Course Name :An Overview on Maternal Health Antenatal, Intranatal and Postnatal Care

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Institute Name: IIT Kharagpur

Week:09

Lecture:02

Monitoring of Normal Labour

Hello students. I welcome you all to our NPTEL online certified course on the topic An Overview on Maternal Health, the Antenatal, Intranatal and Postnatal Care. I am Dr. Barnali Ghosh, an Obstetrician and Gynecologist working as Assistant Professor at B.C.Roy Multispeciality Hospital and Medical Research Centre, IIT Kharagpur. Today we are going to discuss the monitoring of normal labour as well as the management in the different stages of labour. So the concepts covered in today's class are identification of a mother during labour, right.

So whether the labour has already started in the mother, we need to identify that. Then manage accordingly, right. So whether she is in first stage or second stage or third stage or fourth stage, management will differ and it is directed or it is guided by certain principles which we will look into. Today we will discuss the first and second stage of labour.

So the keywords for today's class are monitoring of mothers in labour as well as the management of the stages of labour. Now coming to the basic principle in management of normal labour, right. So from the word itself it is a case of normal labour where everything is progressing normally. So that will include more of observation. So it includes maximum observation just to observe whether the progress of labour is spontaneous and you know it is going in the normal, normally, right.

It is progressing normally with minimal active intervention. We are not going to intervene unnecessarily. Just reassure that the status of mother as well as the fetus is reassuring, right. So they are both in good condition during the process of labour and ultimately resulting in the birth of a healthy baby as well as a healthy mother. So the idea, idea is to maintain normalcy and to detect any deviation from this normal path at the earliest possible moment.

Whenever we see any deviation from the normal labour, whenever there is any chance of labour dystocia or abnormal labour or prolonged labour, then we need to intervene and correct the disorder, right. So coming to the term Emergency Medical Treatment and Labour Act. So

what does it tell? You need to first assess, right. You need to first assess and you know confirm that the mother is in labour, confirm the mother is in true labour, right. And then to monitor her, right.

If any abnormality, refer to higher centre, if all normal, then just observe no need for intervention, right. And say she is in false labour. So assess the maternal and fetal condition, if reassuring, then send the mother to home, right. So that means, she is in false labour pain and ask her to visit again when true labour pain starts. So you need to educate the mother, how to know that it is a case of true labour pain that we will read in our subsequent slides.

So that is the Emergency Medical Treatment and Labour Act. So first the mother is assessed, if there is any abnormality or labour dystocia or any difficulty in the progression of labour, we need to know refer her at the earliest to a higher centre. And if all is normal, then we will just observe for the normal progress of labour. Now how to identify whether the mother is in labour or not, right. So how to identify from the uterine contraction.

Uterine contractions become more rhythmic, more regular and it will be more than 12 uterine contraction in 1 hour, right. So each contraction should come at an interval should come at 5 minutes apart, right. So they come every 5 minutes for next 1 year, 1 hour, sorry. So that says that yes true labour pain has started and as we know all other features of true labour pain that is you know there will be associated with true labour pain. So it will be associated with show, it will be associated with cervical dilatation.

Cervical dilatation patient cannot assess herself, but there will be some blood mixed mucus secretion per vagina, also there will be certain your radiation of pain to the thighs that will suggest that yes true labour pain has already started, right. So the mother is now will again visit the clinic for admission and it is preferable to get admitted in the early stages of onset of labour rather than just when eminent delivery is eminent, right because if it is you know from the early onset of labour we can monitor her more meticulously. So coming to the evaluation, the initial evaluation at the time of admission. So mother is getting admitted in her true labour pain in the antenatal ward, what to do at that time. So what are the initial evaluation for mother? Vitals of the mother.

So we assess the pulse rate, blood pressure, temperature, respiratory rate, right. So we need to assess all these and any deviation, right. So if there is tachycardia that means there may be underlying heart disease, it may also be any case of anemia in pregnancy or a case of dehydration, right or a case of infection that has resulted in you know raised temperature causing high pulse rate or tachycardia. So you need to you know exclude all other causes. Blood pressure very very important because it will you know help in assessing PIH, pregnancy induced hypertension, eclampsia and preeclampsia, right.

