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Professor Name: Dr. Barnali Ghosh

Department Name:Multidisciplinary

Institute Name: IIT Kharagpur

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Obstetrical Examination of antenatal mother (Clinical Study)

Good morning students. Good morning. Welcome you all to our session for the NPTEL online certified course on the topic and overview on maternal health, the antenatal, intranatal and postnatal care. I am Dr. Barnali Ghosh, an assistant professor working in the department of obstetrics and gynecology in B.C.Roy Medical College and Medical Research Centre, IIT Kharagpur. Today we will be discussing the obstetrical examination.

We have already discussed the various theoretical portion regarding inspection, palpation, the obstetrical grips and the fetal heart rate auscultation. Today we will be doing the clinical presentation of the main obstetrical examination, right. So, coming to the obstetrical examination which must be done from starting from 24 weeks onwards up to 36 weeks at each antenatal visit, right. So, number one is the general survey where we will go as the stepwise points that is the alert, conscious and cooperativeness of the patient, pallor, jaundice, edema all as done in the general survey.

Here what are important? Number one the pulse, the blood pressure and the weight measurement which must be repeated at each antenatal visit. Now coming to the obstetrical examination proper. Obstetrical examination before starting the examination you need to know three important definitions which are related to this examination. Number one is the lie of the fetus. Number two is the position of the fetus or the presenting part of the fetus and the attitude of the fetus.

Coming to lie of the fetus, what does that mean? It is the relation lie of the fetus is the relation between the maternal spine with the fetal spine or in other words you can say it is the relation of the long axis of the centralized uterus with the fetal spine. If these if the maternal spine and the fetal spine or the long axis of the uterus and the fetal spine they are parallel, right. So, this is longitudinal lie. If the fetus is at right angles then it is transverse lie and if it is obliquely placed then it is oblique lie. We can deduce the lie from obstetrical examination.

Now coming to the presentation that is the part of the fetus which is in the lower pole of the

uterus that is over the pelvic brim. Here from the four Leopold maneuvers we can ascertain the presentation of the fetus and the attitude of the fetus which is most commonly the attitude of flexion. All the joints of the fetus remains in our position of flexion within the uterus to form a globular mass to accommodate itself inside the uterine cavity and this attitude of whether it is in flexion or in extension can be assessed from the third and fourth Leopold maneuvers, right. Now, coming to the obstetrical examination proper. So, start of the before the start of the obstetrical examination you need to first take the consent of the patient which is very very important.

We have already taken the consent of this patient on whom we are going to examine. Next is evacuation of the bladder. The mother is asked to evacuate her bladder just before the examination and now the position of the patient. The patient is in dorsal position lying down at propped up the head end is propped up at 45 degree and the knees will be flexed semi flexed, right. So, just flex your knee a little bit.

So, this is the position of obstetrical examination. Now coming to inspection number one what we see inspection is just observing the abdomen. We can see a longitudinal central avoid swelling of the abdomen which probably is of uterine origin number one. So, there is a longitudinal avoid central or midline swelling of the abdomen and it is you know there is no scar mark the skin the skin overlying the swelling whether there are any incision mark or scar mark on the skin we have to inspect. There is no such scar mark.

You can see this hyper pigmented line this is called as the Linea Nigra which is passing through the midline, right. So, the Linea Nigra is visible. What are other marks? These are the stretch marks, right. So, these are called as the striae which are present on two sides in the lower abdomen. There are no other such any pathology of the skin.

Some reddish purpuric spots are present which may be due to no arctic area. Any itching over the skin can lead to this type of rash. No other scar mark or any other skin disorders present. Another thing to note is the position of the umbilicus whether the umbilicus is inverted or everted. In this case, the umbilicus is flushed with the skin.

It is just on the surface and it is in the midline. So, these are all the points that we deduce from the inspection. Now coming to palpation. Before palpation, most important is rubbing of the palms. You need to rub the palms to increase the temperature.

In case of cold temperature, you have to palpate the abdomen. So, the palm temperature will be, you know, will synchronize the temperature of the abdomen of the patient. Now, what are the points we go for palpation? Number one is the fundal height or the symphysio fundal height measurement. Number two is the different obstetrical grips or Leopold maneuvers which are

four in number of which the first three will be done facing the face of the patient and the last fourth Leopold maneuver will be done facing the leg end of the patient. So starting with the symphysio fundal height.

First, we need to centralize the uterus with the right hand. I am trying to centralize the uterus because the uterus in pregnancy will be little tilted to the right side that is dextro-rotated. So we need to first centralize this long axis of the uterus in the midline which will align along the maternal spine. Now with the ulnar border, this ulnar border of my left hand, I will start palpating from the xiphisternum and I will slowly come down, right? I will start palpating from the xiphisternum and I will slowly come down and the first resistance failed by my ulnar border, this will be the uterine fundus, right? So here I am starting palpating from the xiphisternum, I come down and here I feel the resistance. So now I mark with a pen the first point on the, where I find the fundus of the uterus, right? So this was done, this total procedure was done by centralizing the uterus with my right hand.

