Abnormal labor & cesarean section

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Normal labor

- Labor is characterized by regular painful uterine contractions that increase in frequency and intensity with progressive cervical effacement and dilation.

- Labor is characterized by 4 main stages :

First stage: Time from the onset of labor until complete cervical dilatation(10cms)

Divided into

- The latent phase begins with regular contractions and ends when there is an increase in the rate of cervical dilation (up to 4 cm)
- The active phase is characterized by an increased rate of cervical dilation and descent of the presenting fetal part (4-10 cm)

Duration

Nullipara: Avg 8h (no more than 18h)
cervix dilation rate <1cm/hr
Multiparous: Avg 5h, (no more than 12h)
Cervix dilation rate 1-2 cm/hr

Second stage: Time from complete cervical dilatation to expulsion of the fetus

Divided into

- Passive phase; describes the time between full dilatation and the onset of involuntary expulsive contractions.
- Active second stage: there is a maternal urge to push because the fetal head is low (Voluntary).

Duration

nullipara: maximum of 2h (3h allowed if on epidural anesthesia)
multipara: Max 1h (2h allowed if on epidural anesthesia)

Third stage: Time from expulsion of the fetus to expulsion of the placenta

Usually less than 30 mins

Fourth stage: From delivery of the placenta to stabilization of the patient's condition; for example, suturing of perineum if needed and resolution of epidural anesthesia.

• Usually at about 1-2h, maximum of 6h postpartum.

Partogram

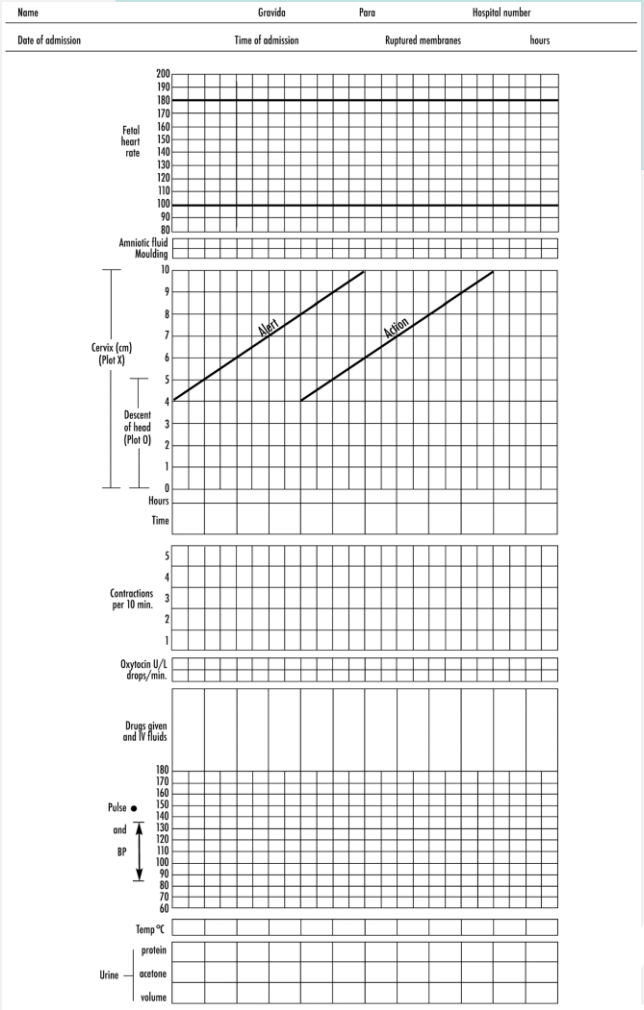
- The partograph is a tool for monitoring maternal and fetal wellbeing during labor, and a decision-making aid when abnormalities are detected. It is designed to be used at any level of care.
- Its central feature is a graph used to record the progress of cervical dilation, as determined by vaginal examination.

❖ Maternal indicators:

- Vital signs (heart rate, blood pressure and temperature),
- Time of spontaneous or artificial rupture of the membranes,
- Uterine contractions (number per 10 minutes and duration),
- Drugs administered (oxytocin, antibiotics, etc.),
- Urine output.

❖ Fetal indication:

- Fetal heart rate,
- Amniotic fluid (color, odor and quantity),
- Descent of the fetal head and head molding.



Abnormal labor

- Term used to describe a difficult labor pattern that deviates from that observed in the majority of women who have spontaneous vaginal deliveries.

A) Slow Progress **"Protraction disorders"**: refer to slower-than-normal labor progress.

B) Arrest of Progress **"arrest disorders"**: refer to complete cessation of progress.

C) Precipitate Labor: Complete Delivery within ≤3 hours

Protraction and arrest disorders may occur in both the first and second stage of labor

Precipitate labor

- Rapid birth of the fetus (a combined first stage and second stage of labor duration) within less than 2 to 3 hours of the onset of contractions and may result from uterine overactivity.
- Excessive uterine activity is commonly termed ‘uterine tachysystole’ or ‘hyperstimulation’. It is defined as more than five uterine contractions per 10 minutes in at least two consecutive intervals.
- There may be signs of fetal distress on the CTG due to interference with the placental blood supply.
- Spontaneous hypercontractility, excessive uterine activity not resulting from the administration of medications, is rare. Spontaneous uterine hypercontractility may be associated with placental abruption.
- Uterine hyperstimulation occurs much more commonly. By definition, it is caused by the use of oxytocin .

❑ Risk factors :

- Strong uterine contractions,
- Multipara,
- Small sized baby,
- Minimal soft tissue resistance,
- Previous history of precipitate labor,
- Oligohydramnios .

❑ Maternal complications:

- Laceration: Cervix, vagina, and perineum,
- Uterine inversion & Uterine atony – PPH,
- Amniotic fluid embolism,
- Infection (because of unsterile delivery).

❑ Fetal complications:

- Intracranial hemorrhage,
- Fetal distress,
- Delivery at inappropriate place.

Management:

- Discontinue oxytocin,
- Episiotomy (to avoid ICH and birth canal injuries),
- Observe mother for PPH after delivery.

