

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

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Episiotomy

Hello students. Welcome you all to today's 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 Center, IIT Kharagpur. So we have already discussed the antenatal care, the different investigations as well as the serial monitoring to be done in any pregnant female in the antenatal clinic. We have also discussed the labor module that is the intranatal care, the mechanism of labor, the events in the different stages of labor, monitoring of labor, labor analgesia, intrapartum fetal monitoring.

And now we are going into the second stage which involves the delivery of the baby. So second stage or the delivery of the baby is actually the vaginal delivery methods and after vaginal delivery we will be today discussing the episiotomy. Today's class is a short topic but it is a very important topic regarding episiotomy. The concepts covered will be the fourth stage.

So episiotomy comes though episiotomy is given in the second stage just prior to the delivery of the head of the baby but the repair is done in the fourth stage that means after the delivery of the baby. Second stage is the delivery of the baby and then third stage that is the delivery of the placenta. So the episiotomy repair is ideally or preferably done after the delivery of the placenta. We look inside the uterus right and we are confirmed that the placenta with all its membranes has been expelled out of the uterus and then we go for the repair of episiotomy. So the keywords are as given right.

So coming to the class proper. What is episiotomy? Episiotomy is you can see in very no concisely that it is an iatrogenic second degree perineal tear right iatrogenic second degree perineal tear. So episiotomy is a surgically planned incision over the perineum and the posterior vaginal wall in the second stage. It is given in the second stage in order to ease the delivery of the fetus and why is it given? In order to enlarge the vaginal introitus and the perineum right and to prevent the tear of perineal muscles and fascia. So actually it is given it is an iatrogenic tear which is given by the attending obstetrician or the attending midwife you know who is

supervising the delivery and it is given in the second stage of labour just prior to delivery of the head of the fetus and the repair is done ideally after the delivery of the placenta and the membranes that is in the fourth stage of labour ok.

So coming to the indications. So what are the indications of episiotomy? Number one is tight perineum. So when the perineum is tight as in primary you know we need to somewhat relax or increase the size. So mostly say if there is fetal distress and you need to expedite the delivery. In that case episiotomy when given will enlarge the perineum will relax the tight perineum and that will help in speedy delivery ok.

Other indications are shoulder dystocia. Yes you need to have a large opening or you need to increase the perineal opening for you know in case there is shoulder dystocia, in case there is a macrosomic baby, in case there is malpresentation and as in case of face presentation right. Occipitoposterior, persistent occiput posterior. We have not discussed the malpositions in our course module, but you know I have already discussed right depending upon the position. Occiput Anterior is normal is you know is normally present or in maximum number of times it is occiput anterior through which the fetus is delivered or head delivery occurs.

But occipitoposterior may sometimes be you know there is persistent that means, it remains in occipitoposterior position and the normal delivery will occur in this occipitoposterior position how by face to pubis delivery. So, in this case you need to give an episiotomy you need to enlarge the introitus. So, as to increase the diameters because in face to pubis delivery a larger fetal skull diameter will be coming out of the vaginal introitus and thus to prevent any untoward perineal muscle tear we need to give a liberal episiotomy. In case of breech presentation you know after coming head of breech. So, when you go for breech delivery you know after coming head of breech.

So, you know after the buttocks the shoulders are delivered now for the delivery of the head. So, after coming head of breech delivery you need to give a episiotomy. Instrumental delivery always we give episiotomy as in case of forceps delivery or vacuum delivery. In the subsequent class we will discuss the instrumental delivery. So, all these are indications.

Another thing to note that routine episiotomy is not recommended. Routine episiotomy is not recommended nowadays right. WHO says that there is no need to give episiotomy in every vaginal delivery only when it is indicated right. These are the indications and you know depending you know by assessing the individual case you need to ascertain whether episiotomy needs to be given or not. Next is the timing when the episiotomy should be given.

So, I have told that episiotomy is to be given in the second stage of labor right. So, second stage meaning just when the cervix is full dilated and the baby is about to be born. So, when in

the is the timing number 1 thinned out and bulged perineum. So, when the this say this is the perineal labia majora right this is bulged out. This is bulged out because the fetal head is now coming out of the perineum.

