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# UNIT 14 BREECH PRESENTATION, TRANSVERSE LIE AND TWINS

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## 14.0 OBJECTIVES

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After completing this unit, you should be able to:

- diagnose breech presentation and identify the cause if any;
- recognize maternal and foetal complications of breech;
- manage breech presentation during pregnancy and labour;
- diagnose transverse lie and its complications;
- manage transverse lie;
- diagnose twin pregnancy and its complication; and
- manage twin pregnancy.

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## 14.1 INTRODUCTION

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In the previous unit you learnt how to diagnose malpositions i.e. occipito-posterior position and other abnormal presentation like brow, face, cord and compound presentations, their complications and management.

In this unit, you will learn about the breech presentations, transverse lie and twin pregnancy that you may rarely encounter in your antenatal clinic or labour room. You will learn how to recognize these conditions, realize the risks they pose to the mother as

well as the baby and how they increase the perinatal mortality and morbidity. You will then learn to identify these high risk pregnancies and refer them to the higher centre for delivery.

Rarely, a woman may present to you with breech presentation during active labour. You may not have enough time, or it may not be safe to refer her to a tertiary centre in active labour. This unit will teach you how best to handle this emergency situation and deliver the woman vaginally.

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## **14.2 BREECH PRESENTATION**

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In breech presentation, the foetus is in the longitudinal lie. The head lies at the fundus and the buttock (podalic and breech end) lies at the brim.

Before the 30th week of pregnancy, the breech presentation is encountered in about 25% pregnancies but as the foetus grows, the incidence of breech drops to 3-4% at term. This is explained by the fact that a small foetus, occupying a large space in the uterine cavity with plenty of liquor can move freely and occupy an abnormal presentation. With diminishing of liquor near term and the foetal size growing, the foetus tends to steady in one presentation. The foetal shape fits best in pear shaped uterine cavity as vertex (cephalic) presentation in 96-97% cases.

### **14.2.1 Aetiology and Types**

Many a times, the cause of breech presentation remains undetected and it is assumed that the foetus lies in breech presentation by mere chance. Nevertheless, several factors are known to produce this presentation.

#### **Aetiology**

- Prematurity as explained earlier.
- The factors preventing engagement of the head at term, such as contracted pelvis and presence of a pelvic tumour.
- Placental causes— Low lying placenta (placenta praevia) or its cornual attachment resulting in abnormal shape of the uterine cavity.
- Foetal cases i.e.. small foetus, a big baby, or a hydrocephalic head which cannot accommodate in the lower uterine segment, but can lie comfortably at the uterine fundus.
- Enlarged uterine cavity as in hydramnios and multiple pregnancy.
- Abnormally shaped uterine cavity as seen in bicornuate uterus, subseptate uterus and uterine fibroid distorting the uterine cavity.

Aetiology of recurrent breech presentation are:

- Contracted pelvis
- Abnormal shaped uterus (malformation of uterus)

#### **Types**

There are two main varieties of breech presentation (Fig. 14.1):

- Complete breech
- Incomplete breech
  - Breech with extended legs
  - Knee and footling presentation

**Fig.14.1: Attitudes of Breech Presentation**

### **Complete Breech**

In this, the attitude of flexion of the foetus is maintained. The breech lies at the pelvic brim, and the parts that present are buttocks and external genitalia along with one or both feet lying slightly above the buttocks. This presentation is commonly encountered in a nulligravida. Although, the delivery can be easy, the risk of cord prolapse is considerable (5%).

### **Incomplete Breech**

In **breech with extended legs**, the legs are extended at the knee and flexed at hip. The feet, therefore, lie at the fundus by the side of the head. This presentation is most often seen in primigravidae. The risk of cord prolapse is as low (0.5%) as in vertex presentation. The vaginal delivery, however, can be difficult and traumatic, because the legs may not deliver spontaneously, and normal vaginal delivery may be arrested.

In **breech with knee presentation**, extension at thigh and flexion at knee occurs singly or on both sides. Footling presentation in breech occurs singly or doubly when extension occurs at both thigh and knee. In knee and footling breech presentation, the baby slips through the undilated cervix but delivery of the shoulders and head get delayed, causing severe asphyxia and often stillbirth. Cord prolapse is also common.

The breech presentation is said to be uncomplicated or complicated. Uncomplicated breech is when it is not associated with any obstetrical complications. Complicated breech is when it is associated with factors which affect outcome of pregnancy like prematurity, contracted pelvis, PIH, placenta praevia, multiple pregnancy, IUGR and medical disorders.

Problems that arise during labour and delivery, like cord prolapse, are not included in complicated breech. They are referred to as abnormalities or complications of delivery.

Positions of breech presentation is shown in the diagram below (Fig.14.2). Left sacro-anterior (LSA) is called the 1st position. Similarly RSA, RSP and LSP are called as 2nd, 3rd and 4th positions respectively.

Fig.14.2: Positions of Breech Presentation

14.2.2 Diagnosis and Differential Diagnosis

Table 14.1: Diagnosis of Breech Presentation During Pregnancy and Labour

	Complete	Incomplete Breech with Extended Legs
<b>Diagnosis During Pregnancy</b>		
1) Lie	Longitudinal	Longitudinal
2) Fundal height and shape	Corresponds to period of gestation and shape of abdomen as in vertex presentation	Corresponds to period of gestation and shape of abdomen as in vertex presentation
3) Fundal grip	Head is felt as a well defined, hard globular mass freely ballotable	Head may be felt slightly to the side opposite to the back may not be well defined if it is splinted by the extended legs. The feet are felt at the fundus as small parts
4) Lateral grip	Back to one side and small limbs on the other side	Back to one side and small limbs on the other side
5) Pelvic grip	Breech felt as a soft irregular mass often non-engaged. Small parts are felt in the suprapubic region, and are identified as feet	Breech is felt as a firm mass, is often engaged at term. Small parts (feet) not felt suprapubically .