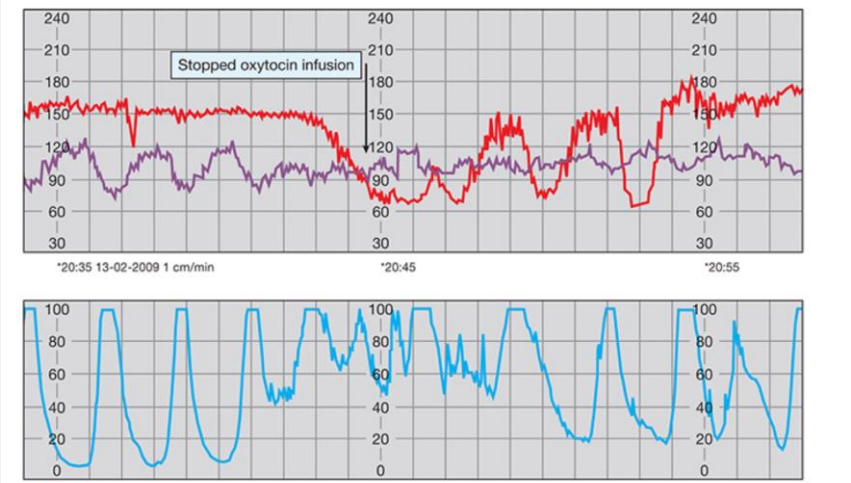


FIG. 34.1 Cardiotocograph trace in precipitate labour. There is hyperstimulation secondary to oxytocin administration. When the oxyocin infusion is stopped, the contractions become less frequent and the cardiotocograph improves.

Prolonged labor

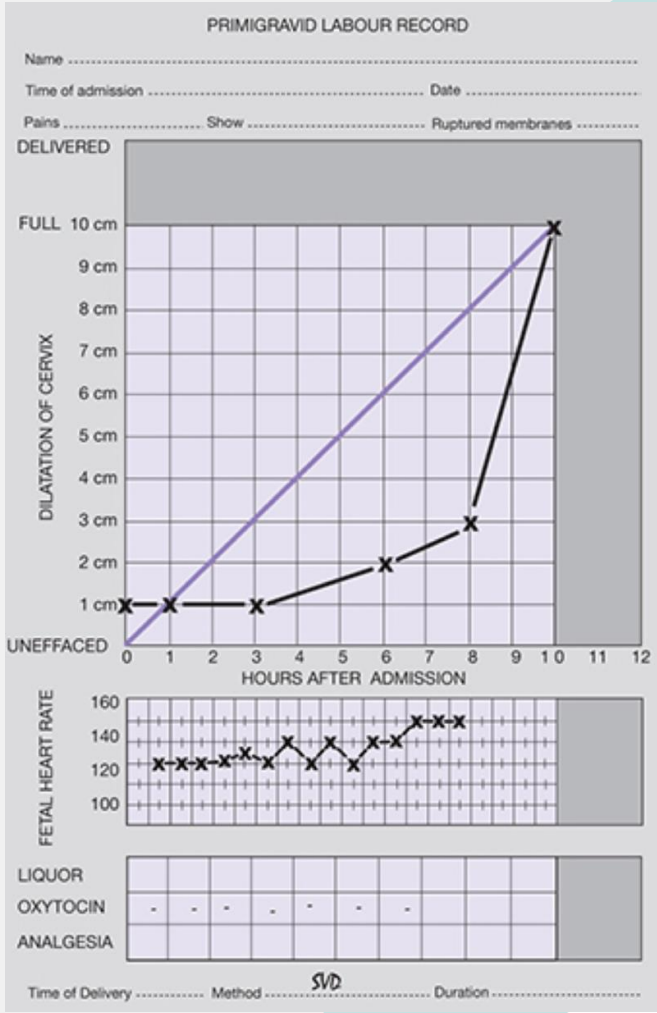
** Slow labor is associated with:

- Eventual fetal ‘distress’ and risk of fetal hypoxic injury
- Increased risk of intrauterine infection, leading to fetal and maternal morbidity
- Increased risk of postpartum hemorrhage
- Maternal anxiety and longer-term psychological morbidity
- Intervention such as using instruments or CS

Prolonged first stage

1- Latent phase

- The normal limits of the latent phase of labor extend up to 18 hours for nulliparous patients and up to 10 hours for multiparous patients .
- *Causes:*
  - Premature or excessive use of analgesia and sedative
  - Fetal malpresentation
  - Abnormal fetal size
- **Many patients who appear to be developing a prolonged latent phase are shown eventually to be in false labor or pre labor, with no progressive dilation of the cervix.**



2- Active phase

Cervical dilation rates of less than 1.2 cm per hour in nulliparous women and 1.5 cm per hour in multiparous women

OR

Rate of descent of the presenting part of less than 1.0 cm per hour in nulliparous women and 2.0 cm per hour in multiparous women

