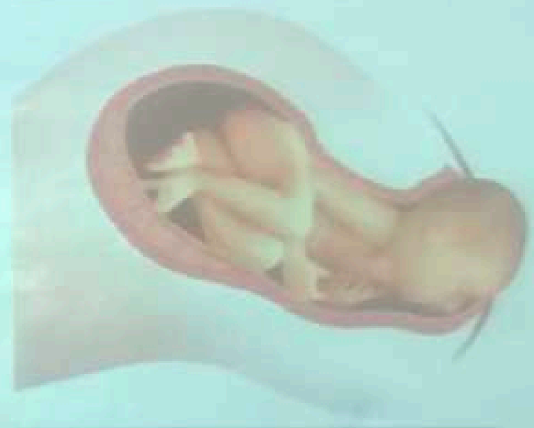
Management of abnormal 2nd stage of labour & obstructed labour



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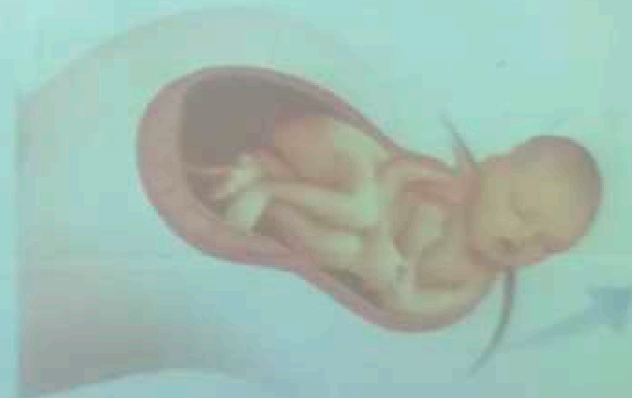

Learning objectives

- To understand the contributors to abnormal second stage of labour & it's management
- To understand the causes & management of obstructed labour
- To understand what is cephalo-pelvic disproportion, its causes & management

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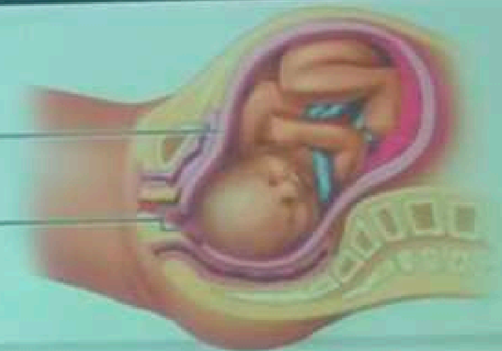
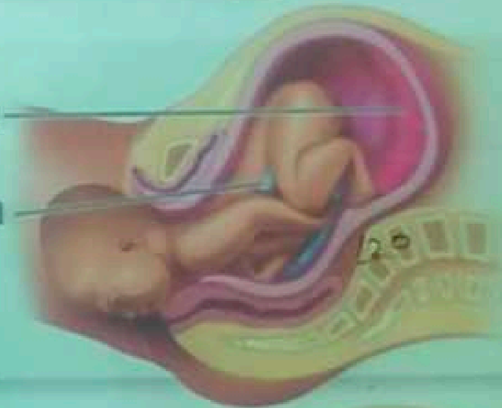
Three stages of labour

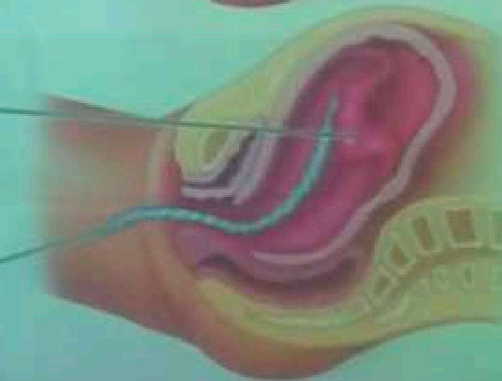
Stage 1:
The cervix relaxes, causing it to dilate and thin out.



Stage 2:
Uterine contractions increase in strength and the infant is delivered.