	<b>Complete</b>	<b>Incomplete Breech with Extended Legs</b>
6) Foetal heart sounds	Heard near the umbilicus, similar in location as in vertex presentation, but at a slightly higher level. In the first position, foetal heart is louder, because the anterior shoulder is closely applied to the maternal abdominal wall	Same as in complete breech
7) Vaginal examination	Soft, irregular parts felt high up at the pelvic brim	Breech may be engaged in the pelvis
<b>Diagnosis in Labour</b>		
Early labour	Sausage shaped bulging bag of membranes felt. Small parts difficult to palpate and identify	Breech felt, feet not felt
Late labour	When the membrane ruptures, breech, anus, sacrum, external genitalia felt. Meconium in the anus. Small parts are identified as feet (presence of heel and absence of thumb)	Breech, anus and external genitalia identified

### **Differential Diagnosis**

Occasionally, it is difficult to make an accurate diagnosis of breech with extended legs especially in primigravida. The feet are felt at the fundus; and if they cover the head, the latter becomes ill-defined and non-ballotable. If the unbooked patient is seen in active labour, breech may be mistaken for the face presentation. The anus is mistaken for mouth. If alveolar margins are felt and occasional sucking reflex is felt, it confirms a face. Presence of meconium and anal sphincter gripping the finger, on inserting a finger in the opening, confirms breech presentation. In case of doubt, ultrasound or X-ray will help. It is dangerous to mistake shoulder presentation for breech, as uterine rupture will invariably ensue if shoulder presentation is allowed to labour.

Breech presentation is difficult to diagnose in hydramnios because of the difficulty in palpating the fetal parts.

### **Investigations**

Ultrasound has now universally replaced X-ray abdomen for the confirmation of diagnosis. It gives much more information than the X-ray, and at an earlier gestational age. Unlike X-ray, ultrasound does not cause radiation to the mother and foetus. Therefore, it is safe, can be done at any gestational period and can be repeated if required. Ultrasound gives informations regarding:

- Diagnostic confirmation of breech presentation
- The types of breech presentation
- Maturity and size of the foetus
- Congenital foetal anomaly, such as hydrocephalus
- Placental localization

- Multiple pregnancy
- Hydramnios
- Uterine abnormality

These informations are useful in determining the mode of breech delivery. The other investigation required is pelvic assessment, and detection of the presence or absence of a pelvic mass. Elective caesarean section is decided in presence of contracted pelvis and pelvic tumor.

**Check Your Progress 1**

1) What is the incidence of breech presentation?

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2) Name two causes of recurrent breech presentation.

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3) True or False:

- i) Breech with extended legs increases the risk of cord prolapse. (T/F)
- ii) Breech with extended legs are more common in primigravidas. (T/F)

**14.2.3 Mechanism of Normal Breech Delivery**

The diameter of engagement is bitrochanteric (10 cm) which enters the pelvic brim in one of the oblique diameters. As the breech descends, internal rotation occurs at the outlet bringing the bitrochanteric diameter in the antero-posterior diameter of the outlet and the anterior buttock comes to lie behind the symphysis pubes. Anterior buttock impinges against the pubic symphysis lateral flexion of spine occurs. The posterior hip glides over the perineum. The anterior hip slips out under the pubic symphysis followed by posterior hip. At this stage, the shoulders (bisacromial diameter of 11.8 cm) engage in the same oblique diameter as the buttocks at the pelvic brim. With further descent, the internal rotation brings the shoulders in the antero-posterior diameter of the outlet. The anterior shoulder impinges against pubic symphysis, the posterior shoulder and arms glide over the perineum. The anterior shoulder slips out from under the pubic symphysis followed by posterior shoulder. The head gets engaged in the opposite oblique diameter of the pelvic brim. Internal rotation of the head at the outlet brings the occiput anteriorly with the nape of the neck behind the pubes, the forehead in the sacral hollow and the face upon the pelvic floor. The head is delivered by maintaining flexion, first by the chin, face and then fore-head successively passing over the perineum.

The posterior position of the breech is more risky and difficult to deliver for two reasons. Firstly, it is difficult to maintain flexion of the foetal body, and secondly, the long internal rotation may fail, causing arrest of breech delivery.

Breech delivery is more difficult than vertex, because the shoulders are larger than the buttocks and may get arrested during delivery. The most difficult part to deliver is the head, because there is no time for moulding. Too slow a delivery (more than 5 minutes) of the head may cause asphyxia due to cord compression. On the other hand, too quiet a delivery will result in sudden compression of the head, tear of the tentorium cerebelli, rupture of vein of Galen and this results in intracranial haemorrhage.

**14.2.4 Risks of Breech Delivery**

Breech delivery does not increase the maternal mortality, but poses certain risks and morbidity.

### **Risks to the Mother**

- Risks of operative procedures, such as caesarean section.
- Risks of general anaesthesia for caesarean section as well as vaginal operative manoeuvres.
- Perineal and cervical lacerations.
- Bleeding due to laceration.
- Infection.

The primigravidas are at a higher risk than multigravidas. The baby often presents as breech with extended legs and vaginal delivery can be complicated. Operative delivery is often required and this may be traumatic both to the mother and the baby.

The risks of caesarean delivery include risks of anaesthesia, haemorrhage, infection, embolism and future obstetric risks, on account caesarean scar.

### **Risks to the Baby**

The perinatal mortality in breech delivery is high, ranging between 3-10% in uncomplicated deliveries and 20-30% with associated complications.