Temperature, why? Because yes any chance of infection in the form of chorioamnionitis, right. So amnionitis all these can be excluded. Respiratory rate, why respiratory rate is important? Because it you know signifies underlying heart disease, it signifies any cardiopulmonary disease, right. So pulmonary disease, any case of pulmonary edema in PIH, right. So all these vitals should be at first taken note of.

Now coming to the obstetrical examination, firstly we will go for the Leopold maneuvers, right. The fundal height and the four obstetrical grips, we know here the fundal grip, right. So fundal grip, lateral grip and the pelvic and pawlick's grip. So all these grips will help to know to note the lie of the fetus, whether the fetus is longitudinal in life, the presentation, whether it is cephalic or you know any other than cephalic like malpresentation. And if it is cephalic, what is the attitude, right? In case of well flexed, it is vertex presenting part is the vertex.

But it may so happen that the fetal head is slightly extended or fully extended or partially deflexed all these are no changes in attitude. So that can be assessed and also very importantly the you know position of the occiput, whether occiputoanterior or occiputoposterior that is cases of malpositions can also be assessed. And all these is required because just before the start of labor, we need to know whether it is a case of normal labor or not, right. So we need to go for the four obstetrical grips and then fetal heart rate auscultation by Doppler. Handheld Doppler we use by say we can also do by USG, we can go for Fetoscope, right.

So these are now fetal heart rate assessment. Also sometimes not routinely done, we go for continuous electronic fetal monitoring CTG, right. So, this is continuous fetal heart rate monitoring or cardiotocography, right. So, this will give us an idea of the fetal heart rate, continuous fetal heart rate monitoring as well as uterine contractions. Both can be seen in the graphical presentation in CTG machine, right.

So first mother, then fetus. Now coming to know the status of the membranes, whether the membranes have ruptured or not. So an assessment of the membranes. So how to go about that and why it is important, right. So the you know if there is say rupture of membranes before onset of labor.

So that is called as premature rupture of membrane or PROM, right. So or say rupture of membrane most ideally takes place in the second stage of labor after full cervical dilatation when the fetal head has descended well down and it is you know occupying the lower uterine segment. That time there is rupture of membrane, but if the membranes have ruptured earlier in the first stage, right or before the onset of labor that is called as premature rupture of membrane. And this you know we need to assess why because of 3 conditions. Number 1, there is a chance of cord prolapse.

So we need to exclude any cord prolapse. Number 2, there is a chance that this mother will go into labor, right. So there will progress to active labor at an earlier at much more earlier time, right. So the latent phase will decrease because due to the rupture of membrane there will be release of prostaglandin that will help in uterine contraction resulting in rapid progression of labor. And number 3, there is a chance of infection due to the rupture of membrane, due to the draining liquor there will be chance of infection, chance of Chorioamnionitis and we need to monitor both the mother in terms of temperature, in terms of respiratory rate as well as the fetus in the form of say the liquor, color or the temperature of the liquor, the intra vaginal temperature which will all indicate whether there is no Chorioamnionitis and any chance of fetal infection.

If that is so, we actually give a dose of IV antibiotics, right. Ampicillin or amoxicillin is given to mothers with rupture of membrane in the early stage of labor. So, this is important. Now coming to per vaginal examination, another thing is in case of rupture of membrane the per vaginal examination should be done in aseptic condition, should be in complete aseptic condition. And mostly PV is not done because that will invite infections, right.

And even if we go for per speculum examination that will be done under strict aseptic condition. Now coming to per vaginal examination immediately at the time of admission we go for per vaginal examination for cervical assessment. What we do? We look for cervical dilatation. What is the dilatation of the cervix? We start with the examining finger from one rim or one side of the cervical rim and we sweep the finger to the other side and we assess the cervical dilatation. We go for cervical effacement calculation.