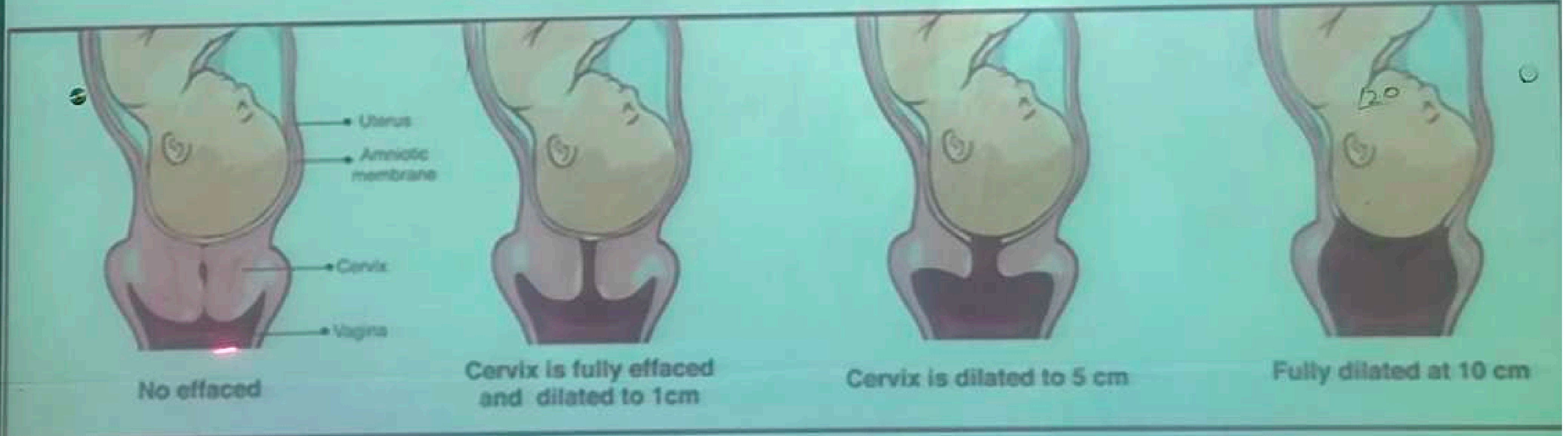


Stage 3:
The placenta is expelled.



First stage of labour

Cervical Effacement



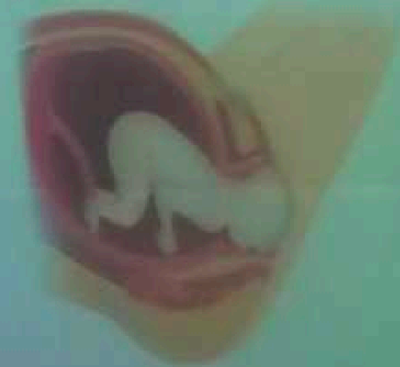
What is the second stage of labour?

- Describes the time from full dilatation of the cervix to delivery of the fetus or fetuses

Divided into two phases:

1. **Passive phase:**

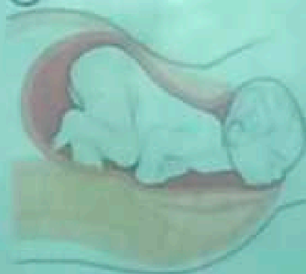
- Time between full dilatation to onset of involuntary expulsive contractions 120
- No maternal urge to push as head is high in pelvis

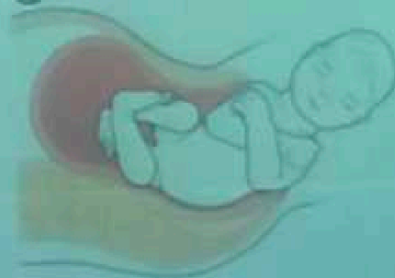


2. Active second stage:

- Maternal urge to push or bear down
- Valsalva manoeuvre
- Head is low (often visible)
- Not more than 2 hours in nulliparous & 1 hour in women delivered before

