

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

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Monitoring of Normal Labour (part 2)

Good morning students. Hope you are all doing good. I welcome you to today's session for the 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 continue our discussion on monitoring in normal labour, right.

So, the management of an antenatal mother who is in normal labour. We have already seen the stages of normal labour starting from the first stage, right, with the onset of true uterine contractions together with cervical dilatation and effacement. So, starting from the first stage of labour, then in the first stage we have divided into two parts that is the latent phase and the active phase. In the latent phase basically, you know, we give an expected management.

We just observe for the well-being of the mother and the fetus and we allow to spontaneously progress the labour, right. And it has a duration of about 12 hours in primi and 6 hours in multi and it is said to be prolonged if it is more than 20 hours in case of primi gravida or more than 14 hours in case of multi gravida. So, during this latent phase, now if, you know, it is increased more than 12 hours, then also we have to wait for at least 20 hours to call that latent phase to be prolonged. And in the latent phase, we just wait and observe decision of caesarean section is not taken in the latent phase. Any type of active management in the form of amniotomy or in the form of oxytocin infusion is not generally done, you know, unless it is indicated.

Next, coming to the active phase of first stage of labour, in the active phase, the uterine contractions become more regular. They increase both in intensity, duration and frequency and there is more, you know, more degree of cervical dilatation and effacement right at occurring at a rapid phase. So, that is the active phase of first stage and this generally it is, you know, around 1 point, you know, 1.5 centimeter dilatation per hour in case of primi and 1.2 centimeter cervical dilatation per hour in case of multi gravida.

So, it will be around, you know, 2 to 3, sorry, 6 hours total duration around 6 hours. If it is prolonged than more than that or say the uterine contractions are not taking place, we go for certain management or intervention in the form of uterotonics as oxytocin infusion right. And, you know, in this active phase, actually partograph is plotted in the labour room and it helps to assess the progression of labour and, you know, rupture of membranes occur in the later stages of the active phase and fetal descent is also associated in the later stages of active phase. So, that was regarding the first stage of labour. In the second stage, we have studied that it starts from the full dilatation of the cervix till the delivery of the baby and it is going to take around your 1 hour right, 1 to 2 hours in case of primi gravida and 30 minutes in case of multi gravida.

But it is said to be prolonged if it is more than 3 hours in primi or more than 2 hours in multi right. In case there is no epidural analgesia been administered to the mother, if epidural analgesia is administered, it may prolong the second stage by an additional 1 hour right. And, this second stage we will continue the partograph plotting, we will continue the fetal heart rate, dressing, we will continue to regularly monitor the mother every 2 hour and the fetus every 15 minutes right and we will be vigilant because this will result or this will end with the delivery of the baby which has 3 steps that is the delivery of the head, the delivery of the shoulders and the delivery of the trunk. And, it is to be kept in mind that the fetus should be delivered in well flexed condition, the head should be in well flexed condition so that a smaller diameter, smaller suboccipitobregmatic diameter comes out through the vulval outlet so as to decrease the chance of perineal injury. And, also the head should be delivered in a controlled fashion in between the uterine contractions, episiotomy at the time of crowning may be given not done routinely, but given in case in indicated cases only.

After the delivery of the fetus is the third stage. So, today now our class starts from the third stage of labour. So, the concepts covered will be the management of third and fourth stages of labour and another term is the active management of third stage of labour, AMTSL right. So, this is a newer concept that active management of third stage of labour. So, today we will discuss the third and fourth stages of labour.

What is the fourth stage? Fourth stage is one hour after the delivery of the placenta. Keywords are as given. So, now coming to the management of third stage, it has two different terminologies. Management can be expectant management which is a more traditional method of your delivery right and another one is the active management and this is preferred right. So, what is expectant management? Expectant management is you know when we allow placental separation and descent of the placenta into the vagina to occur right continuously, you know spontaneously to occur spontaneously.