Mortality is due to:

- Intracranial haemorrhage is responsible for three-fourth of the perinatal deaths. In vertex presentation, the head descends with gradual moulding. In breech, the after-coming head should be delivered in 5-7 minutes. Rapid delivery can cause sudden compression of the head and tear of tentorium cerebelli with intracranial haemorrhage.
- Delay in delivery will cause cord compression and asphyxia which can lead to intracranial damage. A premature baby is more likely to sustain brain damage.
- Asphyxia due to cord prolapse and compression accounts for one-fourth of all perinatal deaths. The cord prolapse is more common in a complete breech (5%) than in breech with extended legs (0.5%).
- Damage to the liver, suprarenal glands and kidneys is caused if the foetus is held by its abdomen.
- Fracture of cervical spine occurs if an attempt is made to deliver the aftercoming head before the nape of the neck appears behind the symphysis pubes.

The morbidity includes:

- Fracture femur, humerus, and the clavicle.
- The damage to the brachial plexus if excess traction is applied to the shoulders, resulting in Erb's paralysis.
- Haematoma of the sterno mastoid muscle.
- Physical and mental handicap due to traumatic vaginal delivery.
- Risks of external cephalic version (see later).

### **Check Your Progress 2**

1) True or False:

- i) X-ray is safer than ultrasound. (T/F)
- ii) Ultrasound can detect placental localization. (T/F)
- iii) X-ray can diagnose uterine abnormality. (T/F)
- iv) X-ray can detect hydrocephalus. (T/F)
- v) X-ray can diagnose hydramnios. (T/F)

2) List three risks to the mother in breech delivery.

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3) List five morbidities to the baby during vaginal breech delivery.

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4) Fill in the gaps:

- i) Too rapid delivery of the aftercoming head causes.....
- ii) Asphyxia occurs due to ..... and .....
- iii) Damage to the brachial plexus can cause.....paralysis.
- iv) Fracture of the.....occurs if head is delivered before the nape appears under the pubic arch.

### 14.2.5 Management During Pregnancy and Labour

Management is described during pregnancy and labour.

#### Management during Pregnancy

Breech presentation is not uncommon before 34 weeks. But in most cases spontaneous version occurs by 32-34 weeks. It is therefore, prudent to observe 'wait and see' policy till 34 weeks. If breech persists after 34 weeks, it is better to refer the woman to the referred centre for further management.

#### Management during Labour

If the patient is in early labour and there is enough time to reach the referral centre, then the patient may be referred for delivery at the referral centre. If the patient reaches late in labour, you will have to conduct the delivery which is described below.

Assisted breech delivery is the best method, the shoulders and head being gently manipulated during delivery.

#### Management of 2nd Stage of Labour

- i) As soon as the perineum starts to bulge and the anterior buttock shows at the vulval orifice, the patient is brought to the edge of the table, put in lithotomy position and her legs held in stirrups.
- ii) The anaesthetist and paediatrician should be present. The long obstetric forceps should be autoclaved and kept ready for delivery of the aftercoming head.
- iii) It is prudent to add syntocinon 2 units in the drip to maintain uterine contractions and expedite the delivery. Any delay in the 2nd stage can cause cord compression and anoxia.
- iv) As the buttocks start distending and thinning the perineum, pudendal block with 1% lignocaine is given. This facilitates any vaginal manoeuvre needed to deliver the baby.
- v) Episiotomy is done both in primi and multigravida at the time when breech does not recede back between uterine contractions. This widens the outlet for an easy delivery, makes vaginal manoeuvres easy and prevents a sudden compression of the aftercoming head.

- vi) The buttocks are born by the mother bearing down with each contraction. The legs may need to be hooked out gently if they are extended. The body slips through upto the umbilicus. It is to be remembered not to pull on the baby.
- vii) The baby is now held by the left hand and a loop of the umbilical cord gently eased out on the side to avoid compression. Ensure that the back of the baby is facing you. From now on, the condition of the foetus can be gauged by recording the cord pulsations. The delivery of the rest of the body must be completed in 5-10 minutes, otherwise cord compression will cause asphyxia and stillbirth.
- viii) The foetus is covered with a towel and held by the femoropelvic grip with both the hands and body hanging to maintain the flexion of the foetal spine. At no stage should the baby be held by the abdomen, because the liver, suprarenal glands and kidneys may sustain injury.
- ix) Further bearing down brings the lower angle of the anterior scapula under the symphysis pubes. Look for the medial border of the scapula. If it is parallel to the spine, the arms are flexed. Now is the time to feel for the arms across the front of the chest, hook a finger in the bend of elbow and deliver them. The anterior arm is delivered first followed by the posterior arm, after gently lifting the baby forwards.
- x) The baby is allowed to hang by its weight, baby not touching any part of the labour table for 1-2 minutes. Be ready to hold the baby if head suddenly comes out.

A gentle suprapubic pressure by the assistant helps to maintain the head in flexed position.

Once the nape of the neck hair line becomes visible and suboccipital area occupies the subpubic region, it is time to deliver the head.

The obstetrician holds the baby's ankles by his right hand and swings the body through three-fourth of a circle over the mother's abdomen: At the same time, the assistant maintains gentle downward traction suprapubically. This brings successively the chin, face, forehead and lastly the occiput out of the introitus. The mouth of the baby can be cleared of mucus as the mouth is being delivered.

This method of delivery of head is known as Burn-Marshall technique. When gravity and bearing down assists the head to descend maintaining flexion and when the nape of neck is seen while exerting slight traction, the body is lifted to the horizontal position. The face will appear at the vulva and further lifting the baby towards mother's abdomen, head is delivered gradually.

Alternatively, the head can be delivered with outlet forceps. The advantages of forceps delivery are:

- i) Direct traction on the head avoids neck injury.
- ii) Controlled traction by forceps avoids sudden compression of the head.
- iii) The forceps should be applied only when the nape of the neck becomes visible under the pubic arch. The baby is held upwards by an assistant and forceps applied from below. The traction is made downwards and then upwards releasing successively the chin, face, forehead and lastly the occiput. The cord is clamped, cut and baby handed over to the paediatrician. Intravenous methergin 0.2 mg is given. Alternatively 5 units syntocinon may be added to the drip and the placenta delivered in the usual manner. At the end of delivery, uterus is checked for retraction and contraction, the cervix and vagina explored for any laceration. Episiotomy and laceration if any are stitched.