So I have taken the fundal height. Now I remove the hand. Now I have to measure the symphysio-fundal height. This measurement of the length from the symphysis pubis to the uterine fundus. This will be done by asking the patient to straighten her knees.

Now I palpate the symphysis pubis. This is the symphysis pubis which I can palpate and with the measuring tape, I go for the centimeter markings, right? So from the symphysis pubis, I place this and I measure. So I can see it is 36 centimeters, right? So the symphysio-fundal height comes out to be 36 centimeters. So what other inferences we get from the fundal height? What other inferences? Number one, we have already discussed that the uterus becomes an abdominal organ from 12 weeks onwards. So up at the level of symphysis pubis, the uterus is at 12 weeks.

Then it gradually goes, right? So at the umbilicus, it is 24 weeks. Here if we can divide this distance into four finger breaths into three parts. So 12 weeks, then 16 weeks, then 20 weeks and 24 weeks. So again I repeat from the symphysis pubis at the level of symphysis pubis, it is at 12 weeks, four finger breath, it is at the level of 16 weeks, then again four finger breath at the level of 20 weeks and at the umbilicus, it is at 24 weeks of pregnancy. From the umbilicus to the xiphisternum, again we can divide into three parts by four finger breadths.

From 24 weeks, it is at the level of 28 weeks. From 28 weeks, again four finger breath, it is at the level of 32 weeks and from the 32 weeks, at the xiphisternum is 36 weeks. From 36 weeks after the fetus gets engaged or it goes, it descends into the maternal pelvis, 36 weeks uterus fundal height will also decrease and at 40 weeks, it coincides with the 32 weeks uterus, right? So these are from the fundal height. Now measuring the symphysio fundal height from 24 weeks onwards, the centimeter, the symphysio fundal height when measured in centimeters, it will

correspond with the weeks of pregnancy. So here we get 36 centimeters that means it is 36 weeks of pregnancy, right? So this was the symphysio fundal height measurement and assessment of the weeks of gestation.

Now coming to the next part of palpation that is the obstetrical grips. So obstetrical grips are done with the palm of the hand and there are four leopold maneuvers. The first three will be done facing towards the face of the patient, right? So number one is the fundal grip. How to go about the fundal grip? You place the palm over the fundus like this and you palpate. What am I palpating? I am palpating a soft, irregular, non-ballotable mass, right? So in the fundal grip, I am palpating a soft, this is irregular, this is smooth and this is not ballotable.

So this signifies the podalic end or breech. So fundal grip, in the fundal grip, we get the breach of the fetus. So this was fundal grip. Now coming to the lateral grips. Lateral grip by placing the hand on two sides at the level of umbilicus.

Lateral grip, there will be two lateral grip. First I fix the right hand and I palpate with my left hand, right? So in the left lateral grip, I can palpate a smooth, curved structure, smooth, curved structure with a feeling of resistance. So this is the spine of the fetus. This is the right lateral grip finding. Coming to the left lateral grip, now fix the left hand.

I am fixing the left hand and now palpating with my right hand. In this left lateral grip, I can find some knob-like structures, irregular knob-like structures. So these are the limbs of the fetus. So this side is the spine of the fetus and this side are the limbs of the fetus.

This was the lateral grip finding. Now coming to the pawlick's grip, the third Leopold grip. What we assess from the third Leopold grip, we will assess the presentation because this, how to go about this? The ulnar border of my right hand will be on the symphysis pubis and I spread out the thumb and the four fingers and then slowly, slowly I will try to grasp the fetal part. Here I can palpate a hard globular, you know, ballotable structure. Slowly I can grasp and this is coming out to be hard, globular and ballotable. I push from this side and I can palpate the part on this side.

So this is a hard globular ballotable mass which signifies the cephalic end of the fetus. So the cephalic end is overlying the lower uterine segment or the maternal pelvis. So this is a case of cephalic presentation, right? So part of the fetus which is occupying the lower uterine segment is the presentation and in most cases, in majority of cases, it will be cephalic presentation. So it is a case of lie, longitudinal lie, presentation, cephalic presentation. So all the three Leopold maneuvers, this third Leopold maneuver is also called as the pawlick's grip.

Three Leopold maneuvers are done. Now I will turn towards the lower end, the feet end of the

patient, right? And I will go about for the fourth Leopold maneuver which is also called as the pelvic grip. This from this pelvic grip, we get two informations. Number one is the confirmation of the third Leopold maneuver or pawlick's grip, right? That is the presentation and number two is the attitude of the fetus whether there is flexion or extension and also we get information regarding the engagement of the fetus. So how to go about the fourth pelvic grip? So this is the fourth Leopold maneuver which is also called as the pelvic grip. With the two hands, I start from the anterior superior iliac spine and this is the inguinal ligament.

So my ulnar border will be parallel to the inguinal ligament and I start from the anterior superior iliac spine and I slowly slowly go downwards and backwards, right? And here at some point I will feel the fetal part. Here I can feel it is hard, it is smooth, it is ballotable. So this confirms that this is the cephalic end of the fetus. Now I will try to go more low down and here I can converge. So this is I can converge my fingers below the fetal presenting part.