Stage 2: Birth





Management of second stage of labour

- **Crowning:** When the largest diameter of the fetal head is encircled by the vulvar ring
- Vaginal examination every 30 minutes
- Maternal position— any comfortable position for bearing down
- Bearing down – with each contraction
- Delivery of fetal head—manual perineal support
- Fetal airway clearance
- Umbilical cord clamping
- Place infant under warmer

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Poor progress in the second stage of labour

Delay in second stage:

Birth of the baby is expected to take place within:

- 3 hours of the start of the active second stage (pushing) in nulliparous women
- and 2 hours in parous women

Diagnosis:

If delivery is not imminent after 2 hours of pushing in a nulliparous labour

& 1 hour for a parous woman

Causes:

Classified as abnormalities of the:

- Powers
- Passages
- Passenger

Powers

- Secondary dysfunctional uterine activity (powers) is common cause of second stage delay
- May be exacerbated by epidural analgesia
- Maternal dehydration & ketosis – uterine contractions weak & ineffectual

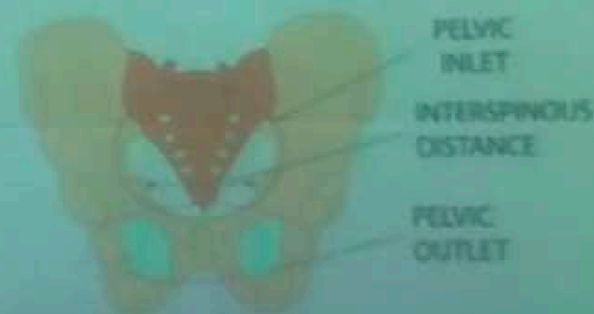
Treatment:

- If woman primiparous – no mechanical problem, rehydration & intravenous oxytocin
- If woman multiparous-- full clinical assessment by skilled obstetrician

Passage

Delay in second stage:

- Narrow midpelvis (android pelvis) which prevents internal rotation of the fetal head (passages)
- Deep transverse arrest: This may result in arrest of descent of the fetal head at the level of ischial spines in the transverse positions
- Resistant perineum: In nulliparous woman
- Persistent occiput posterior (OP) position of the fetal head



CAUSES

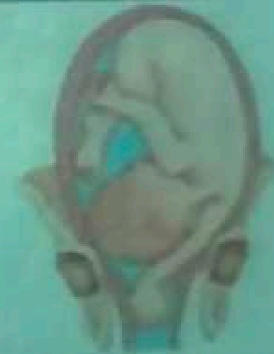
FAULT IN PAASAGE

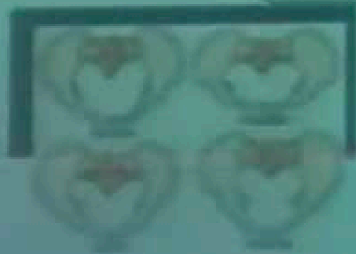
- BONY
- SOFT TISSUE OBSTRUCTIONS

FAULT IN PASSENGER

- TRANSVERSE LIE
- BROW PRESENTATION
- OCCIPITOPOSTERIOR

- BIG BABY
- MULTIPLE PREGNANCY
- CONGENITAL ANOMALIES OF FETUS





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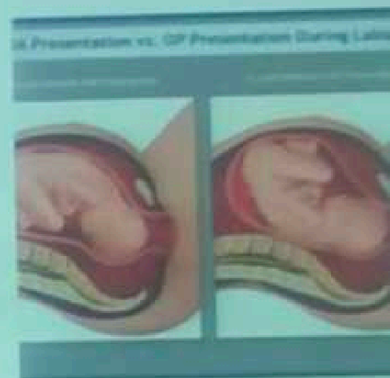
Passenger