### **Abnormal Breech Delivery**

Difficulty may be encountered during the breech delivery and unless immediate vaginal manoeuvres are undertaken, the foetus may die intrapartum. Breech with extended legs, and big baby are high risk cases. So also a premature and IUGR baby on account of high risk of cord prolapse and sudden compression of the aftercoming head. It may happen

that a woman may be brought to you in advanced stage of Breech delivery and there will be no time to transfer her to FRU. You should, therefore, know how best to conduct a breech delivery. You have already learnt to conduct a normal breech delivery. Now, you will learn the problems encountered and how to overcome these problems. The problems encountered are:

- i) Breech may be arrested at the pelvic brim or mid cavity.
- ii) Breech may be arrested at the outlet.
- iii) The shoulders may be arrested.
- iv) The head may get arrested in the pelvic cavity.

Causes of breech arrested at the brim are:

- i) Contracted pelvis
- ii) Big baby
- iii) Uterine inertia

If the breech fails to enter the pelvis even by the late 1st stage of labour or get arrested at midcavity, the decision, whatever may be the cause, is to perform caesarean section if the baby is alive and avoid traumatic breech extraction. You should transfer this woman to FRU at the earliest.

Causes of arrest of breech at outlet are:

- i) Rigid perineum—episiotomy helps
- ii) Uterine inertia—syntocinon drip should augment labour pains.
- iii) Breech with extended legs is a common cause of delay in delivery. The extended legs arrest the progress because the legs splint the body and also because the wedge formed by the head, shoulders and the feet is too large to enter the pelvic brim.

The following procedures may be carried out depending upon the necessity:

- i) Groin traction
- ii) Pinard's manoeuvre
- iii) Bring down the legs under general anaesthesia
- iv) Breech extraction

i) ***Groin Traction***

The groin traction is made during the uterine contraction by placing a finger over the anterior groin and exerting a moderate force downwards and forwards. The traction should be more towards the trunk rather than towards the thigh, otherwise there is a possibility of fracture femur. The simultaneous fundal pressure will help. Sometimes, the groin traction fails especially in breech with extended legs. Pinard manoeuvre is then employed to draw down a leg.

ii) ***Pinard's Manoeuvre***

This is done under general anaesthesia. The hand is passed into the uterus along the ventral aspect of the foetus and the fingers are placed along the anterior thigh with the finger tips in the popliteal region. The thigh is then pressed against the trunk and outwards, causing the leg to be flexed, and the foot comes lower down. The foot is grasped and gently eased out. The hand used in Pinard's manoeuvre corresponds to the leg to be brought down. The further delivery is completed by breech extraction. If the anaesthetist is not available do the procedure under deep sedation.

- a) **Traction on the breech**
- b) **Extended arms: grip on foetus to rotate shoulders (in direction of arrow) to bring the left arm posterior**
- c) **Extended arms: bringing down the posterior left arm**
- d) **Extended arms: subsequently bringing down the anterior right arm without rotating the foetus**

e) **Extended arms: rotation of foetus (in direction of arrow) to bring right anterior arm posterior for delivery by classical method**

f) **Extended arms: right dorsal or nuchal displacement. Rotation of foetus to disengage the arm**

g) **Jaw and shoulder traction: first stage of traction**

h) **Jaw and shoulder traction: second stage of traction**

**Fig. 15.3: Assisted breech delivery (Munro Kerr-Chassar Moir). Preliminary Postero-lateral perineotomy should be made in all patients, other than very relaxed multigravidae.**

iii) ***Bringing down a leg***

When the liquor is drained and the uterus is retracted over the foetus, Pinard's manoeuvre does not succeed, and it becomes necessary to bring down a leg under anaesthesia (or deep sedation). The patient is put in Lithotomy position and the bladder is emptied.

The appropriate hand (corresponding to the leg to be brought down) is passed into the uterine cavity and foot identified by its heel and absence of thumb. It is then drawn down gently so that the leg is flexed on the thigh and gently eased out. The anterior leg should be delivered first and then the posterior, otherwise the anterior buttock may catch on the symphysis pubes. The whole procedure should be done during uterine relaxation. Breech extraction follows the delivery of the legs. If you have time to transfer her to FRU, do so.

iv) ***Breech extraction***

Breech extraction is associated with high perinatal mortality and morbidity.

The indications are:

- a) Following bringing down a leg under general anaesthesia.
- b) Foetal distress in the 2nd stage.
- c) Cord prolapse in the 2nd stage.
- d) Maternal distress and non-progress of labour in the 2nd stage.

**Arrest of the Shoulder**

Arrest of shoulder occurs due to extension of arm, big baby, displacement of arms behind head (nuchal displacement). Extended arms are diagnosed by ringing of scapula and not finding arms in front of chest. The arms are delivered either by:

- Loveset manoeuvre or
- Classical method

a) ***Loveset manoeuvre***

Advantage of this manoeuvre is there is no need to introduce the Breech Presentation hand in the vagina or uterus. The anaesthesia therefore is not needed. The inclination of the pelvis is such that the posterior arm is lower than the anterior arm, and can be delivered easily if it is rotated and brought in front under the symphysis pubes.