I can converge the two hands below the fetal presenting part. So that means that the head is above the pelvic brim. That means that the head is still not engaged, right? And number three is the attitude of the fetus whether it is flexed or extended. How to know that? This is the spine. So when we palpate in the fourth Leopold maneuver, in case of cephalic presentation, we palpate a bony prominence on the presenting part.

So this along the spine, what we palpate, this will be the occiput, right? And towards the opposite side, the bony prominence will be the sinciput. So this is the occiput and here I can palpate. This is the sinciput. So this is the sinciput and this is the occiput. You need to now go for examination of every antenatal mother to experience these bony prominences.

Here this is the sinciput and as this is the spine, so on this side will be the occiput and here I can see that the sinciput is at a higher level than the occiput. This occiput is slow down. This sinciput is at a higher level. So that means that the head is well flexed, right? If it was in the same level or the occiput was above the sinciput, then it will be a case of fetal extension, right? So to know that, you just note on me, this is the occiput behind which is on the same line as the spine and here this is the sinciput which is on the opposite side of the fetal spine. So we have done with the fourth Leopold maneuver which is very important because it confirms the presentation, the attitude that is the flexion as well as it gives an idea whether engagement has taken place or not, right? So from this palpation, we have come to the conclusion that this is a case of longitudinal lie, cephalic presentation and well flexed fetus with the head still above the pelvic brim that is it is still not engaged.

Another thing is from the symphysio fundal height, it comes out to be a case of 36 weeks of pregnancy. So this was all regarding palpation. Now coming to auscultation that is fetal heart rate auscultation. Now in case of cephalic presentation, you need to know every point in case of

cephalic presentation, in case of well flexed fetus, the fetal heart rate mostly can be heard on the spinoumbilical line, right? This is one spine and this is the umbilicus. So this is the left spinoumbilical line of the mother and this will be the right spinoumbilical line.

So mostly in case of occiput anterior, in case of cephalic presentation, occiput anterior position, in case of well flexed fetus, we get the fetal heart rate on the spinoumbilical line. So this is the right side, the side on which the spine is present here because the fetal heart rate is examined through the spine of the fetus. So we have already palpated from the lateral grip that spine is present on the right side, this side. So the fetal heart rate is expected to be present on the right spinoumbilical line.

Now I will palpate the fetal heart rate. First, you have to palpate it from the diaphragm, right? First you have to palpate it by the diaphragm of the stethoscope. Again you have to centralize the uterus, right? You centralize the uterus and then you go for palpation. Yes, so here I feel the fetal heart rate, right? Here I feel the fetal heart rate. Now next what you need to do? You need to now see the maternal pulse, right? This fetal heart rate and the maternal pulse will not coincide. If this sound and the maternal pulse coincides, then it is not the fetal heart rate that you are hearing.

It is the sound of the uterine shuffle. But if the fetal heart rate and this maternal pulse does not, it should not coincide, right? So first you need to calibrate that. After you are confirmed that this is the fetal heart rate which you are listening, now what to do? With the, from the diaphragm, you change to the bell of the stethoscope and you change this. So you change to the bell of the stethoscope and now you will again palpate. And this palpation should be done for total one minute. You have a wristwatch with you and you need to see or measure the fetal heart rate for full one minute, right? So you have to count the fetal heart rate for full one minute and then the count will give you the fetal heart rate calculation.

So this was the auscultation, but in most cases what we do is with the Doppler, right? We have this handheld Doppler with us and in most cases we will go for the Doppler, right? So just placing the Doppler probe here. I have already fixed the position from auscultation and now placing on the same position, I can see the heart rate. I can also hear, the mother can hear, she is, you know, rest assured that the heart rate is present and you can see the fetal heart rate on the monitor and it is coming out to be around 140, 144 beats per minute, right? So from 110 to 160 it is normal. So now you can say that yes, the fetal heart rate is within normal limits.

So we have done with the auscultation part. Now the next is your pervaginal examination. Pervaginal examination is not routinely done in case of antenatal patients. It is done only in selected cases where, you know, patient is coming with labor, with pain abdomen, with discharge parvagina where you suspect any, you know, rupture of membrane or preterm labor,

then you need to assess the stage of labor, whether it is confirmed, whether to confirm that yes, the mother has gone into labor, you know, need to go for per vaginal examination and that too under strict aseptic conditions. So routinely we will not do the parvaginal examination. This was all regarding the obstetrical examination starting right from inspection, palpation and auscultation.

That is all and together with it, I have already told we will add the general survey points, right? And very, very important is be gentle, explain the procedure to your patient, to the mother and make her comfortable so that during the process of palpation, there is no anxiety of the mother and also the palpation should be done when the uterus is in relaxed condition. There is no Braxton Hicks contraction. If there is Braxton Hicks contraction, you need to wait for the contractions to go away when the uterus is relaxed only during that period, the obstetrical palpation should be done, right? So this was all for today's session. We will meet you again in our next video.

Keep studying, keep learning and keep doing the questions. Thank you.