So, we allow this to separate the placenta from the uterine wall and gradually get you know gradually it will descent into the vagina into the vaginal introitus and this will occur

spontaneously. Right. So, if we see here this is no placental separation. Third stage is nothing, but placenta and membranes separation. Now, what to remember in this? Number one are the types of placental separation.

So, we know the cause right, we know the cause of placental separation. Why the placenta is getting separated? Say this was the uterus and here was the fetus and here this was the placenta right. Now, after the delivery of the fetus after the delivery of the fetus the uterus will shrink in size. The wall of the uterus which was enlarged with the fetus inside the utero it will decrease in size, but the placenta which was here it had a surface area like this. Now, this will buckle up right.

This placenta will buckle up and the placenta is not an elastic organ. So, the placenta will fold onto itself and it will get separated from the you know the uterine wall which is now decreased in surface area and here we have two types of separation. Two types of separation that is number one the Schulz method which is the shiny amniotic surface coming out first right. So, that is the Schulz method and number two is the Matthew Duncan method. In Matthew Duncan method it is the dirty surface the dirty cotyledon maternal surface with the cotyledons that comes out first.

Most common is the Schulz method and it is associated with less blood loss. Lesser common is the Matthew Duncan's method and it is associated with more blood loss. So, that was the types of separation. Now, what are the signs of placenta separation? Your number one there will be a suprapubic bulge right. This we should know because after the delivery of the baby if we are going for an expectant management we should know the signs of placental separation till what period we will wait right for knows for the placenta to separate spontaneously on its own.

So, after the placental separation there will be a suprapubic bulge right you can see it. Also there will be permanent lengthening of the cord permanent lengthening of the umbilical cord. So, the placenta gets separated and this cord this cord will come down right and there will be permanent lengthening of the cord outside the vaginal introitus right. And number three is your increase in height of the uterus. Uterine height will be up to the umbilicus.

The uterine upper segment will sit over the separated placenta. It will sit over the separated placenta. The placenta has come down it has it has dislodged or it has got detached from the upper uterine segment and it has come down right. And this upper uterine segment sits over the dislodged placenta in the lower uterine segment and it this height of the uterine uterus fund the fundal height will increase and it will come to the level of the umbilicus. And when we see the vagina the placenta in the vaginal introitus that time so, placenta in vaginal introitus.

So, at that will depict that yes the placenta has got separated. So, that was all regarding the your signs of placental separation. Now, coming to your sorry traditional method. So, in the

expectant method in the expectant method we have discussed we are slowly slowly monitoring the patient. So, what to do we will just continuously monitor and see the signs of placental separation.

Number two is positioning of the mother the mother should be in dorsal position say the mother was in left lateral position during the delivery of the fetus. Now, the mother should be you know changed to dorsal position during the third stage of labor. And number three we can go for per abdominal palpation just palpation to note three things. Number one the tone of the uterus, number two you know the size tone of the uterus, uterus should be contracted right. Number two the size of the uterus because it is you know slightly there is increase in size of the uterus.

And the palpate the fundus of the uterus, palpate the fundus of the uterus why because sometimes there can be you know feeling of a cupping like this. So, when you fundus is convex. So, when there is cupping of the fundus that means, there is a chance of uterine inversion cupping you know tells that there is a chance of uterine inversion right. So, these three things we will palpate per abdominally. Now, after doing this expectant management we will wait for the placental tissue to separate normally and it takes about 10 to 15 minutes time right.

So, when then you see the placenta in vagina or vaginal introitus. After you see the placenta on the vaginal introitus then you just hold the cord or hold the placenta put a left hand over the mother's abdomen and by rotating movement you take out the placenta. So, that was for expectant management. Here we should be very gentle, we should be patient and we should be very meticulously vigilant regarding the you know spontaneous expulsion of placenta. Now, if this expectant management fails what to do? If this fails then what to do? Then we will go for the next step right.