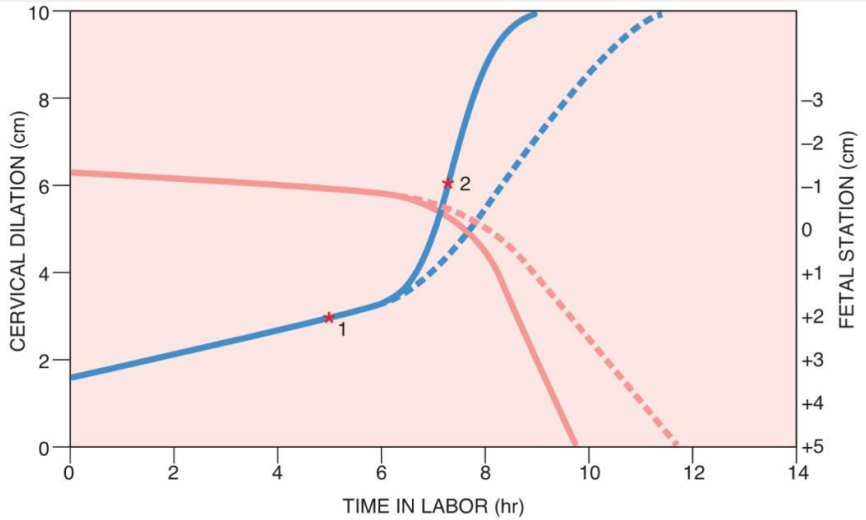
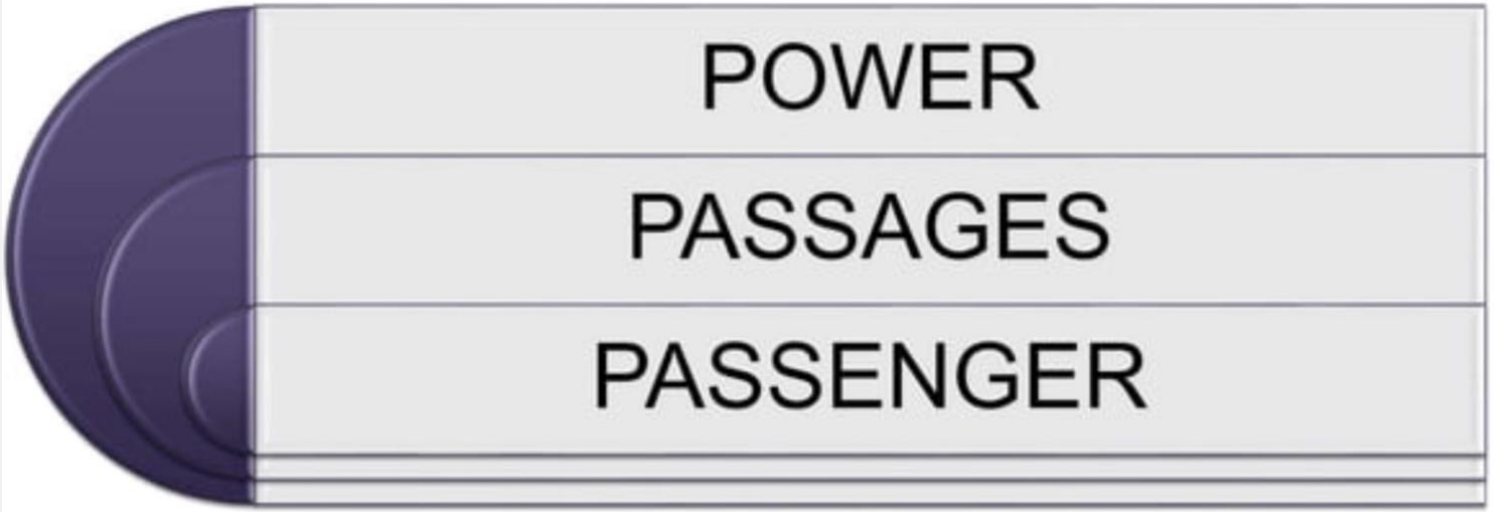


FIGURE 11-2 Normal dilation *(blue)* and descent *(red)* curves of normal labor and curves depicting protracted dilation and descent abnormalities of labor. *Red star 1* on the *blue line* indicates the beginning of the active phase of labor (Friedman) and *red star 2* the beginning of the active phase of labor as recommended by Zhang et al. (Revised from Friedman EA: *Labor: clinical evaluation and management,* ed 2, New York, 1978, Appleton-Century-Crofts, p 65; and Zhang J, Landy HJ, Branch DW, et al: Contemporary patterns of spontaneous labor with normal neonatal outcomes. *Obstet Gynecol* 116:1281–1287, 2010.)

Causes(3p's)



1. Dysfunctional uterine activity ‘powers’

- The most common cause of poor progress in labor.
- The assessment of uterine contractions is most carried out by clinical examination and by using external uterine tocography.
- Intrauterine pressure catheters are available and give a more accurate measurement of the pressure being generated by the contractions, but they are invasive and rarely necessary
- A frequency of three to five contractions per 10 minutes is usually considered ideal, with each lasting 45-60 seconds

- If delay is suspected: offer amniotomy (artificial rupture of membranes) and repeat vaginal examination in 2 hours
- If progress was < 1 cm after 2 hours, delay is confirmed:

1. Consider use of oxytocin

If oxytocin is used, ensure that the time between increments of the dose is no more frequent than every 30 minutes.

Increase oxytocin until there are 4–5 contractions in 10minutes

- Dilute 5 IU in 500 ml or 10 IU in 1 liter of Ringer lactate or 0.9% sodium chloride to obtain a solution of 10 milli units per ml.
- Start at 5 drops/minute, then increase by 5 drops/minute every 30 minutes, until contractions are effective (3 to 4 contractions of more than 40 seconds in 10 minutes).
  On average, 20 drops/minute results in satisfactory uterine contractions. Do not exceed 60 drops/minute.

❖ Continuous EFM is necessary as excessively frequent strong contractions may cause fetal compromise

2. If progress fails to occur despite 4–6 hours of augmentation with oxytocin, a caesarean section will usually be recommended

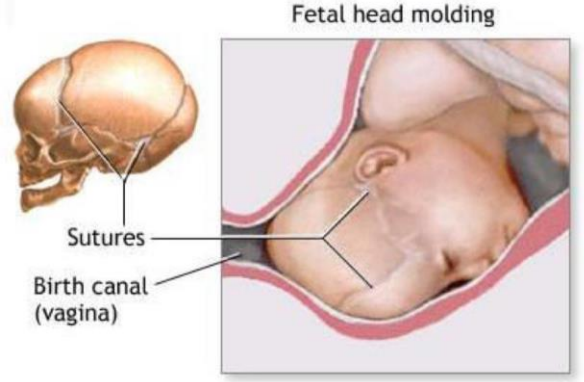
2. Cephalopelvic disproportion (CPD) ‘passages and ‘passenger’

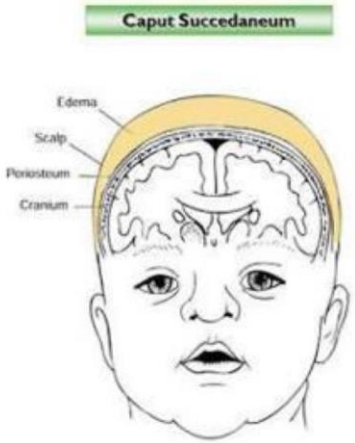
- CPD implies anatomical disproportion between the fetal head and maternal pelvis (it can be due to a large head, small pelvis or a combination of the two relative to each other)
- CPD can not be diagnosed definitively except after failed trial of labor
- Causes of CPD:

1. Large fetus (constitutional, GDM, post maturity)
2. Abnormal fetal position
3. Unusually small pelvis (previous fractures, metabolic bone disease)
4. Obstructive masses in the maternal pelvis or in the fetus (hydrocephalus or fetal goiter)

Findings suggestive of CPD

- Fetal head is not engaged,
- Progress is slow or arrests despite efficient uterine contractions,
- Vaginal examination shows severe molding and caput succedaneum,
- Hematuria,
- Malpresentation.





3. Malpresentation ‘passenger’

- A firm application of the fetal presenting part on to the cervix is necessary for good progress in labour.