So, what is the length of the cervix? So, depending upon you know comparing the length of the cervix in the say before the onset of labor and then again you know comparing it with the onset of labor. So, what percentage has been taken up? So, it may be 50 percent effaced that means, the length now has become half length of the cervix is half that means, half of the cervix has been taken up by the lower uterine segment. Number 3, so cervical dilatation effacement then consistency. What is the consistency? I have already told that tip of the nose this consistency of the cervix is present in non pregnant uterus, uterus, right. So, like the lips you know lips of the mouth that consistency is present when the you know in the cervix of a pregnant uterus, right.

So, coming we will assess the consistency of the cervix then we will note the position whether the cervix is posteriorly placed or in the middle or anteriorly placed, right and also the station, right. So, station of the fetus, so per vaginal examination we also assess the station that means, you know with the level of the ischial spine. So, this is the ischial spine where is the fetal head. So, in the at the level of the ischial spine it is station 0, above is station 1, minus 1, minus 2 like that and low down is plus 1, plus 2. So, from this level of the ischial spine we will assess the

station of the fetal head.

So, these 5 things are assessed in case of per vaginal examination and from this 5 examination we will calculate the bishop's score, right. So, dilatation of the cervix in centimeter these are the points given 0, 1, 2 and 3. If the cervix is closed it is 0, 1 to 2 centimeter point is 1, point given is 2 when the cervical dilatation is 3 to 4 centimeter and if it is more than 5 centimeter dilated then point is 3. Effacement percentage wise 30 percent, 40 to 50 percent, 60 to 70 percent and more than equal to 80 percent. Station station minus 3, minus 2, minus 1 or 0, 0 meaning at the level of ischial spines and plus 1 or plus 2, right.

Consistency firm, medium and soft, right firm meaning the tip of the nose, soft is like the lips in between is the medium consistency, position posteriorly placed towards the posterior vaginal fornix it is directed. So, that is not good anteriorly placed cervix is good. So, this way we calculate the points for each of these 5 criteria and then we evaluate the score. So, say the total score total score if it comes to be 6, right 6 to 13 if the total score comes to be 6 to 13 then it is favorable.

If less than 5 then it is unfavorable. Unfavorable cervix meaning it needs something, right we need to go for certain drugs to make the cervix favorable for you know labor to progress, right. So, 6 to 13 meaning that the cervix is favorable and we can wait for spontaneous onset of labor. If it is more than 8 more than 8 so, this you know says that yes the mother is or mother can be induced for labor. So, that will give a good prognosis or you know good result from induction of labor.

So, that is the score, right. So, this is the evaluation of score and the more the Bishop score the more the better the result the more the better for the normal progression of labor, right. So, that was the part vaginal examination. Then the laboratory studies which are to be done on the point of admission. Number 1 routinely hematocrit or hemoglobin concentration to be assessed, right.

Number 2 is the blood type, right. So, blood type means ABO plus RH typing. This is very important in case you know there can be abruption placental abruption, it can be associated with say any type of PPH postpartum hemorrhage or any type of you know bleeding during the process of labor and all these are very you know emergency situation where we need blood to save the mother. So, beforehand we should be very very confirm regarding the blood group and typing of the mother. Next is the antibody screen, antibody screen for VDRL, syphilis, hepatitis B and HIV these 3 must be done. And another test to be done is the clean catched voided urine to be tested for protein and glucose.

Mostly this is to exclude PIH, pre-eclampsia and eclampsia, glucose to exclude GDM or pre-gestational diabetes mellitus. So, these are the laboratory tests to be done at the time of

admission though they are done beforehand in the antenatal period we repeat it at the time of admission. Another thing I have missed that is per vaginal examination should not be done in case of placenta previa or in case of vasa previa. We should not go for per vaginal examination in these 2 conditions. Also in case of PROM or premature rupture of membrane in those cases per vaginal examination is not recommended because it increases the chance of infection, but it should be done if at all it is necessary right.

So, that was laboratory studies. Now, coming to so, these were all the tests and the examination done at the time of admission. Now we know that the mother is already in the first stage that is the true with the true labor pain has already started she is in first stage of labor and now we need to manage the first stage. First stage has 2 parts we know the latent phase and the active phase right. So, what to do will come one by one. Now this first stage is actually the preparation for delivery.