The foetal body is held in the femora-pelvic grip and is lifted upwards, further lowering the posterior arm. Keeping the body elevated, it is rotated, the back facing you until 180° rotation is complete. The body is now lowered with the result that the posterior arm emerges anterior under the symphysis pubes, and is hooked out. The other shoulder now lying posteriorly is brought down in an identical manner.

b) ***Classical method***

The posterior arm is delivered first. This is done by grasping the foetus by femuro-pelvic grip and gently drawing down the foetus during uterine contractions until the lower end of the scapula is visible. When the scapula appears, the body is grasped by the thorax with the thumbs parallel to the spine and the body rotated by the shortest route so that the shoulders lie in the anteroposterior diameter of the outlet. The body is now lifted forwards and to the side to which ventral aspect of the foetus is directed. This brings the posterior arm further down. The hand corresponding to the foetal hand to be brought down is introduced along the arm until the bend of the elbow. By pressing the elbow, the posterior arm comes within the reach and is gently hooked out. To deliver the anterior arm, the baby is pressed downwards and the arm delivered as with the posterior arm. If this fails, the body is rotated, keeping the back anterior until the anterior shoulder comes under the hollow of the sacrum and then delivered in a similar fashion.

**Arrest of the Head**

If the nape of the neck is visible, forceps can be applied. When the nape of the neck is not yet out or the head remains unrotated, Mauriceau-Veit Smellie method of jaw flexion and shoulder traction is employed. The fingers of the right hand are forced over the shoulders and the left hand maintains flexion over the jaw. With the help of suprapubic pressure given by the assistant, the head is drawn down, rotated to bring the occiput under the symphysis pubes and delivered by movement of forward rotation of body allowing chin, face—the rest of head to be born.

**Craniotomy:** If the baby is dead, occipital bone is perforated. In a Hydrocephalic head, the occipital bone is perforated with 16 no. spinal needle and cerebrospinal (CSF) fluid is drained. If the spine bifida is present, a catheter can be inserted through this and CSF fluid drained. Deflation of a hydrocephalic head is very easy and you can perform it. It will be better if you can perform craniotomy in your centre; transferring the woman with baby's body hanging out and head stuck in the pelvis may delay the delivery and at times cause bladder fistula. You can do craniotomy under canal block. Deflating a hydrocephalic head needs no anaesthesia.

**Preventive Measures in Breech Presentation**

Early diagnosis and timely referral to the tertiary centre well equipped with the operation theatre for breech delivery and neonatal care will reduce the foetal loss and maternal morbidity.

**Neonatal Care**

The baby at birth may be asphyxiated and needs oxygen and resuscitation. The paediatrician should look for intracranial damage, brachial plexus paralysis and any fracture. The baby should be watched for convulsions, and during infancy for physical and mental handicap.

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## 14.3 TRANSVERSE LIE

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Transverse lie occurs when the long axis of the foetus is perpendicular to the long axis of the uterus.

Incidence is 1 in 300 births. It is common in premature and macerated foetuses, and 5 times more common in multipara than in primigravida.

There are four types of transverse lie i.e. dorsoanterior, dorsoposterior, dorso inferior, and dorsosuperior. In transverse and oblique lie the back is usually anterior (dorsoanterior) with the head most often to the mother's left. The foetal attitude is one of flexion. Though dorsoposterior positions are less common they inevitably cause foetal extension with greater risk of hand or cord prolapse and associated twisting of the foetal spine. Rarely the back can be inferior or superior (dorsoinferior or dorsosuperior).

**14.3.1 Etiology**

- 1) Multiparity, because of lax abdominal wall
- 2) Prematurity
- 3) Factors preventing engagement of the head—contracted pelvis, fetopelvic disproportion, placenta previa, fibroid and ovarian tumor
- 5) Uterine anomalies like subseptate and bicornuate uterus
- 6) Polyhydramnios because excess liquor leads to unstable lie
- 7) Twin pregnancy

## 14.3.2 Diagnosis

### Abdominal Examination

**Inspection:** The uterus looks broader and often asymmetrical, instead of the normal pyriform shape.

### Palpation:

- Fundal height is less than the period of amenorrhea
- Fundal grip—foetal pole (breech or head) is not palpable
- Lateral grip—soft, broad irregular breech is felt on one side of midline and smooth, hard and globular head is felt on the other side. The head is usually at a lower level in one iliac fossa.

The back is felt anteriorly across the long axis in dorsoanterior or the irregular small parts are felt anteriorly in dorsoposterior.

- Pelvic grip—The lower pole of uterus is empty.

**Auscultation:** Foetal heart sound is heard easily at or below umbilicus in dorsoanterior position, and is at a higher level and often indistinct in dorso-posterior position.

### Vaginal Examination

Vaginal examination is best avoided until placenta praevia has been excluded by ultrasound.

The most important finding is a negative one; neither the head nor the breech can be felt. The presenting part is high. In some cases one may actually feel the shoulder, a hand the rib cage, or the back. Because of the poor fit of the presenting part to the pelvis the bag of waters may hang into the vagina.

### Ultrasonography

Ultrasonic examination will confirm the diagnosis, rule out placenta praevia and can detect abnormalities in the foetus.

### X-ray

It can be used when ultrasound is not available

## 14.3.3 Complications

There is no mechanism of labour in transverse lie with average sized foetus. Because the presenting part does not fill the inlet, the membranes tend to rupture early and may be followed by prolapse of a foetal arm or the umbilical cord. Both are serious complications necessitating immediate action.

Prognosis depends upon the management. With early diagnosis and proper treatment the outcome is favourable. Neglect leads to the; death of almost all infants and puts the mother in serious danger.

**Neglected shoulder presentation** means the series of complications that arise out of shoulder presentation when it is left uncared for in labour. Such complications are impacted shoulder leading to obstructed labour and rupture uterus with clinical evidence of dehydration, ketoacidosis, shock and sepsis, eventually leading to maternal death.

## 14.3.4 Management

When transverse lie present after 37 weeks of pregnancy or during labour, they should be referred to referral centre.

Check Your Progress 3

1) Enumerate the causes for transverse lie.