Malpresentation

- Presentation: the part of the fetus occupying the lower segment or pelvis.
- Presenting part: the lowest part of the fetus palpable on vaginal examination.
- Position: the relation between the denominator of the presenting part and the maternal pelvis.
- Lie: the relation between the long axis of the fetus with respect to the long axis of the mother.

❖ Normal presentation is cephalic. Normal position: L.occipito-anterior.

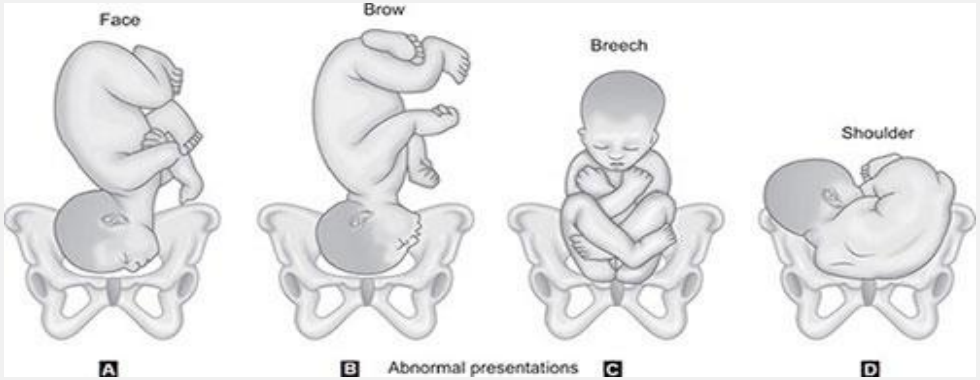
Cont.

- malpresentation may be:

1. **Breech** (3.5%) which is the most common.

1. **Cephalic, but**:
    1. Face: when the head is extended.
    2. Brow: when it is midway between flexion and extension.

2. **Shoulder** (0.5%)

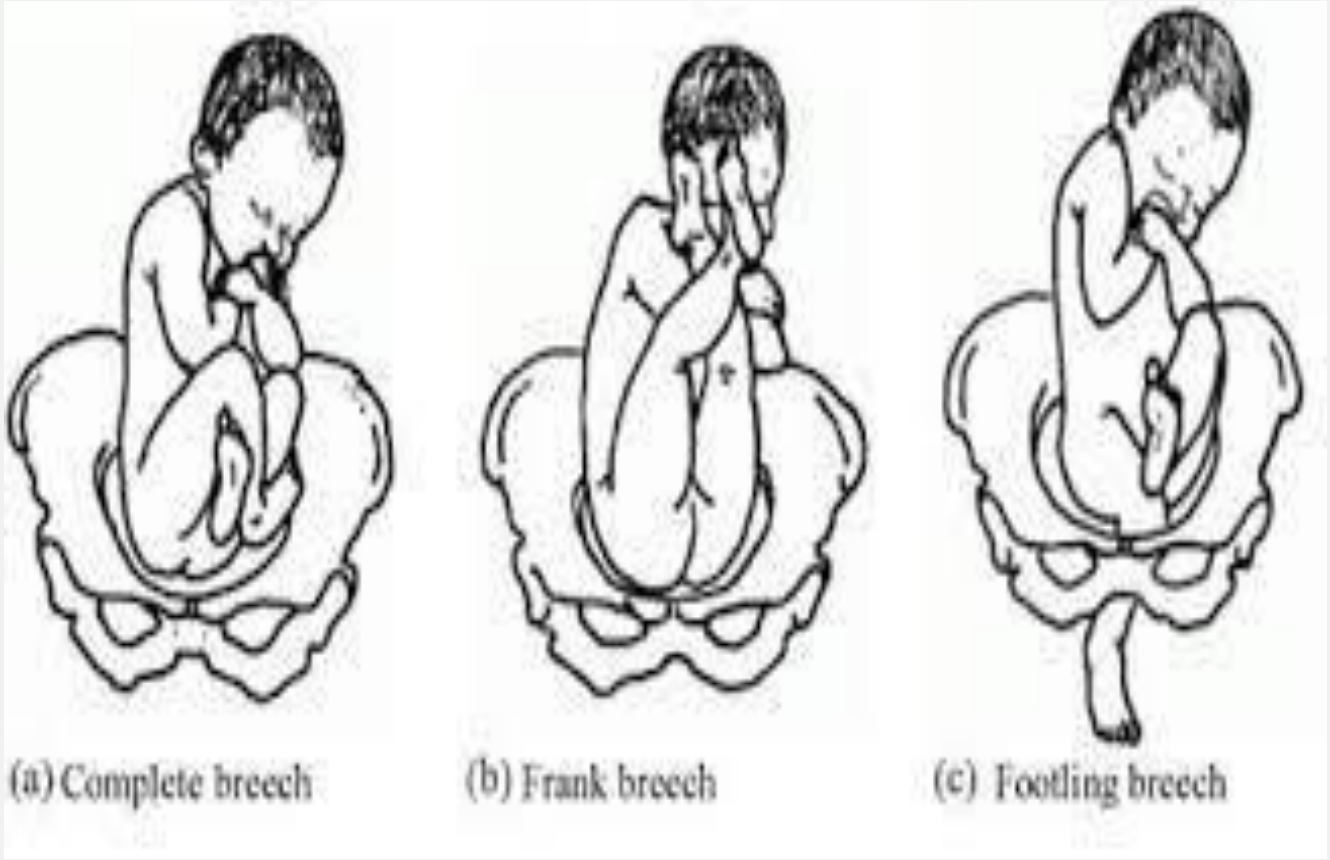


Breech Presentation

- It occurs when the fetal buttocks or lower extremities present into the maternal pelvis
- The prevalence of breech presentation at <28 weeks, 32 weeks, and **term** is approximately 20-25%, 7-16%, and **3 to 4%**, respectively.
- **Types:**

1. Frank breech – Both hips are flexed and both knees are extended so that the feet are adjacent to the head accounts for 50-70% of breech fetuses at term.
2. Complete breech – Both hips and both knees are flexed accounts for 5-10% of breech fetuses at term.

3. Incomplete breech/footling – One or both hips are not completely flexed accounts for 10-40% of breech fetuses at term.