So, general measures to be taken in the first stage. Number 1 to maintain asepsis. Asepsis like you know cleaning the vagina with povidone iodine then you know pubic hair shaving right because from those it can invite infection during the period of labor right. So, asepsis number 1 rest and ambulation. So, now it has it is told that yes the mother can take any position of her own choice in the first stage.

She can be ambulatory, she can walk around or she can be in sitting position, in upright position, in squatting position, in knee chest position or if she feels she can be in left lateral position. So, that will be of her choice though we know tell you know to walk because this walking has shown to decrease the duration of first stage of labor, it has shown to decrease the pain associated in labor, it is it has shown to decrease any abnormalities in the progression of labor. So, we encourage the mother to be ambulatory and to walk around because in the upright position more is the descent of the fetus into the maternal pelvis. All preparation should be done by glycerin plane soap enema or glycerin enema because you know that will prevent soiling of the labor room table during the process of labor diet diet no no heavy meals right. So, that is you know curtailed heavy meals are curtailed because that will lead to you know full stomach because there is less gastric motility during the process of labor and full stomach can lead to aspiration during the process of labor that will cause more damage to the mother.

So, we do not want that we will ask the mother to not to have any heavy means she can have fluids, she can have fluids water right fluids and waters are permissible heavy means are not permissible right and if caesarean section is necessary then it should be caesarean section for caesarean section 2 hours of no fluids and 6 to 8 hours of no solid food right. So, this is the mandatory for caesarean section. So, we will not allow food bladder care yes she is asked to to void urine because urine in the bladder prevents the progression of labor as well as fetal descent and if there is no she cannot void then she can use a bed pan or sometimes we can no empty the

bladder by rubber catheter you know by temporary catheterization and relief of pain relief of pain mainly by epidural anesthesia or you know sometimes we use inhalational anesthesia with entonox or sometimes with opioids IM injection right, but epidural is safe and epidural anesthesia is a say you know seen to have caused a very good pain relief for the mother, but it somewhat prolongs the period of labor without any detrimental effect on the mother or the fetus right. So, that was the general measures.

Now coming to latent phase particularly the latent phase. So, now we have to assess the progression of labor we know the duration of latent phase maximum 20 hours increase of priming gravida and 14 hours in case of multi gravida. So, with abdominal maternal abdominal palpation from the crichton's maneuver we go for the descent we assess the descent of fetal head right. Number 2 we can also palpate the you know the sinciput and occiput of the fetal head when we go for the third and fourth leopold grip. So, from them we can assess that whether the occiput has entered the maternal pelvis when we cannot palpate per abdominally the occiput. That means, the occiput has moved inside the maternal pelvis engagement has taken place right.

After slowly slowly more descent the sinciput will also not be palpated. So, that we can go from maternal abdominal examination. Also from fetal heart rate fetal heart rate examination the fetal heart rate gradually becomes medially and downwards. Say before the onset of labor it was in the spinoumbilical line on the 2 lateral sides right spinoumbilical line or left spinoumbilical line. Now as the fetus goes inside the maternal pelvis the FHR is now seen in the midline right it is seen in the midline and low down.

So, that means, the fetus has there is internal rotation of the fetus and associated with fetal descent. So, the position of the fetal heart rate also helps to ascertain and obviously, from parvaginal examination we assess the dilatation, the station, the effacement right. So, we all assess the cervical assessment from the parvaginal examination. So, this is the assessment of progression of labor. Now, management of the latent phase I have already told that the latent phase is only to observe right mother should be ambulatory and no need for amniotomy, no need for caesarean section in case of prolonged latent phase.

Sometimes we can go for per rectal enema, sometimes we can ask the patient to be more mobile or walk around right and also we can sometimes give you know oxytocin if there is no uterine contraction. So, that is the last stage, but we will just monitor monitoring. So, this was for the latent phase. Now coming to the active phase, active phase that means, cervical dilatation is already more than 5 centimeters right. So, here also abdominal examination will say that the fetus has already gone inside it is less two fifth or less than two fifth of the fetal head is palpable per abdominally, oxy put is you know mostly not palpated per abdominally, vaginal examination the station is 0 or more than 0 that is plus 1 plus 2.

