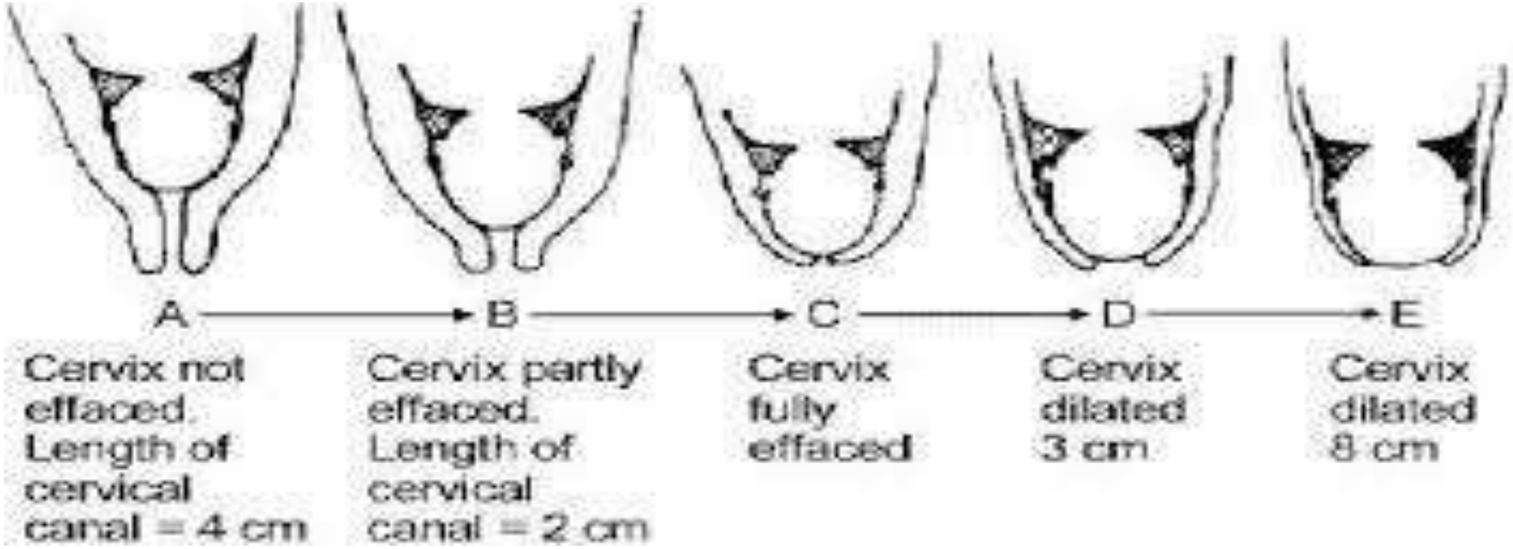
Antiseptic and aseptic precautions are to be taken during vaginal examination and during conduction of delivery.

MANAGEMENT OF FIRST STAGE OF LABOUR

VAGINAL EXAMINATION IN LABOR:

First vaginal examination should be done by a senior doctor to be more reliable and informative.

The examination is done with the patient lying in dorsal position.



MANAGEMENT OF FIRST STAGE OF LABOUR

PRELIMINARIES:

(1) Toileting—Hands and forearms should be washed with soap and running water. The procedure should take at least 3 minutes.

(2) Sterile pair of gloves is donned.

(3) Vulval toileting is performed. Vulva should once more be swabbed from before backward with antiseptic lotion like 10% Dettol.

(4) Gloved middle and index fingers of the right hand smeared liberally with antiseptic cream like Cetavlon are introduced into the vagina after separating the labia by two fingers of the left hand.

MANAGEMENT OF FIRST STAGE OF LABOUR

(5) Complete examination should be done before fingers are withdrawn. (6) Vaginal examination should be kept as minimum as possible to avoid risks of infection.

The following informations are to be noted and recorded carefully (Partograph):

Degree of cervical dilatation in centimeters.

It is marked with a cross (×) on the partograph at 4 cm dilatation.Degree of effacement of cervix.

MANAGEMENT OF FIRST STAGE OF LABOUR

Status of membranes and if ruptured—color of the liquor. Color of the liquor in the partograph is recorded as—

I: membranes intact;

R: membranes ruptured;

C: liquor clear;

M: liquor meconium stained;

B: liquor blood stained.

Presenting part and its position by noting the fontanels and sagittal suture in relation to the quadrants of the pelvis.