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2) What should you rule out before doing vaginal examination in a case of transverse lie.

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3) Define neglected shoulder presentation.

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4) What is the only treatment for transverse lie at term or in labour.

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## 14.4 TWIN PREGNANCY

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When more than one foetus simultaneously develops in the uterus, it is called multiple pregnancy. Simultaneous development of two foetuses (twins) is the commonest; although rare development of three foetuses (triplets), four foetuses (quadruplets), five foetuses (quintuplets) or six foetuses (sextuplets) may also occur.

According to Hellin’s rule (1895), the mathematical frequency of multiple birth is, twins 1 in 80 pregnancies, triplets 1 in 80<sup>2</sup>, quadruplets 1 in 80<sup>3</sup> and so on.

### 14.4.1 Etiology

The etiology of multiple pregnancy is unknown in most cases. The frequency of uniovular twins remains constant throughout the globe and is due to extraneous cause in the local environment in blastomere stage. It is the wide variation in the prevalence of binovular twins which is responsible for the fluctuation in the overall incidence of twins in different populations. Binovular twins are three times more common than uniovular twins. The cause is either hereditary or due to multiple ovulation induced by drugs in infertility or in IVF programme (multiple embro transfer).

#### Binovular Twins

Binovular twins (syn; fraternal, dizygotic) result from fertilization of two ova by two sperms during a single ovarian cycle: The babies bear only fraternal resemblance to each other (that of brothers and sisters from different births) and hence are called fraternal twins. Binovular twins are dichorionic diamniotic.

Prevalence of binovular twins is related to:

**Race:** The frequency is highest amongst Negroes, lowest among Mongols and intermediate among Caucasians.

**Hereditary:** A tendency to plural births does run in families, more often on the maternal side.

**Age:** The maximum incidence being between 30-35 years. Incidence of twins is markedly reduced thereafter.

**Parity:** Incidence is increased with increasing parity.

**Iatrogenic:** 20-40% of pituitary gonadotropin and 5-6% of clomiphene induced ovulations result in multiple pregnancy.

### **Uniovular Twins**

Uniovular twins arise from the division of one fertilised ovum into two separate embryos. As might be expected, uniovular twins (monozygotic) are like two beans out of the same pod and are always of the same sex and identical.

### **Genesis of Uniovular Twins**

The type of placenta that develops in a monozygotic twin pregnancy is determined by the time at which cleavage of the fertilized ovum occurs. If twinning is accomplished during the first 2 to 3 days, two amnions and two chorions (2 placentas) are formed. If the split occurs between 3 to 8 days a diamniotic monochorial placenta develops. Between 8 to 13 days, the amnion has already been formed and the placenta is therefore monoamniotic and monochorionic. Embryonic cleavage between 13 -15 days results in conjoined twins with a single amnion and chorion; beyond that point, the process of twinning cannot occur. Conjoined twins are extremely rare. Monoamniotic twins will have high mortality because of cord entanglement.

### **Check Your Progress 4**

1) What is the incidence of twin and triplet pregnancy according to Hellin's rule ?

.....

2) Which twin is more common, binovular or uniovular?

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### **14.4.2 Diagnosis**

Early diagnosis and appropriate management will go a long way in preventing the complications associated with twin pregnancy.

#### **History**

- a) History of ovulation inducing drugs (especially gonadotropins and clomiphine) for infertility.
- b) Family history of twinning.

#### **Symptoms**

- a) Increased nausea and vomiting in first trimester.
- b) Cardio respiratory embarrassment in later months due to over distension of uterus.
- c) There is a greater tendency towards swelling of the legs, varicose veins and hemorrhoids.
- d) Unusual rate of abdominal enlargement and excessive foetal movements may be noticed by a parous mother.

#### **General Examination**

- a) Anaemia is more common than in singleton pregnancy. This is because of increased demand by the foetuses. Both iron deficiency and folic acid deficiency prevails.
- b) Unusual weight gain, not explained by toxemia or obesity, is an important feature.
- c) Incidence of pre-eclampsia is increased (25%).

### Abdominal Examination

- a) **Inspection:** The elongated shape of a normal pregnant uterus is changed to a more “barrel shape” and the abdomen is unduly enlarged.
- b) **Palpation:** The height of the uterus is more than the period of amenorrhea. This discrepancy may only become evident from mid pregnancy onwards. Foetal bulk seems disproportionately larger in relation to the size of the foetal head. Palpation of too many foetal parts, finding of two foetal heads or three foetal poles makes the clinical diagnosis almost certain.
- c) **Auscultation:** Auscultation may be useful as a confirmatory sign. It would be unwise to rely on the auscultatory findings alone to make a diagnosis. If two independent observers listening simultaneously hear two foetal hearts distinctly in two different areas, well separated from each other, the foetal hearts differing in frequency by at least ten beats, the possibility is that it is a case of twin pregnancy.
- d) **Hydramnios:** Hydramnios, which occur in 12% of these cases, make abdominal palpation and auscultation of foetal heart difficult.

### Internal Examination

Occasionally, it may be possible when the woman is in labour to make out the presence of one cephalic pole distinctly by vaginal examination and feel the other at the fundus by abdominal palpation. The size of head and may be breech which is smaller than expected from the abdominal examination, make you suspect the presence of another foetus.

### Role of Ultrasound

The importance of early diagnosis of twin pregnancy has already been stressed.

Ultrasound as early as 6 weeks will show two gestational sacs. Foetal heart motion is seen by eight weeks. An argument often used in support of universal ultrasound screening for all pregnant woman during the second trimester is that it would help in the early diagnosis of multiple pregnancies with almost 100 per cent accuracy.

Ultrasound would also detect intrauterine growth retardation, twin to twin transfusion syndrome, hydramnios and congenital anomalies (all of which are more common with uniovular twins).