Partograph tracing starts from here right and that will help to note the cervical dilatation as well as the fetal descent both these curves in partograph. We will discuss partograph in our subsequent class and continuous fetal monitoring that is the CTG to note the fetal heart rate changes along with uterine contractions. So, that was the active stage of first stage of labour right in the active phase. Now monitoring mother should be 4 hourly monitored, 4 hourly monitored for pulse, blood pressure, then your respiratory rate, temperature and urine output. Urine output mother should be continuously you know motivated to void the urine right and if the say any associated risk factors is present associated risk factors is present then we will monitor every 2 hours right.

So, this was maternal monitoring. Now coming to fetal monitoring, fetal monitoring in latent phase fetal monitoring is every 30 minutes in latent phase and active phase fetal monitoring is every 15 minutes. I am very sorry this is first stage and this is second stage second stage. So, in first stage first stage fetal monitoring is every 30 minutes, in second stage it is every 15 minutes and if associated with fetal risk factors. What are the fetal risk factors? Like IUGR, like fetal hypoxia, like say placental abruption then we will go for fetal heart rate monitoring every 15 minutes in the first stage and every 5 minutes in the second stage right.

So, first stage and second stage. So, this is the monitoring of the fetus in the form of fetal heart rate with Doppler or with stetho or say with your CTG machine right. So, that was the fetal heart rate monitoring of the fetus. Now coming to the second stage, second stage is from full dilatation to the birth of the baby. So, one is the transition from first to second stage that includes increase in intensity of the uterine contraction right. So, uterine contractions are increasing in intensity in the second stage, there is associated bearing down effect from the mother which means that the abdominal muscles are contracting you know that will push the baby for expulsive force to expel out the fetus out into the outside world.

And third is you know bearing down effect will urge will you know there will be an urge in the mother to push or defecate right. So, she will strain like that in case of defecation that will result in the descent of the fetus and second stage always starts with full cervical dilatation that is external os of 10 centimeters right. So, that was that is the transition from first stage to second stage. Now in second stage the what does WHO say? WHO says that in second stage the mother can you know can take any position of her own choice including upright right. So, including upright she can take and number 2 is we need to prevent perineal tear right.

So, there are you know various tactics like warm compression, like hot and cold application over the vagina right. Then you know perineal tear prevention can be can occur when the head is delivered in between uterine contraction. And also head should be delivered in a controlled way in a you know keeping maintaining the flexion so that the least anterior posterior diameter that is the sub-oxipitoblegmatic you know comes out through the vulval outlet. So, that was the

prevention of perineal tear. What WHO does not recommend? It does not recommend any type of fundal pressure to be given during the second stage and also there is no need for routine episiotomy.

Episiotomy should be given only when required number 1 in case of primigravida with rigid perineum right. Number 2 in cases of instrumental delivery like vacuum or forceps right. Number 3 is in case of aftercoming head of breach right. So, breech delivery we need to give episiotomy or say any cases of macrosomia or shoulder dystocia there episiotomy is needed right. So, that was the second stage and for the second stage what are the preparations.

So, that there is you know the fetus is there is imminent the imminent for delivery. So, number 1 is aseptic measures you know lying down left lateral position of the mother in the labour bed. Then your mops to be taken to hold the baby number 1 to hold the baby hold the baby then number 2 to give perineal guards during the crowning right. So, these are all general measures. Number 4 is your monitoring of the fetal heart rate we know every 5 minutes every 5 minutes in case of high risk pregnancy and every 15 minutes in case of normal pregnancy right.