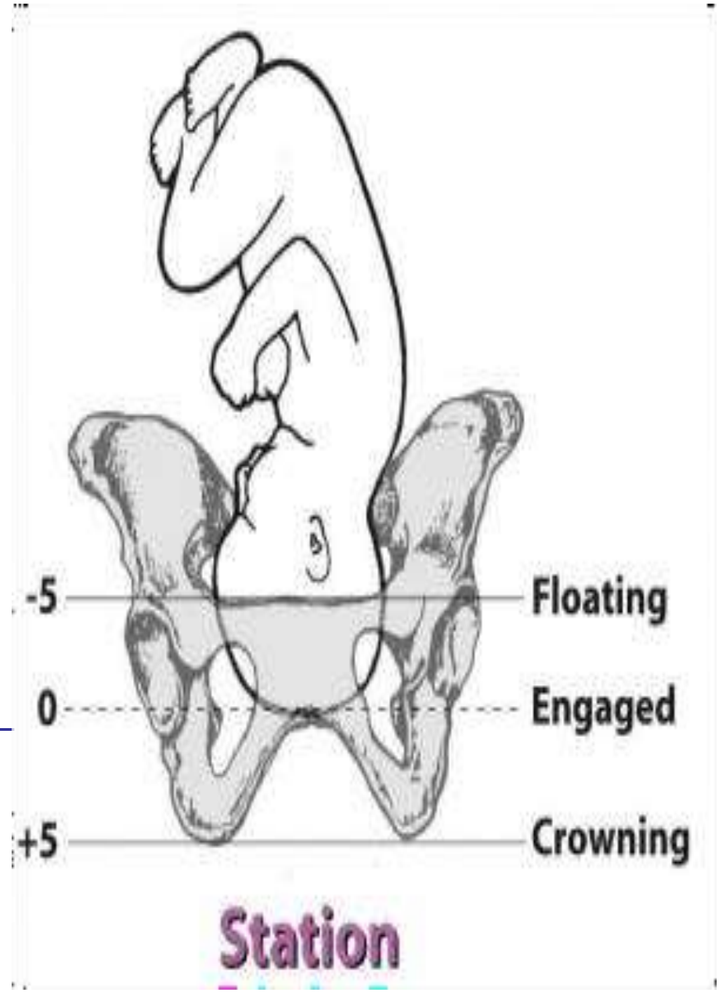
Lambda or Posterior fontanel is recognized by the big “Y” shaped three suture lines. Bregma or anterior fontanel is recognized by diamond-shaped area and the presence of four suture lines.

MANAGEMENT OF FIRST STAGE OF LABOUR

Station of the head in relation to ischial spines.

Spines are the most prominent bony projections felt on internal examination. The level of ischial spines is the halfway between the pelvic inlet and outlet. This level is known as station zero (0).

The station is said to be "O" if thepresenting part is at the level of the spines. The station is stated in minus figures, if it is above the spines (–1 cm, –2 cm, –3 cm, –4 cm and –5 cm) and in plus figures if it is below the spines (+1 cm, +2 cm, +3 cm, +4 cm and +5 cm).



MANAGEMENT OF FIRST STAGE OF LABOUR

PRINCIPLES:

(1) Noninterference with watchful expectancy so as to prepare the patient for natural birth.

(2) To monitor carefully the progress of labor, maternal conditions and fetal behavior so as to detect any intrapartum complication early.

PRELIMINARIES: This consists of basic evaluation of the current clinical condition. Enquiry is to be made about the onset of labor pains or leakage of liquor, if any. Thorough general and obstetrical examinations including vaginal examination are to be carried out and recorded. Records of antenatal visits, investigation reports and any specific treatment given, if available, are to be reviewed.

MANAGEMENT OF FIRST STAGE OF LABOUR

ACTUAL MANAGEMENT:

- General—(a) Antiseptic dressing (b)Encouragement, emotional support and assurance are given to keep up the morale. (c) Constant supervision is ensured.
- Bowel
- Rest and ambulation Diet
- Bladder care
- Relief of pain- common analgesic drug used is pethidine 50–

100 mg intramuscularly when the pain is well established in the active phase of labor. If necessary, it is repeated after 4 hours. Pethidine is an effective analgesic as well as a sedative.

MANAGEMENT OF FIRST STAGE OF LABOUR

Metoclopramide 10 mg IM is commonly given to combat vomiting due to pethidine. Pethidine crosses the placenta and is a respiratory depressant to the neonate. The drug should not be given if delivery is anticipated within 2 hours. Assessment of progress of labor and partograph recording.

Abdominal palpation—

Uterine contractions as regard the frequency, intensity and duration are assessed.

Pelvic grip

Shifting of the maximal intensity of the fetal heart beat downward and medially.

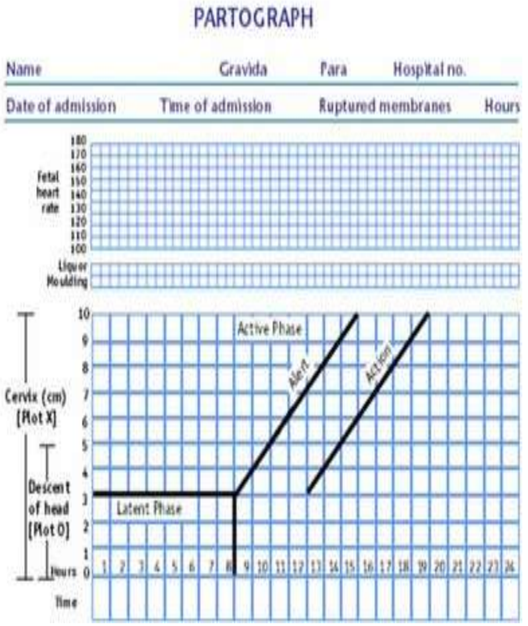
MANAGEMENT OF FIRST STAGE OF LABOUR

To note the fetal well-being: Fetal heart rate (FHR) along with its rhythm and intensity should be noted every half hour in the first stage and every 15 minutes in second stage or following rupture of the membranes.

Normal fetal heart rate ranges from 110 to 150 per minute.

TO WATCH THE MATERNAL CONDITION: Routine checkup includes: (a) to record 2 hourly pulse, blood pressure and temperature; (b) to observe the tongue periodically for hydration (c) to note the urine output, and

(d) IV fluids, drugs.



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