In dichorionic, diamniotic pregnancies, the dividing membrane appears thick by ultrasound, with a thickness of 2 mm or more, as it has 4 layers. In monochorionic, diamniotic pregnancies, the membrane has only two layers, and is thin and “hair like”.

The rare conjoined twins can be suspected on ultrasound when the body parts of the twins are on the same level and there is no change in the relative positions of the twins to one another on successive scans. Cephalopagus (one hand, two bodies) and pyopagus (one buttock, two heads) are clearly evident on ultrasound.

### Radiography

Because of the almost universal availability of ultrasound, radiography has a very minimal role these days. It may help in diagnosis of multiple pregnancy in a peripheral areas where ultrasound may not yet be available.

### Differential Diagnosis

Wrong dates

Vesicular mole in early pregnancy

Hydramnios

Big baby

Fibroid or ovarian tumor with pregnancy

## Check Your Progress 5

- 1) List the seven major steps which will help you to make the diagnosis of twin pregnancy.

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- 2) Describe the role of ultrasound in multiple pregnancy.

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### 14.4.3 Complications

The patient with multiple pregnancy presents a formidable challenge to the obstetrician. Because of increased maternal and foetal complications, twin pregnancy is considered a “high risk pregnancy”

The complications are generally higher in monozygotic than in dizygotic twin pregnancies, and this is certainly so for foetal malformations and the hazards arising from the shared placental circulation of most monozygotic twins.

#### Antenatal Complications

- 1) Abortion
- 2) Hyperemesis
- 3) Anaemia
- 4) Preeclampsia
- 5) Hydramnios
- 6) Antepartum hemorrhage
- 7) Malpresentation
- 8) Preterm labour
- 9) Mechanical distress
- 10) Intrauterine growth retardation
- 11) Intrauterine death
- 12) Congenital malformations
- 13) “Twin to twin” transfusion syndrome
- 14) Conjoined twins

#### Intranatal Complications

- 1) Early rupture of the membranes and cord prolapse
- 2) Prolonged labour
- 3) Increased operative interference
- 4) APH following the birth of the first baby
- 5) Postpartum haemorrhage
- 6) Interlocking

**Postnatal Complications**

- 1) Subinvolution
- 2) Infection
- 3) Lactation problems

**Prognosis**

Maternal mortality is increased. Death is mostly due to hemorrhage (before, during and after delivery), toxæmia and anaemia. Increased maternal morbidity is due to the prevalence of complications and increased operative interference.

Perinatal mortality is markedly increased due to prematurity and IUGR and is 4-5 times higher than in a singleton pregnancy.

As said, in the beginning of this unit, twin pregnancy holds an excitement for everyone, including the teacher. Try to memorise the complications again.

**Check Your Progress 6**

- 1) List five common antenatal complications in twin pregnancy?

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- 2) What are the special problems pertaining to uniovular twins?

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**14.4.4 Management**

**Antenatal Management**

The particular hazards of twin pregnancy, as described above, must be kept in mind in planning the intensified programme of antenatal care required for the optimal management of these high risk pregnancies. The obvious first step is to make the diagnosis of multiple pregnancy as early as possible during gestation.

Once diagnosis is made:

- Provide routine antenatal care,
- Detect complications early,
- If in preterm labour or with complications—refer,
- Term labour—refer.

**Management of Second Stage**

If patient comes in late first stage or second stage, you manage as follows:

**Delivery of First Twin**

- 1) Adequate episiotomy under pudendal anesthesia saves the injury to both the forecoming and the aftercoming head of a preterm baby.
- 2) Forceps should be applied when indicated, under pudendal block.
- 3) Do not give methergine at this stage.

- 4) Soon after delivery of first twin, clamp the cord at two places and cut in between, to prevent exsanguination of the second baby in cases of uniovular twins (of course, it is a usual practice even in singleton births).

***Delivery of Second Twin***

- 1) After the first baby is delivered, remove your gloves and do an abdominal examination to check the lie of the second twin, and also check the foetal heart.
- 2) If the lie is longitudinal (vertex or breech) a vaginal examination can be done after 5-10 minutes (or immediately if membranes rupture). The presenting part can be fixed, and artificial rupture of membranes carried out. If contractions are not effective, 2 units oxytocin should be added to 500 ml. of normal saline as IV drip given.

Delivery can be hastened by forceps (in vertex) or breech extraction (in breech) in the presence of vaginal bleeding, foetal distress or cord prolapse. Otherwise a normal vaginal or assisted breech delivery is conducted in the usual manner.

- 3) After delivery of the first twin if abdominal examination reveals the lie is oblique or transverse, then external version should be attempted. If external version succeeds then the ensuing longitudinal lie is managed as described in the previous paragraph.

If external version fails, or membranes rupture and cord prolapse occurs, internal podalic, version and breech extraction will have to be done under general anaesthesia.

- 4) Prophylactic methergine should be given at the delivery of anterior shoulder of second baby in vertex presentation.
- 5) After delivery of second twin the cord is clamped promptly and baby handed over to the paediatrician.

**Management of Third Stage**

- 1) 10 to 20 units of oxytocin should be added to the intravenous infusion to prevent atonic postpartum haemorrhage.
- 2) Examination of the placenta to confirm the complete expulsion.

**Management of Puerperium**

Subinvolution is normal in twin pregnancy because of the overdistended uterus. Infection should be diagnosed and treated early. Mother should be given advice and support during breast feeding. Nutrition of mother should be emphasised.

**Check Your Progress 7**

- 1) Enumerate the five basic steps in the antenatal management of twin pregnancy.  
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- 2) Why is the second twin at greater risk?  
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3) When is caesarean section indicated in twin pregnancy?