So, the placenta has not detached on its own even after 15 to 20 minutes of time then what to do? So, if it has not know it has been not detached even after 15 to 20 minutes then what will we do? Here I will write it in the next slide. So, what will we do? Failed expectant management. So, failed management after 15 to 20 minutes of delivery of the fetus the placenta has not been expelled then what will you do? You will evacuate the bladder because bladder if it is full it will prevent the uterus to contract and that will prevent the separation of the placenta. Also you will note for any per vaginal bleeding right if there is excessive bleeding we must intervene early and number 3 is your we should have an IV access right IV access with IV fluid RL right and then we will go for this assisted expulsion. What is this assisted expulsion? This is controlled cord traction.

If the expectant management fails then we will go for these maneuvers and this also is called as modified andrew brandt andrew method. What is it? Here we put our left hand on the suprapubic

region right and we push the uterus we push the uterus upwards and backwards right with the left hand and with our right hand we will hold the coccy forceps right we will hold the coccy forceps and we will slowly slowly very gently we will try to pull the cord downwards and backwards and that is called as controlled cord traction and this should always be done during uterine contraction. So, uterus should be aptly contracted it should be formed and then only we will try this controlled cord traction because if the uterus is flabby uterus is you know tone is less then controlled cord traction may result in uterine inversion right. So, that was number 1 and what is number 2? Number 2 method which we can do is fundal pressure this is not done nowadays but here also we can now put our left hand on the fundus of the uterus first this also to note the tone of the uterus whether the uterus is well contracted and then giving a pressure on the fundus of the uterus with our left hand we try to squeeze and this will help in separation of the placenta and that will be going out into the vaginal introitus and will get separated right. So, this was the fundal pressure and this fundal pressure I told it is not done nowadays.

Nowadays we follow the modified brandt Andrews method, but sometimes in case of IUFD where the baby is macerated, macerated fetus we can go for this fundal pressure because there is a chance of cord tear right during the controlled cord traction. So, there may be you know during this controlled cord traction the cord may get accidentally torn right and in that case that will be a case of retained placenta. So, instead of controlled cord traction we can go for this fundal pressure. So, that was the expectant management after the expectant management after the separation of placenta the placenta is taken out of the vaginal introitus and then the next very important step is examination of the placenta membrane and cord. So, we will examine both the surfaces this is the maternal surface with the cotyledons see these are the cotyledons right.

So, there are different cotyledons and these cotyledons has to be inspected because in case or whether there is any missing cotyledon right. So, we have to see these surfaces and if there is you know any part there is showing missing cotyledon that means, there may be a chance of succenturiate lobe or you know sometimes there may be a chance of retained products of conception within the uterus may be that cotyledon is retained inside the uterus and in that case we need to go for you know evaluation of the uterine cavity under GA to you know expel out that retained cotyledon inside the uterus. So, we will examine the maternal surface we will examine the fetal surface or the amniotic surface which is you know the shiny fetal surface this is this surface and we will see for all the membranes the continuity of the membranes the cord right that cord will be you know examined and also the blood vessels whereas, there is a torn blood vessel at the periphery that will also depict towards succenturiate lobe right and also the structure of the cord the three vessel structure of the cord two umbilical arteries and one umbilical vein right because if any abnormality is seen in the cord that will hint towards abnormality in the fetus. So, now, the fetus has to be examined more meticulously for any congenital abnormality. So, that was the examination of placenta and membranes after that we will inspect the vulva vagina and perineum for any tear right any tear or any lacerated wound

right or for the episiotomy.

If episiotomy was given during the process of vaginal delivery then now it should be inspected and a repair should be done repair we will you know read about that in our episiotomy class it has stepwise repair and that is done with number one cat gut suture right. So, that was the inspection of vulva vagina and perineum. Now, this ends the your expectant management. Another thing is if say in the expectant management if it fails right if all the maneuvers done is failing or if the uterus is not contracted, uterus is not contracted then we will go for uterotonics right this is important and just a you know discussion about uterotonics. Uterotonics are drugs which help in contraction of the uterus and there are many of which the most important is oxytocin.