Delay can also occur –

- Persistent occiput posterior (OP) position of the fetal head



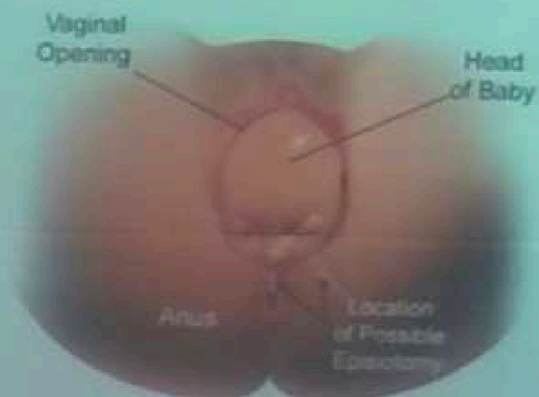
In this head will either have to undergo a long rotation to occiput anterior (OA) or be delivered in OP position i.e face to pubes

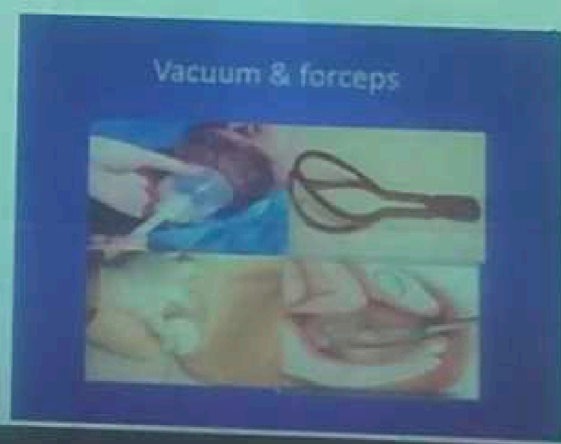
- NICE guidelines – until the delay in the second stage of labour is diagnosed oxytocin should not be started

Treatment:

Instrumental vaginal birth – This should be considered for prolonged second stage if the safety criteria have been fulfilled

- If unsuccessful then – cesarean section
- Resistant perineum resulting in significant delay -- episiotomy

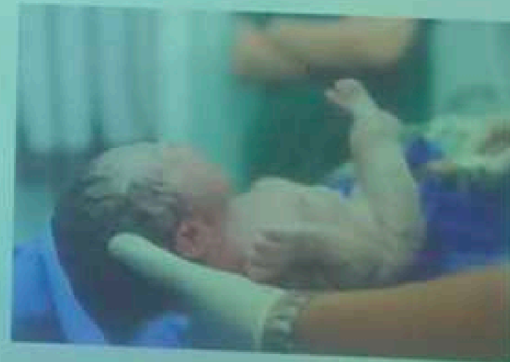




Key learning points

Management options for delay in second stage of labour:

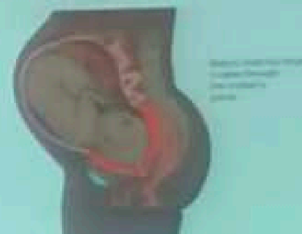
- Continued pushing with encouragement
- Regular reviews of progress & fetal wellbeing
- Oxytocin to augment contractions
- Episiotomy for resistant perineum
- Instrumental vaginal birth (Forceps or Ventouse/Vacuum)
- Cesarean section



Obstructed labour

- Failure of the head to descend d/t mechanical problems
- Mismatch b/w fetal presenting part & fetal pelvis
- Key sign is widest diameter of fetal skull remains above the pelvic brim & fails to descend
- The major cause is cephalopelvic disproportion

Cephalopelvic disproportion (passages & passenger)



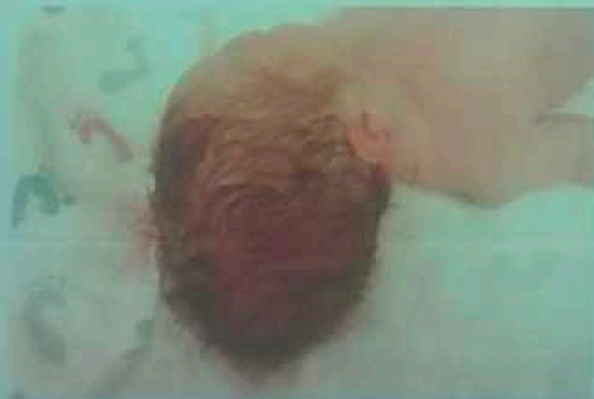
- CPD implies anatomical disproportion b/w the fetal head & maternal pelvis