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## 14.5 LET US SUM UP

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Breech presentation is rare, but delivery can be very complicated and pose maternal as well as foetal hazards. To avoid perinatal mortality and morbidity and risk to the mother, it is prudent to make an early diagnosis and refer breech presentation during pregnancy to the district/tertiary centre for management and not to handle the case single handedly at the peripheral centre. However, you should be able to manage an occasional emergency breech delivery, when a woman is brought to you in advanced labour.

Transverse lie occurs only in 1 in 300 births. It is five times more common in the multipara and also occurs with preterm labour. There is no mechanism of labour in transverse lie. External cephalic version is easy in a multipara with no cause for this lie except lax abdomen. Caesarean section is the only option. Premature rupture of membranes, cord prolapse and neglected shoulder presentation are common complications which can be prevented by good antenatal care. Neglected shoulder presentation can lead to obstructed labour, intrauterine infection and rupture uterus. Hence, all transverse lie should be managed at referral centres.

The patient carrying more than one foetus i.e. multiple pregnancy presents a formidable challenge to the obstetrician. Binovular twins are three times more common than uniovular twins. The increasing use of ovulation inducing drugs has further increased the incidence of binovular twinning. Certain problems like hydramnios, twin to twin transfusion syndrome, intrauterine growth retardation, intrauterine death and congenital anomalies are seen more commonly with uniovular twins. Many important complications like anaemia, pregnancy induced hypertension and preterm labour can be prevented by early diagnosis and routine care during pregnancy. Ultrasound has made early diagnosis of twin pregnancy possible with 100% accuracy. Proper management of labour is essential. The perinatal mortality of second twin is increased, especially if the time interval between first and second twin is more than thirty minutes. Atonic postpartum haemorrhage commonly occurs. Although twin pregnancy is considered “high risk”, good antepartum and intrapartum management will go a long way in reducing maternal and perinatal morbidity.

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## 14.6 KEY WORDS

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- Binovular twins** : Result from fertilisation of two ova by two sperm during a single ovarian cycle.
- Breech presentation** : The baby lies in the longitudinal lie with buttocks presenting at the pelvic brim and the head at the fundus.
- Breech with extended legs** : The legs are flexed at the hip and extended at the knee so that the feet lie at the fundus.
- Caesarean section** : Deliver the baby by abdominal surgery.
- Complete breech** : The attitude of flexion is maintained and legs are flexed with the feet lying by the side of the buttocks.

<b>External cephalic</b>	:	Turning the foetus in the uterus by version abdominal route that the head is made to present at the pelvic brim.	<b>Breech Presentation, Transverse Lie and Twins</b>
<b>Multiple pregnancy</b>	:	When more than one foetus simultaneously develops in the uterus.	
<b>PROM</b>	:	Premature rupture of membrane.	
<b>Transverse lie</b>	:	Occurs when long axis of foetus is perpendicular to long axis of uterus.	
<b>Uniovular twins</b>	:	It is due to splitting of the fertilised ovum.	

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## 14.7 ANSWERS TO CHECK YOUR PROGRESS

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### Check Your Progress 1

- 1) 3-4 %
- 2) i) Contracted pelvis  
ii) Abnormal shaped uterus
- 3) i) F  
ii) T

### Check Your Progress 2

- 1) i) F  
ii) T  
iii) F  
iv) T  
v) F
- 2) — Perineal and cervical laceration  
— Risks of operative delivery like caesarean section including general anaesthesia  
— Infection
- 3) — Fracture femur, humerus and clavicle  
— Damage to brachial plexus leading to Erb's paralysis  
— Haematoma of sternomastoid muscle  
— Physical and mental handicap due to traumatic vaginal delivery  
— Risk of cephalic version
- 4) i) tear of tentorium cerebelli with intracranial haemorrhage.  
ii) cord compression, cord prolapse.  
iii) Erb's  
iv) cervical spine

### Check Your Progress 3

- 1) Multiparity, placenta praevia, tumor in pelvis, multiple pregnancy, foetal anomaly, intrauterine foetal death, polyhydramnios, prematurity, fetopelvic disproportion, uterine malformation.

## Abnormal Labour and Puerperium

- 2) Placenta praevia.
- 3) When a transverse lie is allowed to go into labour, a neglected shoulder presentation results. Hand and cord prolapse may occur after membrane rupture with formation of Bandl 's ring, maternal dehydration and eventually rupture uterus.
- 4) Caesarean section.

### Check Your Progress 4

- 1) 1 in 80, 1 in 80<sup>2</sup>
- 2) Binovular twins are three times more common than uniovular twins.

### Check Your Progress 5

- 1) History, symptoms, general examination, abdominal examination, internal examination, ultrasound, radiography.
- 2) Routine ultrasound helps in early diagnosis with 100% accuracy. This will prevent complications. Other advantages would be detection of hydramnios, discordant twins foetal anomalies, thickness of membrane, conjoined twins.

### Check Your Progress 6

- 1) List any 5 of the following
  - i) Preterm labour
  - ii) Anaemia
  - iii) PIH
  - iv) Hydramnios
  - v) Abnormal presentation
  - vi) APH
  - vii) JUGR
  - viii) Abortion.
- 2) Conjoined twins,  
Twin to twin transfusion syndrome,  
Foetal abnormality,  
Intrauterine growth retardation,  
Intrauterine death,  
Hydramnios.

### Check Your Progress 7

- 1) Early diagnosis,  
Routine care,  
Prenatal diagnosis of foetal abnormality,  
Ultrasound and cardiotocography,  
Prevention of preterm labour.

- 2) Increased operative deliveries,  
Delay in delivery,  
Placental separation,  
Increased incidence of malpresentation.
- 3) Cephalopelvic disproportion is uncommon as babies are small. Caesarean section is done for pregnancy induced hypertension, antepartum hemorrhage, severe intrauterine growth retardation, transverse lie of first twin, cord prolapse and conjoined twins.

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## **14.8 FURTHER READINGS**

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