(a) Complete breech
(b) Frank breech
(c) Footling breech

Risk Factors

- *Multiple factors have been associated with an increased risk for breech presentation, including:*

- Preterm gestation
- A previous sibling or either parent who was in breech presentation
- Uterine abnormality (eg, bicornuate, fibroid)
- Placental location (eg, placenta previa)
- Extremes of amniotic fluid volume (polyhydramnios, oligohydramnios)
- Nulliparity

Management At Or Near Term

- **3 ways:**
  - External cephalic version then vaginal delivery
  - Cesarean section
  - Vaginal breech delivery
- **4 strategies**

❑ External cephalic version before labor, with a trial of labour if the version is successful and cesarean birth if unsuccessful.

❑ ECV before labor, with a trial of labor if the version is successful. However, if the version is unsuccessful, a trial of vaginal breech birth are offered to patients.

❑ Planned cesarean birth for breech presentation, without an attempt at ECV.

❑ A trial of labor and vaginal breech birth for patients without an attempt at ECV

ECV

- Involves manual adjustment of fetal position by applying pressure on the mother's abdomen.
- Offered between 36-37 weeks of gestation.
- The success rate is around 58%

Cont.

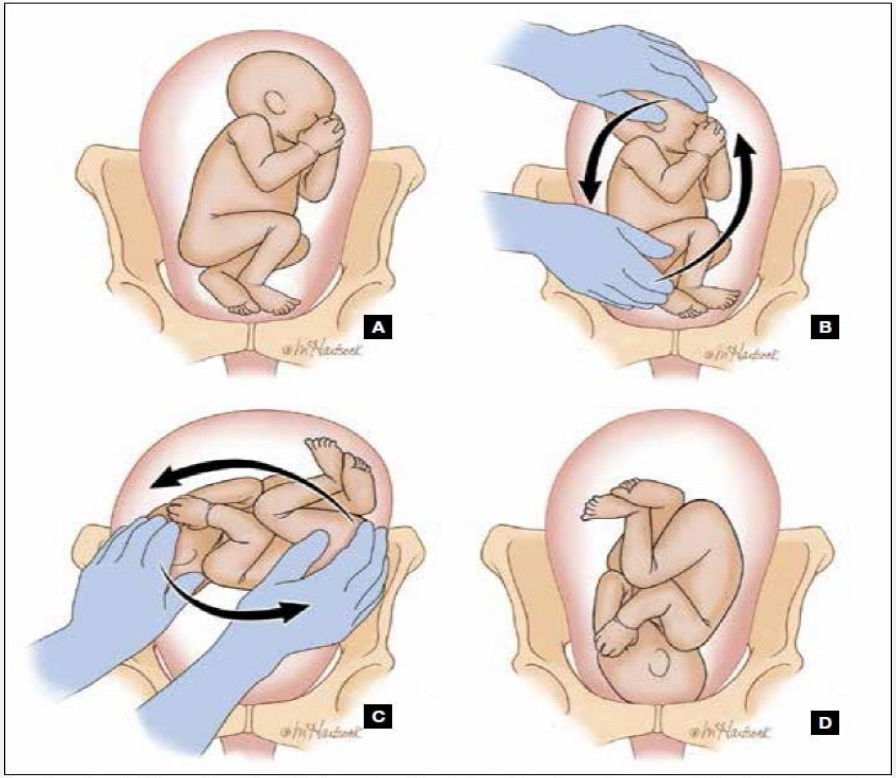
Prerequisites for ECV:

- Term fetus
- Informed consent
- Must be carried out in a hospital that is equipped to perform an emergency cesarean delivery- risk of placental abruption or cord compression.
- The pt should be NPO for 8 hours and has intravenous access.
- Non-stress test

Complications:
-still birth
-FMH
-placental abruption
-emergency CS

Contraindications to ECV:
Absolute contraindications *Any absolute contraindication to vaginal birth*, examples include placenta previa and previous classical cesarean birth.
Relative contraindications: Fetal growth restriction, multiple gestations, severe oligohydramnios, nonreassuring fetal heart monitoring

FIGURE External cephalic version technique



In external cephalic version, the clinician externally rotates a breech- or transverse-lying fetus to a vertex position. The illustration shows a backflip rotation maneuver. The American College of Obstetricians and Gynecologists recommends a forward rotational maneuver be attempted first.

Source: Koutrouvelis GO; American College of Obstetricians and Gynecologists' Committee on Practice Bulletins—Obstetrics. Practice Bulletin No. 161: External cephalic version. Obstet Gynecol. 2016;127(2):e54–e61.

Vaginal Breech Delivery

- vaginal breech births occur because of situations such as precipitous birth, out-of-hospital birth, and lethal fetal anomaly or fetal death as well as maternal request sometimes.
- cesarean is the preferred route of birth for many patients in labour with breech presentation. However, for patients who would like a trial of labour and have an experienced clinician willing to attempt vaginal breech birth, general criteria have been developed to help identify pregnancies at lowest risk.

criteria

- No contraindications to vaginal birth.

CRITERIA FOR VAGINAL DELIVERY OF A BREECH PRESENTATION
Fetus must be in a frank or complete breech presentation.
Gestational age should be at least 36 weeks.
Estimated fetal weight should be between 2500 and 3800 g.
Fetal head must be flexed.
Maternal pelvis must be adequately large, as assessed by x-ray pelvimetry* or tested by prior delivery of a reasonably large baby.
There must be no other maternal or fetal indication for cesarean delivery.
Anesthesiologist must be in attendance.
Obstetrician must be experienced.
Assistant must be scrubbed and prepared to guide the fetal head into the pelvis.

Face presentation

It occurs when the fetal head is hyper-extended

- Majority are idiopathic

Risk factors:

- Extreme Prematurity
- Multiparity
- Congenital anomalies, such as fetal goiter and hydrocephalus
- Polyhydramnios
- Contracted maternal pelvis

Delivery in case of face presentation

- Delivery depends on the position of the bony landmark, which is the mentum(chin).
- **If the chin is anterior**ly rotated under the symphysis pubis, vaginal delivery should be expected. Forceps, but not vacuum, can be used if delivery must be facilitated.
- **In case of posterior chin**; the neck is already maximally extended and can not extend more to allow the occiput to pass under the symphysis pubis so it is delivered **by cesarean section** .Unless, a spontaneous rotation to mentum anterior occurs, often late in the second stage of labor or the fetus is very small.
- If the chin is transverse is must be delivered C/S
- Over 75% of the cases are born vaginally

Brow presentation

Arises as the result of extension of the fetal head such that it is midway between flexion (vertex) and hyperextension (face). The neck is extended but not to the degree of a face presentation (partially extended).