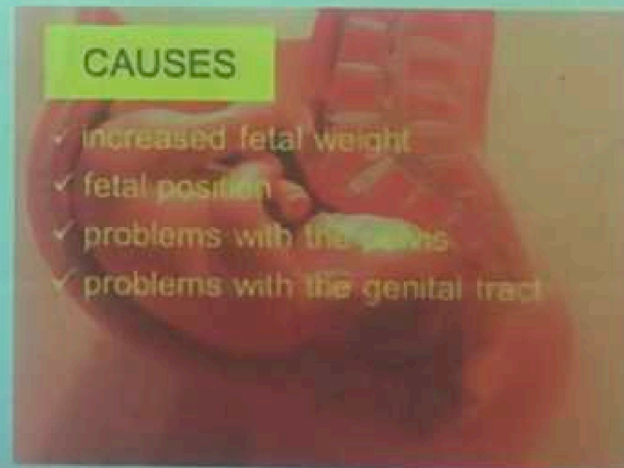
CAUSES:

- Large head, small pelvis or a combination of two relative to each other
- Women of short stature (<1.60m) with a large baby in their first pregnancy
- Pelvis unusually small because of previous fracture or metabolic bone disease
- Fetal anomaly - Obstructive hydrocephalus – macrocephaly
- Fetal thyroid & neck tumours – extension of fetal neck
- Malposition of the fetal head – relative CPD
- OP position – deflexion of the fetal head, large skull diameter to maternal pelvis

Findings suggestive of CPD

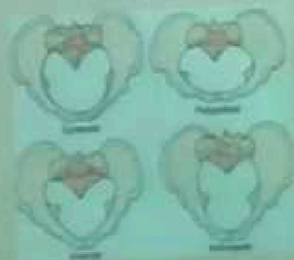
- Fetal head is not engaged
- Progress is slow or arrests despite efficient uterine contractions
- Vaginal exam. shows severe moulding & caput formation
- Head is poorly applied to the cervix
- Haematuria

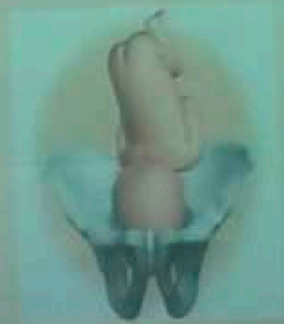




Complications of CPD

- Prolonged labour
- Fetal distress
- Delayed second stage





Cephalopelvic Disproportion (CPD)

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- Occurs when fetal head is too large to pass through the mother's pelvis.

- Can cause complications like prolonged labour, fetal distress, maternal anf fetal injury during

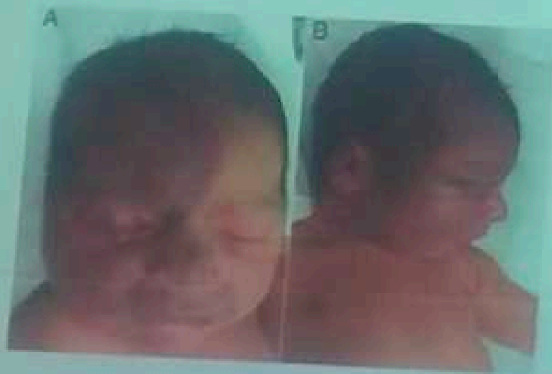
1. Abnormalities of birth canal ('passages')