It can be natural oxytocin which is released from posterior pituitary or it can be synthetic right synthetic syntometrin synto no sorry synthetic syntocinon ok syntocinon and mostly we give 10 units of oxytocin IM or IV in 500 ml of NS right and it has a side effect of hypotension. So, the direct IV injection of oxytocin is not given. Number 2 is syntometrine which is oxytocin plus methergine and this methergine is another you know if you say this is also is a utero tonic, but here the side effect is increase in blood pressure. So, it is contra indicated in PIH pre eclampsia or eclampsia and number 4 is misoprostol PGE-1 right. 5 is carbetocin this is a newer drug form of newer molecular you know slight modification of the oxytocin molecule.

This is a larger T half half life has increased that is 40 minutes right. So, this is more effective in prophylactic prevention of PPH. So, these are all very important in the third stage of labor PPH is a grave condition emergency in the third stage of labor because it will know lead to acute or sudden collapse of the mother and these drugs will prevent PPH. We have some drugs also along with these we have some others like you know carboprost PGE-2 right. So, carboprost which are used in the treatment of PPH.

So, that was regarding uterotonics right. Now, coming to our next part that is the active management active management of third stage of labor right. So, first we were going for the expectant management just looking just monitoring just seeing the signs of placental separation and waiting for the placenta to get separated on its own. In case of active management we do intervene early right. So, what is the advantage number 1 it will decrease the blood loss the amount of blood loss which is approximately no say in active management it is you know round about 200 ml, but in passive or expectant management it can increase to 500 ml. So, it will decrease the blood loss and also number 2 it decreases the time of third stage of labor.

So, expectant management it was 15 to 20 minutes here it is only 1 to 5 minutes right and what is the disadvantage? Disadvantage is your increased chance of retained placenta as we are actively intervening sometimes it may so happen that you know placenta gets retained inside the

uterine cavity right. So, that in that case we need to go for manual removal of placenta right and number 2 in case of twin pregnancy in case of twin pregnancy you know if we go for active management of third stage following the delivery of the first twin that will cause hypoxia of the second twin. So, AMTSL should not be done in case of delivery of the first twin right. So, it should not be done now after the delivery of the second twin we can go for AMTSL. Now, what is the procedure? Procedure is immediately after the delivery of the fetus now after delivery or no delivery of anterior shoulder of fetus we give injection oxytocin 10 units IM or IV in 500 ml saline or injection methergine 2 ml that is 0.4 milligram IM this is more preferred oxytocin is more preferred because methergine will cause no total contraction both the upper and lower uterine segment contraction and it can have no side effect or it has more chances of retained placenta also methergine increases the blood pressure. So, methergine cannot be used in case of PIH preeclampsia or eclampsia in that sense oxytocin is much safe and oxytocin causes only the upper uterine segment contraction and so oxytocin is preferred right. So, number 1 is uterotonic injection number 2 is control contraction which we have already studied the Matthew Andrews and Brandt Andrews method right. So, just revision of that we use our left hand push the uterus upwards and backwards and with the right hand we hold the Kocher's forceps which is you know which is which has a ligated the maternal end of the umbilical cord and holding that Kocher's forceps we pull the cord in a controlled manner downwards and backwards that will cause control contraction and it will help to separate the placenta in a controlled manner and this time is within 1 minute of fetal. Of fetal delivery placenta gets delivered within 1 minute of the delivery of the fetus right.

So, that was the controlled cord traction and it is in active management and if this active management fails we have done we have given oxytocin we have given done the control cord traction, but we are not able to separate the placenta then what to do again we will go for emptying the bladder right emptying the bladder we can increase the dose of oxytocin now oxytocin can be given 20 units in 500 ml saline then we can you know sometimes we have to rule out the chances of placenta accreta right. So, chances of adherent placenta right. So, all these have been done still it fails. So, after 2 to 3 minutes we can repeat this control cord traction right. So, if fails then what to do after repeat CCT controlled cord traction after 2 to 3 minutes if this also fails if this also fails then we again try controlled cord traction after say 10 minutes and if this also fails then we will go for manual removal of placenta and manual removal of placenta should always be done in general anesthesia in the operation theater right in dorsal lithotomy position right lithotomy position with blood in hand.