So, this is the labia majora this is bulging out and inside this is the labia minora right. So, this is the labia majora and this is the labia minora inside and here is the vaginal opening these are all bulging out this is the vaginal opening and you can see the fetal head you can see the fetal head right. So, when the fetal head is coming and say you can visualize 4 to 5 centimeter of fetal skull diameter during contraction during the uterine contraction you can visualize from outside you know visualize 4 to 5 centimeter of fetal skull diameter coming out of the perineum then you know that is the time for giving the episiotomy that time the perineum is thinned out it is bulging you know and crowning I have already discussed in the mechanism of labor what is crowning? Crowning is when the fetal head is coming out of the perineum and it is not receding back the fetal head is not receding back even in periods of uterine relaxation that is the time of crowning and that means, the maximum fetal diameter is actually at the perineal outlet and the episiotomy is mostly given during the uterine contraction when there is contraction there is more thinning of the perineum and at that time you give the episiotomy because that that will be you know helpful because there will be less tissue damage less tissues will be cut and also the mother will feel less pain right. So, another thing I want to add here is say this is the vaginal opening right. So, and just posterior to the vaginal opening this is the anal opening ok.

And here you this is this is the vaginal opening here is the labia minora here is the labia majora right and say this is the fourchette. Now what I want to stress that these are the levator ani muscles here is the perineal body now we you give episiotomy. There are different types of episiotomy you can cut here you can cut here this is median episiotomy. So, from the end of the vaginal opening. So, this from here you cut this is median episiotomy midline in the midline it is median episiotomy or you can cut like this this is medio lateral episiotomy these two are mostly given in the labour room there are also other types of episiotomy which is which is your posterior episiotomy. Medio lateral median I will again discuss because these are the most used episiotomy lateral or J-shaped these are not so much used, but medio lateral and median these are the two episiotomy which is used very frequently and both of them has some advantage and some disadvantage.

So, what are the advantage and what are the disadvantage? So, see this is the I have told this is the vaginal opening sorry. So, this is the vaginal opening and this is the labia majora outside this is the labia minora. Now, you can see that this is median episiotomy and this is medio lateral. Now how much length of episiotomy to be given? It is approximately say depending upon the head of the fetus, depending upon the tightness of the perineum or the diameter of the perineal outlet either obstetrician herself or himself will decide mostly 2 to 3 centimeter length of the incision and it actually cuts through the vaginal mucosa. So, this inside is the vaginal

mucosa.

So, you are cutting through the vaginal mucosa and you are coming down you will be cutting the perineal muscles also. So, part of the levator ani muscles will be cut, part of the perineal body the midline perineal body will be cut and skin and subcutaneous tissue will be cut right. So, and same in case of median episiotomy you are cutting the vaginal mucosa, you are cutting the actually you are just now from the tip from the tip you are cutting. So, you are cutting the vaginal mucosa. So, these labia will be approximating in the midline.

So, it will be like this labia will not be cut in medial lateral episiotomy right. So, labia will not be cut. So, now the vaginal mucosa vaginal mucosa is cut, number 2 is part of levator ani muscle because this is the levator ani part of the levator ani muscle will be cut right and also also perineal body fibers will be cut in the midline and also skin and subcutaneous tissue will be cut. Now what is the advantage? In median episiotomy there is less blood loss, there is less tissue injury less muscle fiber injury and after healing it has better healing and after healing there is less dyspareunia right less post operative pain. So, these are the advantages, but what is the disadvantage? Disadvantage is if the median episiotomy gets extended it will lead to third and fourth degree tear if extended if it gets extended then the second degree this is actually second degree perineal tear where the vaginal mucosa and the levator ani muscle or the perineal muscles are cut no anal sphincter is cut in episiotomy no anal sphincter injury in case of episiotomy.

But say if this median episiotomy gets extended during the delivery of the fetal head it will result in third or fourth degree perineal tear what does that mean? There will be anal sphincter injury associated anal sphincter injuries, OASIS obstetric anal sphincter injuries. So, it will lead to oas or third or fourth degree perineal tear, but in medial lateral in medial lateral though there is more blood loss compared to median episiotomy more tissue damage more dyspareunia and not you know not anatomical healing perfect perfect healing is not present in medial lateral right. So, little bit of a dimpling on the vaginal skin may be present after the repair of medial lateral episiotomy. So, still we give medial lateral why what is the advantage these are the disadvantage what is the advantage? Advantage is that it does not lead to anal sphincter injury even if it is it gets extended during the delivery of the fetus the anal sphincter it is away from the anal sphincter and so, anal sphincter injury is you know prevented or it does not happen in medial lateral episiotomy. Another thing it it can be right or left right it can be right medial lateral episiotomy and if you give in this side it will be left medial lateral episiotomy and you know we can give any of them, but still right is more preferred because the rectum is towards the left side.