Management:

- 50-75% of the fetuses convert spontaneously to a more favorable presentation and delivered **vaginally.**
- In a persistent brow presentation, the large presenting diameter makes vaginal delivery impossible, so delivery must be by cesarean delivery.

Management of shoulder and compound presentations

- Shoulder presentation must be delivered by **C/S**.
- Usually in compound presentation, the prolapsed part of the fetus does not interfere with labor. If the arm prolapses, it is best to wait to see if it moves out of the way as the head descends. If it does not, the arm may be gently pushed upward while the head is simultaneously pushed downward by fundal pressure.

Prolonged second stage

Prolonged second stage

- After complete dilation, no progress in either descent or rotation of the fetus after

- Nulliparous :: >3 h without epidural anesthesia and >4 h with epidural anesthesia.

- Multiparous :: >2 h without epidural anesthesia and >3 h with epidural anesthesia.

Causes

1-Powers

2-Passages

3-Passenger

1.Secondary dysfunctional uterine activity

- A common cause of second stage delay, and may be exacerbated by epidural analgesia
- Having achieved full dilatation, the uterine contractions may become weak and ineffectual, and this is sometimes associated with maternal dehydration and ketosis.
- If no mechanical problem is anticipated, the treatment is with rehydration and intravenous oxytocin

2. ‘Passages

- Delay in the second stage can occur because of a narrow midpelvis (android pelvis), which prevents internal rotation of the fetal head
- It may also occur due to a resistant perineum, particularly in a nulliparous woman
- 3. Malposition –passenger
- Any position other than occipitoanterior

Management

- assessment of uterine contractions and maternal pushing efforts
- assess whether the fetal head is engaged. If the head is not engaged, proceed to emergency cesarean. If the head is engaged, consider a trial of either obstetric forceps or a vacuum extractor delivery.
- Augmentation
- Episiotomy

Malposition

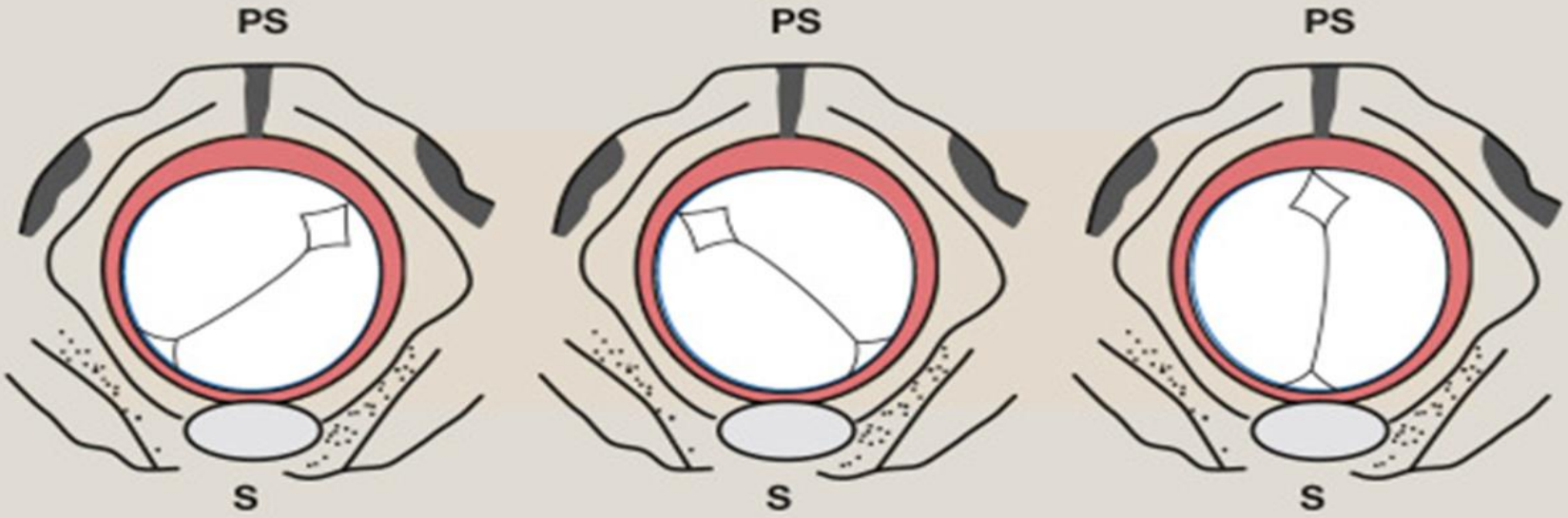
Malposition refers to any position of the vertex other than flexed occipitoanterior one.

Occipitoposterior position:

- **Occiput is placed posteriorly** over the sacroiliac joint or directly over the sacrum
- Primary (present before the onset of labor) or Secondary