They should always be in the mind it should never be done in the labor room and because there can be no chance of neurogenic shock chance of neurogenic shock is associated with manual removal of placenta and so, it should always be done under general anesthesia. So, that was the active management and after the active management know as in case after the separation of placenta we will always examine the vulva vagina and perineum for any tear or any type of

episiotomy and we will have to repair if there is no any tear present. So, that was the this is the comparative study expectant management where the baby is delivered we clamp the cord we divide right we clamp both the maternal and fetal end and then we cut and ligate the cord and then wait and watch just monitor right for spontaneous separation of placenta and it can it is separated within 15 to 20 minutes and if it fails then we will go for the assisted expulsion in the form of controlled cord traction or fundal pressure or if we note that the tone of the uterus is flabby then we will go for uterotonic injection but in active management know from beforehand after the delivery of the baby or delivery of the anterior shoulder of the baby just when we see the anterior shoulder coming out of the vagina we give oxytocin or injection methergine and then after the delivery we clamp the cord we divide and ligate the cord and then we go for controlled cord traction right and that should always be done during the uterine contraction right during the phase of uterine contraction when the uterus is firm and contracted because there is a chance of uterine inversion and if first controlled contraction fails we will repeat after two to three minutes if that also fails we repeat after 10 minutes if that fails then we will go for manual removal of placenta under GA in OT with blood in hand right after the delivery of the placenta we examine the placenta membranes and the cord for its completeness the total placenta and membranes and cord has been you know expelled out and you know to exclude any chance of written bits of placenta inside the uterus and we will also inspect the vulva and the perineum for any tear so that was the third stage it has it is a very important stage and here there is a chance of pph so we must be very vigilant coming to the management of the fourth stage fourth stage is nothing but one hour following delivery what we see we see the well-being of the mother and the baby in the mother we examine the pulse we examine the blood pressure we examine the urine output right we examine the color of the urine also sometimes you know by rubber catheter temporary catheterization we can see the urine coming out and we need to see the color of the urine reddish color urine will hint towards injury of the urethra or maybe you know some compression of the bladder due to obstructed labor right so and also bleeding power vagina all these should be noted and very very important is the tone of the uterus whether the uterus is properly contracted or not if it is flabby we need to intervene and give your different uh what to say different uterotonics right and coming to the fetus coming to the fetus we will examine the fetus you know mostly by the obstetrician we will go for the apgar score right appearance you know that grimacing know the activity of the fetus apgar score of the fetus at one minute at five minutes following the delivery so how is the activity how is the color of the fetus how is the cry of the fetus not the fetus sorry the baby after the delivery it is the baby so we will see and also will know encourage encourage for breastfeeding exclusive breastfeeding we will latch the baby to the mother we will help in you know mother to baby uh contact skin to skin contact that is called as kangaroo mother care that should all be done during this fourth stage the mother should be educated the mother should be encouraged for right and the baby should also be you know given time to latch to the nipple of the mother so that it starts to you know suckle right it starts to suckle and thereby breastfeeding is established so that was the fourth stage of labor and if after one hour both the mother and the baby are doing good then we will shift the mother and

baby to the ward right in the ward the rest uh monitoring will be done and after normal delivery approximately it is you know by protocol we keep for three days 72 hours observation in the institute or in the hospital for any type of complication complication in the form of vaginal bleeding postpartum hemorrhage right in the form of vulval hematoma right or in the form of urinary retention any type any fever any infection these needs to be looked upon for the rest three days following the delivery so that was regarding the fourth stage of labor management so that was all regarding the management of labor and here we come to the end of the class references are taken from D.C.Dutta book of obstetrics williams obstetrics and james book on high-risk pregnancy so that was all thank you all and keep reading from the books and you know enrich your knowledge thank you