So, we need to monitor fetal heart rate. So, these are all general measures. Now, during the process of delivery during the conduction of delivery there are certain assistance required. Number 1 delivery of the head delivery of the head I have already told it should be in a you know maintaining the flexion it should be in a controlled way not in a suddenly it should be in a controlled way. So, that the head is maintained in flexion and the least anterior posterior diameter that is the suboccipitobregmatic diameter comes out through the vulval outlet thereby causing less perineal tear right. Number 2 during the delivery very very important it should be the delivery of the head should occur in between the 2 contractions right. And number 3 we need to give you know guard you know guard low down that is the perineal guard and from above we need to press on the occiput downwards and backwards that will help to maintain the flexion on the fetal head.

So, these are the points we need to know monitor or we need to keep in mind during the delivery of the head we have a picture. So, see here with our index and your thumb index and thumb of the examiner's left hand we press on the occiput the occiput is just below the pubic arch when the occiput is just below the pubic arch we press on the occiput posteriorly and backwards to maintain the flexion and the head is slowly slowly born by extension by the process of extension in a controlled way right such that the vertex then vertex then the brow then the face then the chin or the mentum is born. So, this was the delivery of the head maintaining flexion. Another point to note is the crowning of the head what is crowning? Crowning is when the maximum biparietal diameter is you know separating the vulval outlet right. So, the maximum biparietal diameter is separating the vulval outlet and the head is not receding back inside the uterus even in periods of uterine retraction and this crowning this point is important

for episiotomy timing.

So, when the crowning has occurred the vulva is stretched there is thinning of the vulval outlet and during this time at the time of crowning we give the episiotomy and mostly we give the medial lateral episiotomy right. So, on the right side right. So, right medial lateral episiotomy is given at the time of crowning of the head right. So, this is actually what I was telling that when you give a pressure on the occiput now backwards and downwards you maintain the flexion and this suboccipitobregmatic diameter which is the smallest AP diameter is coming out of the vulval outlet and this will prevent perennial tears right.

So, that was regarding your head delivery. Another thing is the Ritgen's maneuver which is nothing, but it helps to maintain the flexion of the head during the delivery of the head. So, what we do we give a pressure on the occiput and you know from above and we place our right hand with a you know with a vaginal pad or some gauge right. So, we press on the low down on the anal opening of the mother on the coccyx and thus we know help in controlled delivery of the head right. So, slowly the head will be delivered the vertex, the brow, the face and the chin will be delivered slowly by the process of extension.

So, that is the delivery of the head. So, the head has delivered and immediately after the delivery the chin presses on the you know maternal anal outlet the chin presses see here the chin is pressing on the maternal outlet. So, then this is the picture where restitution has taken place. Restitution is due to the torsion in the neck. So, next after the delivery restitution takes place by itself and then this is the external rotation. External rotation why because the shoulders the shoulder due to the internal rotation of the shoulders which is inside the paternal pelvis.

The shoulders have there is internal rotation which is you know which brings about external rotation of the head of the fetus right and this shoulder is now in the anteroposterior diameter. Next this will be followed by the delivery of the shoulders. So, this was the delivery of the head, head is done now the delivery of the shoulders. So, what happens the shoulders after the external rotation the shoulders are in the epi diameter. So, the shoulder in epi diameter and we have already seen in the mechanism of labour the you know anterior shoulder slips below the pubic arch and keeping the anterior shoulder as the fulcrum the posterior shoulder is born right posterior shoulder is born grazing against the perineal posterior perineal outlet right.

So, and then followed by the delivery of the trunk by the process of lateral flexion. In case say shoulder delivery is not occurring then what to do then what to do after the delivery of the head after the delivery of the head we sometimes hold the head and we pull it backwards. So, that the anterior shoulder slips below the pubic arch and then we gradually pull the head up right. So, that way we will deliver the posterior shoulder outside right. So, that you know that should be also done very gently and immediately after the delivery of the shoulders we put our hand below

the axilla and then we gradually pull the whole part of the trunk by the process of lateral flexion.

So, that was regarding the delivery of the head the shoulders and the trunk. Now coming to the prevention of perineal laceration there are certain points number one is delivery no by early extension delivery by early extension of head of head to be avoided. So, that was what I was telling with Regent's maneuver also we are trying to maintain the flexion right. So, the smallest epi diameter comes out. So, the early extension of the head should be you know avoided right.