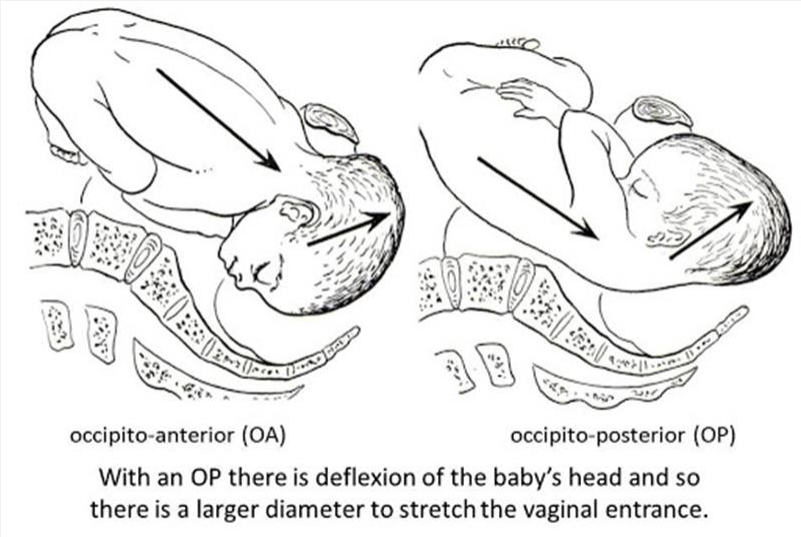
Occipitoposterior positions

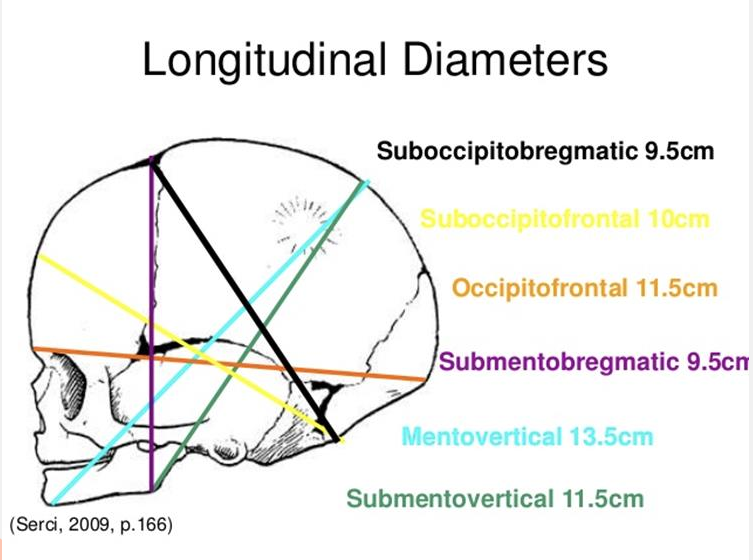
a Right occipitoposterior **b** Left occipitoposterior **c** Direct occipitoposterior



PS, pubic symphysis; S, sacrum

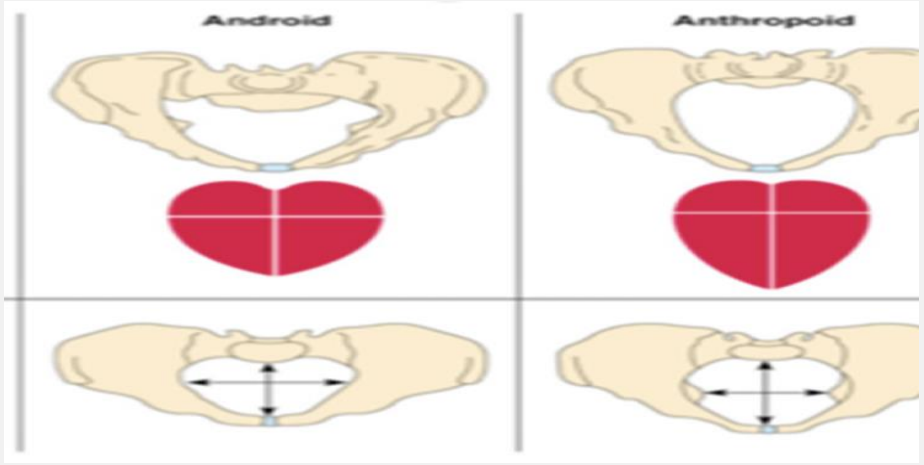
Anteroposterior diameter is either suboccipitofrontal (10 cm) or occipitofrontal (11.5 cm).





(Serci, 2009, p.166)

What contributes to Occipitoposterior position

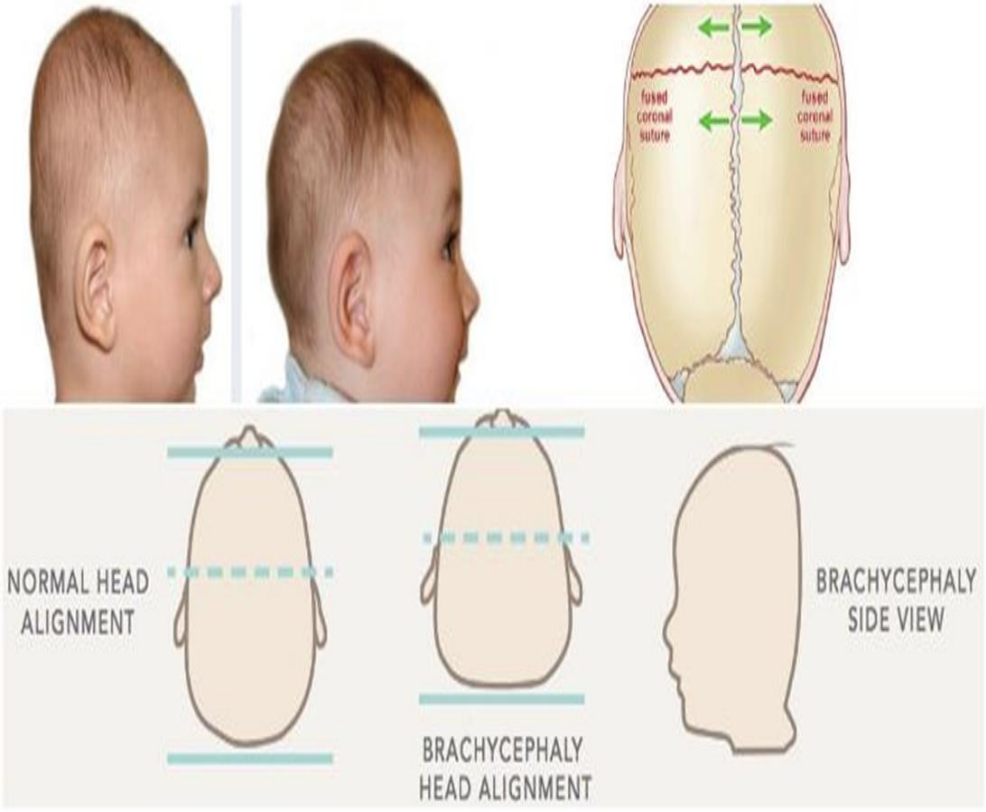


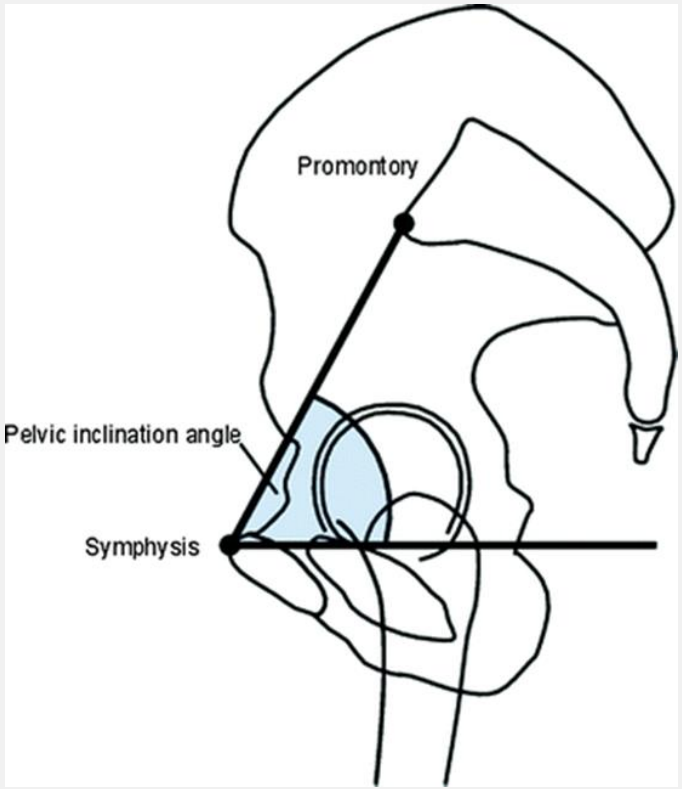
- **Shape of the pelvic inlet :** anthropoid or android pelvis