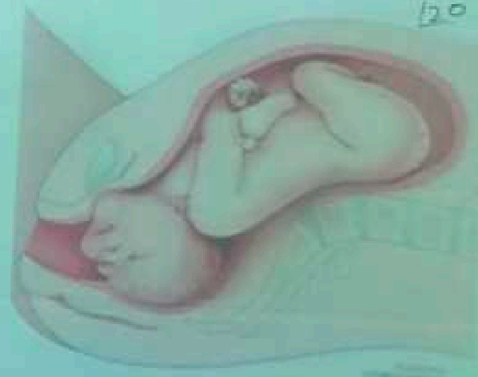
- The bony pelvis may cause delay in the progress of labour
- Abnormalities of the uterus & cervix can also delay labour
- Unsuspected fibroids in the lower uterine segment can prevent descent of the fetal head
- Delay can also be caused by 'cervical dystocia'- a non-compliant cervix that effaces but fails to dilate

 - because of severe scarring or rigidity because of previous cervical surgery

2. Malpresentation (the passenger)

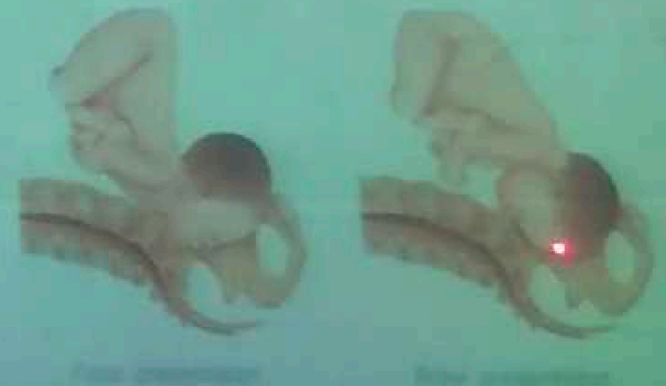
- A firm application of the fetal presenting part on to the cervix is necessary for good progress in labour
- A face presentation may apply poorly to the cervix & resulting progress in labour may be poor





Malpresentation contd...

- Brow presentation is associated with mento-vertical diameter
- Too large to fit through bony pelvis unless flexion occurs or hyperextension to a face presentation
- It often manifests as poor progress in the first stage often in multiparous woman
- Malpresentations are more common in women of high parity
- Carry a risk of uterine rupture if labour is allowed to continue without progress



Fetal compromise in labour

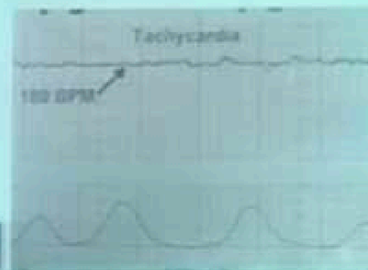
- Concern for fetal well being of the fetus is one of the most common reasons for medical intervention during labour

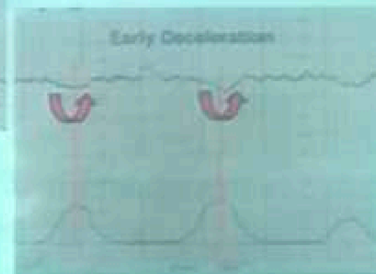
Fetal compromise may present as:

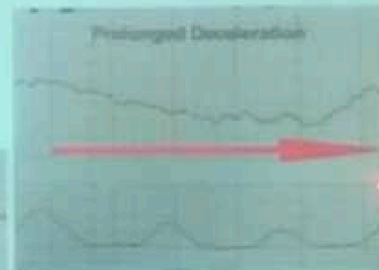
- Fresh meconium staining to amniotic fluid- thick, tenacious, dark green, bright green or black
- Abnormal CTG
- Fetal blood sampling- blood from fetal scalp taken- pH <7.2 is fetal compromise

