

The stages of labor :

Labor can be divided into three stages:

The first stage:

This describes the time from the diagnosis of labor to full dilatation of the cervix [10 cm], its subdivided into two phases :

a. the latent phase: the time between the onset of labor and (3-4 cm) dilatation, during which the cervix becomes fully effaced.

Effacement : is a process by which the cervix shorten in length as it is included in the lower uterine segment. the effacement may begins weeks before the onset of labor and complete only at the end of the latent phase, the cervical os can not usually dilated until effacement is complete. Effacement and dilatation is of consecutive events in the nulliparous but may occur simultaneously in the multiparous women. Dilatation is expressed in cm between [0 – 10 cm]. The duration of the latent phase is variable but usually lasts between [3 – 8 hours] being shorter in multiparous women.

b.the active phase: the time between the end of the latent phase (3-4 cm) dilatation and full dilatation of the cervix [10 cm] it's also variable in length, usually lasting [2 – 6 hours], but its again shorter in multiparous women. Cervical dilatation occur here at [1 cm/hour] or more in a normal labor but its abnormal if occur at less than[1 cm /hour].

The second stage:

This describes the time from the full dilatation of the cervix to delivery of the fetus. It's also subdivided into two phases :

a.the passive phase: describes the time from the full dilatation of the cervix and the onset of involuntary expulsive contraction. There is no maternal urge to push and fetal head still relatively high in the pelvis .

b.the active phase: describes the time of involuntary expulsive contraction when there is maternal urge to push and fetal head is low causing a reflex need to "bear down".

The duration of second stage no more than two hours in nulliparous and one hour in multiparous.

The third stage:

This is the time from delivery of fetus until delivery of the placenta. The placenta usually delivered within few minutes if more than [30 – 60 min] is consider abnormal.

The fourth stage :

This is two hour after the third stage for observation of any complications.

Management of normal loabar :

History : the following points should be look for:

- 1) **contractions:** the frequency, duration and the strength and when they began.
- 2) **membrane:** whether rupture ? the colour and amount lost.
- 3) **the vaginal bleeding or discharge.**
- 4) **the fetal movement.**
- 5) **details of previous births.**
- 6) **Medical disorders. Like PIH and IUGR.**

Examination :

i-general = look for the BMI , vital signs and sample of urine tested for protein, blood, ketones, glucose and nitrates.

ii-abdominal =look for scars of previous surgery and determine the lie {longitudinal, transverse or oblique} and the presentation whether cephalic or breech. If cephalic whether engaged or not. The head that remains high and unengaged is poor prognostic sign for delivery. If there is any doubt so

U/S is done. Also assess the contractions and is done by palpating the uterus directly not just by CTG.

iii-vaginal =the cervix is examined for dilatation, effacement and application to the presenting part. The dilatation is estimated digitally in cm. the length of cervix is recorded [the cervix at 36 wks is about 3cm long]. It shorten by effacement and about[4cm] the cervix is fully effaced.

the station which define as the relation of lowest part of the head to the ischial spines is determine and the position is also determine and the condition of membrane is noted, if ruptured the colour and amount is also noted copious amount clear fluid is a good prognostic feature. Scanty blood stained or meconium stained fluid is a warning sign for fetal compromise.

General advice :

a=women who are found not in established labor should offered appropriate analgesia and support , most can safely go home, to return when the contractions increased in strength and frequency.

b=the history and examination act as initial screen for maternal and fetal risk and abnormal lobar, if all are normal reassure the women and put them under midwife care, if risk factors identified so obstetric team should involved.

c=the PR is measured every[hour]and the temp, and the BP every [4 hours] ,the frequency of contractions are recorded every [30 min] and VE performed every [4 hours] unless other factors are present and needed to done early. the urine should be tested for ketones and protein

d= in the second stage the PR, BP and VE perform hourly.

e=the FHR is auscultated with pinard stethoscope or by hand held Doppler device at initial assessment and should be listened to at least a [1min] immediately after a contraction and repeated every[15 min] during first stage and at least[5 min] in the second stage.

The partogram :

It is a graphic record of labor and this allow visual assessment of the rate of cervical dilatation and comparison with an expected norm, and other observations entered to the chart, including the frequency and strength of contractions, the descent of the head, the amount and colour of the amniotic fluid and maternal BP,PR and temp.

Management during first stage:

a- women in the latent phase of labor should encourage to mobilize and manage away from labor suite may go home to return later when contractions are stronger or more frequent encouragement and reassurance are very important, intervention during this phase is best avoided unless there is a risk factors.

b-simple analgesia are preferred over nitrous oxide and epidural there is no reason to restrict eating and drinking, lighter foods and clear fluid may be better tolerated. If the women becoming dehydrated so I.V fluid to prevent ketosis, which can impair uterine contractions, light diet is acceptable if there is no risk factors for GA and if they have no opioid analgesia .

c-shaving and enema are not needed and antacids need only to given for those with risk for GA and who have opioid analgesia.

d-VE are performed every [4 hours] to determine the active phase then after that the time decided according to the case, the lower limit of normal progress is[1 cm/hour] dilatation every two hours once the active phase has been reached, the descent of the presenting part should be recorded at each VE.

e- state of membrane should noted whether intact or ruptured if intact so no need to rupture if lobar is satisfactory progress.

f-women should received one-to-one care{ midwife} and should not left alone and be able to adopt any position they found most comfortable , mobility during labor and standing upright encourage progress.

g-active management included one-to-one care { midwife }, two hourly VE and early ARM and use of oxytocin.