So, right medial lateral episiotomy is the most commonly used episiotomy right. So, that was regarding medial lateral. So, overall medial lateral is most commonly used and you know it is

better because there is less chance of obstetrical anal sphincter injury and though cosmetically you can say median episiotomy has a better healing and you know postoperatively there is less dyspareunia still we will go for medial lateral episiotomy because there is less chance of OASIS less chance of OASIS obstetrical anal sphincter injuries. Types I have already discussed those were the types you know just the diagram which I have already discussed you know this is the median. So, this is the vaginal opening, this is the labia majora, this is labia majora with hair follicles and inside is the labia minora and if you draw like this here is the anal opening low down here is the anal opening with the anal sphincter internal anal sphincter external anal sphincter they are present around the anal opening and you give this is the median and this is the medial lateral.

This is median episiotomy, this is medial lateral episiotomy right. So, this is the picture midline median see this is the anal opening and you have the anal sphincter all around right and here you have this muscle this is the vagina this is the vaginal skin right. So, around this is the bulbospongiosus muscle this is bulbospongiosus right and on two sides they are the levator ani these are the levator ani muscles right and here is the perineal body. So, this is the medial lateral episiotomy where you cut the vagina you vaginal mucosa I mean you cut the bulbospongiosus here also is the bulbospongiosus. So, you cut the bulbospongiosus muscle you cut a part of the perineal body and also you cut some parts of levator ani muscle right.

So, these are the muscles which are cut in episiotomy medial lateral episiotomy, but see here this is the internal anal sphincter and the external anal sphincter which are not cut in episiotomy that will lead to rectal incontinence right. If it so happens that there is second or fourth degree perineal tear during vaginal delivery we need to repair it right we need to oppose the internal and external anal sphincter so as that the patient does not have rectal incontinence in the future right. So, if you want to know that what are the structures that are cut during episiotomy I will again write it for you. So, this is the time just this is the head of the fetus which you can see and you enter your left hand you enter your left hand to guard the fetal head. So, that the scissors are not you know they are not traumatizing the fetal head.

So, the fingers will direct the direction of the scissors as well as it will guard the fetal head and then you direct your scissors along the fingers and here this is right medial lateral episiotomy this is being given on the right side and from the midline. So, it should be from the midline from here from the midline and there is an angle. So, what is this angle when you place the scissors this angle is your 60 degree from the midline. So, when the perineum is bulging at the time of crowning you place the episiotomy and approximately at an angle of 60 degree from the midline right. So, after the delivery when the perineum is again coming back to its normal position this angle becomes 45 degree from midline right after delivery.

This is when the perineum is stretched it is 60 degrees when you give the episiotomy and after

delivery the episiotomy line comes 45 degree from the midline right and structures which I was telling structures which are cut during episiotomy structures which are cut during episiotomy what are they. So, this is the vaginal opening this is the anal opening and these are the muscles. These are the muscles this is the perineal body right and so, you give incision from the midline you come here and this is the medial lateral episiotomy from the picture itself you can see what are the structures cut the vaginal mucosa. Number 2 muscles what are the muscles part of levator ani levator ani muscle which is pubococcygeus we have read about the levator ani muscle in our anatomy class pubococcygeus and iliococcygeus muscle are cut.

Number 3 perineal body right. So, this is part of the perineal body which is also made of this levator ani muscle and this this muscle which I have already told that this is the bulbospongiosus this also is cut. So, number 4 is the bulbospongiosus muscle. Number 5 number 5 these are the superficial and deep. So, this is the deep and this is the superficial. So, superficial and deep transverse perinei muscle and lastly is your pudendal nerve and vessels and skin and subcutaneous tissue.

So, these structures are cut in episiotomy what are the structures which are not cut this is number 1 which is not cut. So, it is lateral above lateral what is that muscle it is what is this muscle? A I will write it A. So, what is this muscle it is ischiocavernosus right and another muscle of levator ani that is the ischiococcygeus or coccygeus that is also not cut. So, ischiocavernosus ischiocavernosus A B is your ischiococcygeus this is a part of the levator ani or coccygeus both are the same muscle and number C is these anal sphincter external and internal anal sphincter. So, these are the 3 structures or muscles which are not cut right.