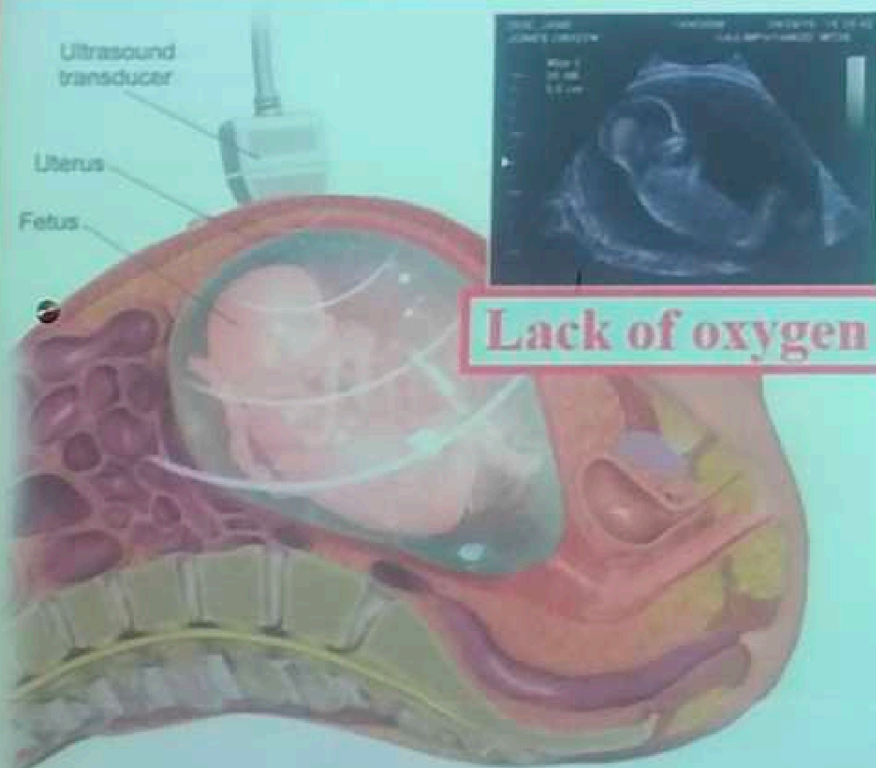
An Abnormal Antenatal CTG cont'd

Fetal distress



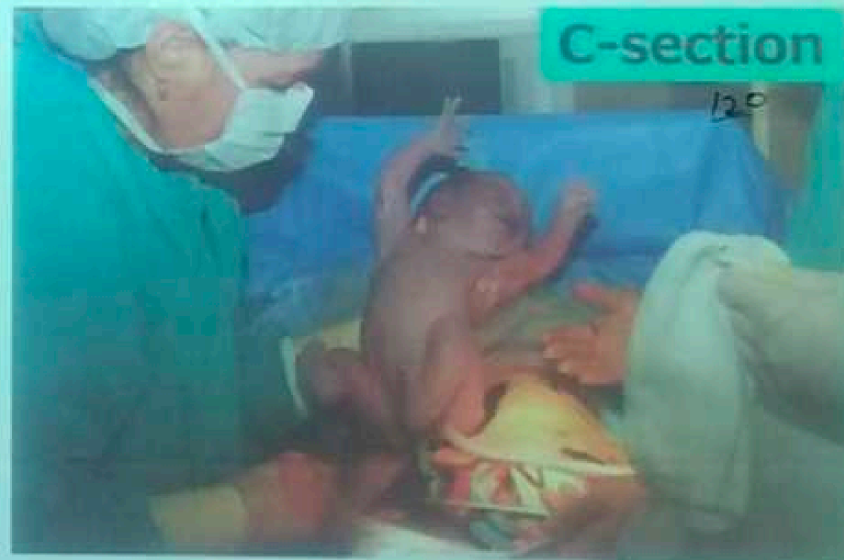






Lack of oxygen

Fetal Ultrasound



C-section

Management of possible fetal compromise

- Reduce venocaval compression - Reposition the mother in left lateral position
- I/V fluids to correct maternal dehydration & ketosis
- Correct maternal hypotension secondary to an epidural
- Oxygen inhalation
- Reducing or stopping oxytocin infusion to stop uterine hyperstimulation
- Immediate vaginal exam- exclude malpresentation & cord prolapse
- If cervix fully dilated - deliver baby by forceps/ventouse
- If cervix not dilated - fetal blood sampling, normal pH is >7.25, if < 7.2 fetal compromise. Every 30 to 60 mins.
- If abnormal CTG – Emergency CS
- Paediatrician should be present