Management during the second stage :

a-The first sign of active phase of second stage is maternal urge to push when the mother starts expulsive efforts using her abdominal muscles with valsalva manoeuvre to bear down. The full cervical dilatation is confirmed by VE.

b-the women should discourage from lying supine and should adopt any position they want like left lateral, squatting, standing and on all four.

c-maternal and fetal surveillance intensifies because fetal acidemia may accelerate and maternal exhaustion and ketosis increase in line with duration of active pushing.

d-use of regional analgesia may interfere with the urge of push and is usually delayed for at least an hour.

e-as the head comes down, it distends the perineum and anus a pad may be used to support the perineum and cover the anus while the other hand is used to maintain flexion and prevent sudden deflexion to control the rate of delivery of the head this to slow perineal distension so minimizing tears.

f-an episiotomy may performed if the perineum is threaten to tear but is not routinely used.

g-with the next contraction gentle traction guides the head toward the perineum until the anterior shoulder is delivered under subpubic arch gentle traction applied upwards and anteriorly help to deliver the posterior shoulder and the reminder of the trunk.

Immediate care of the neonate :

The infant after born is delivered directly to maternal upper abdomen and there is no need for immediate clamping of cord because about [80 ml]of

blood transferred from the placenta to the baby so reducing the chance of neonatal anemia.

The baby head is kept dependant to allow mucus in the respiratory tract to drain and suction is applied if really needed.

After cutting the cord the baby's Apgar score is calculated at [1, 5, 10 min] of age immediate skin to skin contact between mother and baby will help bonding and promote further release of oxytocin which enhance contractions. The baby should be dried and covered with a warm blanket or towel and initiation of breast feeding within the first hour of life. Routine newborn measurements of HC, Wt and temp, are performed and the first dose of vitamin K is given and general examination for any abnormalities is done and wrist label attached for identification.

Management of the third stage :

It is normally takes between [5 to 10 min]. separation of placenta occurs because of the reduction of volume of uterus due to uterine contraction and retraction {shortening } of the muscle fibers. A cleavage plane develops within the decidua basalis and the separated placenta lies free in the lower segment of the uterine cavity.

Signs of separation are:

i-lengthening of cord protruding from the vulva.

ii-small gush of blood from the placental bed which normally stops quickly due to retraction of the muscle fibers.

iii-rising of the fundus to above the umbilicus.

iv-the fundus becomes hard and globular compared to the broad, softer fundus prior to separation.

Active management:

Modern active management of the third stage includes:

i-i.m injection of ten IU of oxytocin given at delivery of anterior shoulder or immediately after delivery of the baby.

ii-early clamping and cutting of umbilical cord.

iii-controlled cord traction. When the signs of placental separation are recognized this procedure is used to expedite delivery of the placenta. When contraction is felt, the left hand elevate the fundus and the right hand grasps the cord and exert steady traction so the placenta delivered gently care being taken to peel off all membranes with twisting motion.

In two % of cases the placenta not expelled by this methods if no bleeding occurs, another trial of CCT is made after [10 min], if this fail so the placenta is retained and require manual removal under GA or LA in the operating theatre. Direct injection of oxytocin into the umbilical vein may bring delivery of the placenta while preparing for theatre.

The benefit of active management of third stage of labor: Reduce the rate of PPH, , reduce length of third stage , reduce mean blood loss and postnatal anemia, reduce the need for blood transfusion.

Physiological management:

The placenta delivered by maternal effort and no uterotonic drugs is given, it is associated with heavy bleeding and it used by low risk women but if there is severe bleeding and placenta not delivered within one hour so active management needed.

After that the placenta should inspected for any missing cotyledons, if these suspected so manual removal of the placenta under U/S guidance is arranged . finally the vulva should be inspected for any tears or lacerations. Minor tears not require suturing but larger tears require repair.

Immediate care after delivery:

Most complications of third stage such as PPH, uterine inversion or hematoma formation occur in the first two hours after delivery so the women are kept in the delivery unit during this time to observe PR, BP, temp,

uterine size and contractions. If there is increase risk of PPH so oxytocin [40unit in 500ml N/S] is given prophylactic ally for[3-4 hours].

Encouragement for skin to skin contact and the mother and baby should not be separated in the first hour and breast feeding should be initiated in the first hour.

If there is no complications during these two hours so the mother transferred to post natal wards and can go home after [3-4 hours]of observation.

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