So, these are not cut in episiotomy. So, that was the things which I have already discussed again just a revision structures cut yes the posterior vaginal wall or the posterior vaginal mucosa, perineal muscles the superficial and deep transverse perinei, bulbospongiosus and part of levator ani which are the 2 muscles that is the pubococcygeus and the iliococcygeus and your fascia covering the perineal muscles the transverse perineal branches of pudendal vessels and pudendal nerve subcutaneous tissue and the skin. So, these are the muscles which are cut. Now coming to the repair, repair I have told it is done in the 4th stage of labour that means, after the delivery of the placenta because after you repair the episiotomy wound you cannot you know manipulate or you know gain entry if you go again for manual exploration inside the uterus it can lead to some abrasion in the you know repair. So, it is better to put a gorge or compress the wound with a gorge to control the bleeding from the episiotomy wound and then try to explore inside the uterus whether there is any left out bits of placenta or membranes and when the bleeding is controlled the intrauterine bleeding is controlled the uterus is contracted the uterus is formed and then you go for episiotomy repair. Now, what is the main idea or the main goal to assure anatomical opposition to assure that the vaginal opening gets its previous you know anatomical structure right because it has some cosmetic value to maintain homeostasis to

obliterate any dead space because there may be some collection after the delivery which can lead to vulval hematoma.

So, we need to obliterate the dead space and the sutures are to be given without tension. Now they are done in 3 layers first is the vaginal mucosa that is you know sutured in continuous fashion continuous non interlocking non interlocking fashion. Sometimes when it is deep that time we go for interlocking to maintain the tension right and also it should be such that there is no dead space present below no dead space to be kept right. Next this is that first layer second is the perineal muscle layer the superficial and deep transverse perinei that is also done in continuous continuous non interlocking fashion. And lastly the third layer is the skin and subcutaneous tissue this is given you know in the subcuticular plane subcuticular plane and that will help in proper anatomical opposition though no in mediolateral there is some puckering present after the repair.

So, that is your this is the steps of repair see this is the apex this is the apex of the episiotomy wound. So, this is the triangle and this is the apex. So, first bite. So, this is I will use another pen. So, this is the first bite right you can appreciate this first bite is taken beyond the apex of the episiotomy wound and then you come towards outside from inside you come outside and you give these sutures in a continuous fashion non interlocking.

And what is the suture? Suture is chromic cat gut suture is chromic cat gut right suture is chromic cat gut and what is no this is number 1 number 1 chromic cat gut or you can give 2 0 vicryl right any one can be used this is delayed absorbable right. So, both are absorbable you need to you need not go for again you know cutting the sutures they will automatically get absorbed. So, that is the first step that is vaginal mucosa is getting sutured without tension not under severe tension that will lead to ischemia. So, it should be done you know in a you know beautiful manner. So, that there is no tension in the suture and also there is no dead space very very important to remember no dead space to be kept below the vaginal mucosa and the perineal muscles that space needs to be obliterated or there can be collection which will lead to you know further hematoma or infection or cellulitis or abscess after the delivery.

So, that is one. Next after the suturing of the vaginal mucosa you come to the perineal muscles. So, on both sides these are the perineal muscles these are the perineal muscles superficial and deep transverse perinei. Now you have to oppose these perineal muscles and that is also done by continuous non interlocking manner. So, you do this both sides you go and then you suture the perineal muscles. So, this is the second layer suturing of perineal muscles and third is your skin and subcutaneous tissue.

So, this is the skin this is the cut end of the skin right. So, this is the cut end of the skin and this is the yellow part is the subcutaneous tissue. So, you can see here the skin and subcutaneous

tissue has been sutured and in a subcuticular plane that is called as subcut, subcut suture. So, subcutaneous tissue and your skin is the last. Third layer third layer we are suturing and it should be approximately now approximated in the best possible manner because of cosmetic reason and now after that you give now go up till the vaginal hymen that is this part you go up till the hymen and then you put a knot there and that will go away with time because it is a absorbable suture.

After the episiotomy wound you can go for dressing regular vaginal douching with betadine solution you can apply some ointment stool softener in the form of liquid paraffin can be given to prevent any stretching of the incision site and you know painkillers in the form of NSAIDs can be given to decrease the pain right. And it is you know we occasionally advice the patient to maintain abstinence for the next say 1 to 2 months to for proper healing of the wound and maintain personal hygiene. So, that was regarding episiotomy wound and how to give the episiotomy, when to give the episiotomy, for whom to give not it is not given in a routine basis. So, we have discussed the indication and after that how to go about the repair of episiotomy wound and help in exact opposition of the wound without leaving any dead space and without you know without any undue tension undue tension in the suture. So, that you have to keep in mind for proper healing of the episiotomy and most commonly used is the medio lateral episiotomy right.

So, that was today's class and the references are from Williams obstetrics very very important book 26th edition. D.C.Dutta book of obstetrics and the James book on high risk pregnancy. So, thank you all for your patient hearing and keep reading and clear your doubts. Thank you.