So, that that is number one. Number two is spontaneous forcible, forcible delivery of head delivery of head should be avoided right. So, with fundal pressure delivery of the head should be avoided because that may cause perineal tear and head should be delivered during the you know in between the uterine contraction head delivery should occur in between uterine contraction. Number four timely application of episiotomy just at the time of crowning we need to go for episiotomy if indicated. And number five gentle traction during the delivery during shoulder delivery why because in shoulder the bis acromial diameter it is very you know it measures around 12 centimeter 12.5 centimeter. So, it is a larger diameter and so, we need to you know adjust or you know that maintaining the head downwards first downwards and backwards we slip the anterior shoulder below the pubic arch and then moving the head upwards. We gradually graze the posterior shoulder from the perineal posterior perineal outlet. So, you know maintaining this procedure during the shoulder delivery is important to prevent perineal laceration right. So, these are the points to be taken into account due to prevent perineal laceration and to keep in mind any type of laceration you know is always worse because that healing is much much more poorer compared to episiotomy. Episiotomy wound heals much better, episiotomy wound is associated with less bleeding, episiotomy wound after healing will help to maintain the vaginal outlet opening right.

So, these are the advantages of episiotomy and it should be given it is a iatrogenic tear, but it should be given where it is indicated. Now after the delivery regarding the immediate care of the newborn what occurs after the delivery of the baby the baby is taken in a tray in a tray with a cloth right and the tray should be at a level lower than the uterus so as to allow the extra amount of blood from the placenta inside the fetus right. So, that extra amount of blood of 80 to 100 ml should go into the fetus that will you know help in fetal blood you know fetal hematocrit value maintenance right. Next immediately after delivery is air passage clearance by suction right oropharynx oropharynx to be cleared by suction to remove the mucus all the mucus secretion right and then Apgar rating Apgar rating at 1 minute and 5 minutes. So, we go for the Apgar score at 1 minute and 5 minute to note the fetal well being and cord clamping cord clamping is very important there is a term called as delayed cord clamping you know that should be done after 2 to 3 minutes you know till the pulsation ceases till pulsation ceases right.

So, till the for pulsation ceases we will not clamp the cord and it we will wait for 2 to 3

minutes and this allows the extra amount 80 to 100 ml of blood to pass on to the fetus right and where delayed cord clamping is contraindicated where it is contraindicated it is contraindicated in case of asphyxiated baby it is contraindicated in case of sensitized RH negative pregnancy right sensitized RH negative pregnancy and in case of fetal asphyxia right. So, these are the 2 conditions where it is contraindicated ok and sometimes in case of preterm preterm babies this extra amount of blood can cause hypervolemia. So, also in preterm babies we avoid delayed cord clamping in all other conditions delayed cord clamping is advocated right. So, that was the immediate care of the newborn and cord should be approximately 2 centimeter 1.5 to 2 centimeter from the navel because you know in case of any injection to be given to the baby after birth this umbilical cord comes into play and also we need to look for the umbilical vessels in the cord there will be 2 umbilical artery and 1 umbilical vein in the umbilical cord.

So, that was regarding the newborn immediate newborn care after the delivery wipe the face wipe the body cover the body keep the newborn in a warmer go for suction of the oral cavity then clamp the cord keeping an appreciable length of the cord from the navel of the baby look for the cord structures or the vessels of the cord and also assess the apgar score of the baby at 1 minutes and 5 minutes and do have a pediatrician or neonatologist in the labour room to look for any congenital birth defects. So, that was the newborn care. So, this was the clinical monitoring and management of first and second stage of labour. So, I have completed the second stage now we will discuss the third stage that is the delivery of the placenta and the membranes from the uterus in our upcoming class. References taken are from D.C Dutta book of obstetrics the Williams books of obstetrics the James book on high risk pregnancy and also never to forget the Oxorn Foote book on labour right.

So, Oxenfordt do get this book if you know have a chance Oxorn foote book on labour. So, that was all for today's class. Thank you all for your hearing and looking forward to our next class. Thank you.