- **Fetal factors:**

1. High pelvic inclination.
2. Attachment of the placenta on the anterior wall of the uterus.
3. Primary brachycephaly.

- **Uterine factor**


fused coronal suture
fused coronal suture
NORMAL HEAD ALIGNMENT
BRACHYCEPHALY HEAD ALIGNMENT
BRACHYCEPHALY SIDE VIEW


Promontory
Pelvic inclination angle
Symphysis

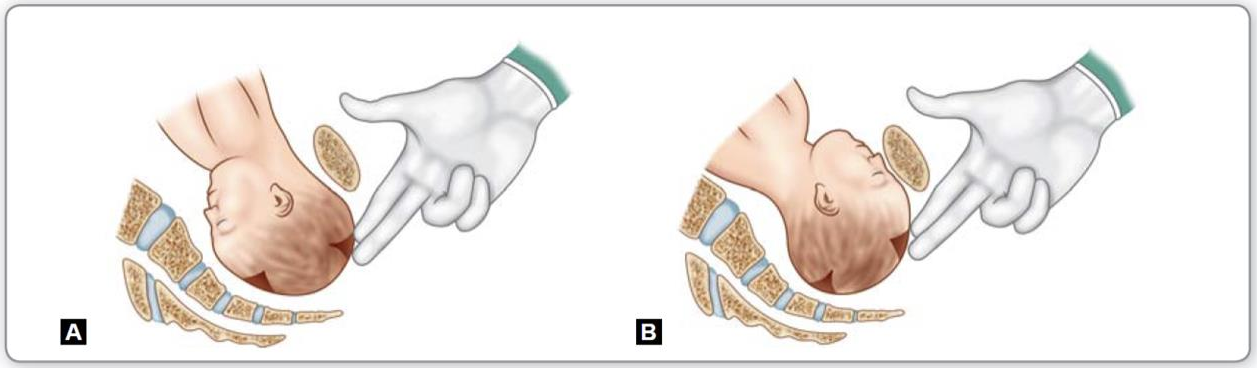
Diagnosis

Abdominal examination:

- The abdomen looks flat, below the umbilicus
- The fetal limbs are more easily felt near the midline on either side
- The head is not engaged.
- The maximum intensity of the fetal heart sounds is heard on the flank

Vaginal Examination:

- Posterior fontanelle towards the sacro-illiac joint, anterior fontanelle is easily felt if flex head, marked moulding with caput and difficulty to assess station and position



Figs 26.3A and B: Diagnosis of the attitude of the head. (A) Occipitoanterior—well flexed head—posterior fontanel easily felt; (B) Occipitoposterior—deflexed head—anterior fontanel easily felt

Management

- **Labor in OP position**, expectant management is the policy, as 90% of OP cases rotate anteriorly and baby is delivered spontaneously or by instruments (ventouse or forceps).
- Instrumental delivery or CS in case of deep arrest

Indications for intervention are:

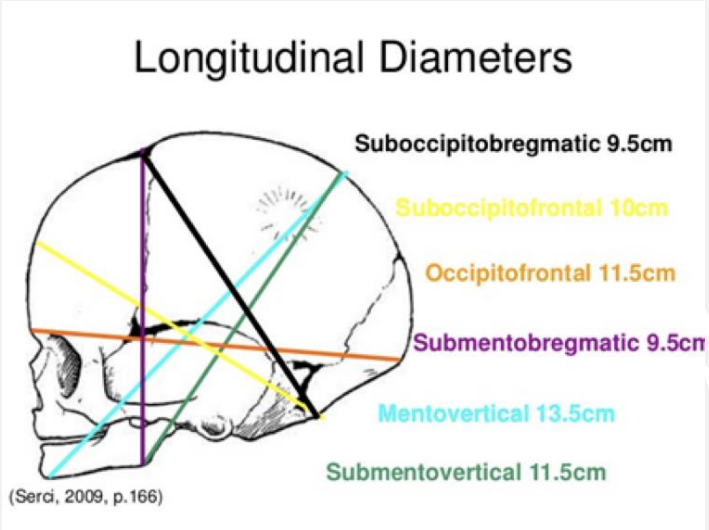
- lack of progress (CPD, android pelvis, deflection of the head, weak pelvic floor failing to guide occiput anteriorly)
- Fetal distress (FHR < 100 or >160 bpm, irregular or meconium stained liquor
- Maternal distress (emotional instability, dehydration, high-colored urine, pulse > 100 bpm).

Occipitotransverse position

- The fetal head normally enters and engages in the maternal pelvis in an occipitotransverse position and then rotates to an occipitoanterior position.

- Causes of persistent OT position:
- 1- Cephalopelvic disproportion
- 2- Altered pelvic architecture(platypelloid or android pelvis)
- 3- Relaxed pelvic floor, brought about by epidural anesthesia or multiparity

- A persistent OT position with arrest of descent for a period of 1 hour or more is known as transverse arrest.
- Arrest occurs because of the deflexion that accompanies the persistent OT position, resulting in the larger occipitofrontal diameter (11 cm) becoming the presenting diameter.



Management

- CS(If the midpelvis is compromised)
- Oxytocin(If the pelvis is judged to be of normal size and the fetus is not macrosomic)
- Manual rotation using the fingers of the examiner’s hand
- Kielland forceps
- Vacuum extraction

Cesarean Delivery

Definition

A fetal delivery through an open abdominal incision (laparotomy) and an incision in the uterus (hysterotomy

Incidence

The rate of cesarean deliveries has increased over fivefold, from **5%** of births in 1970 to at least **25-30%** of births currently.

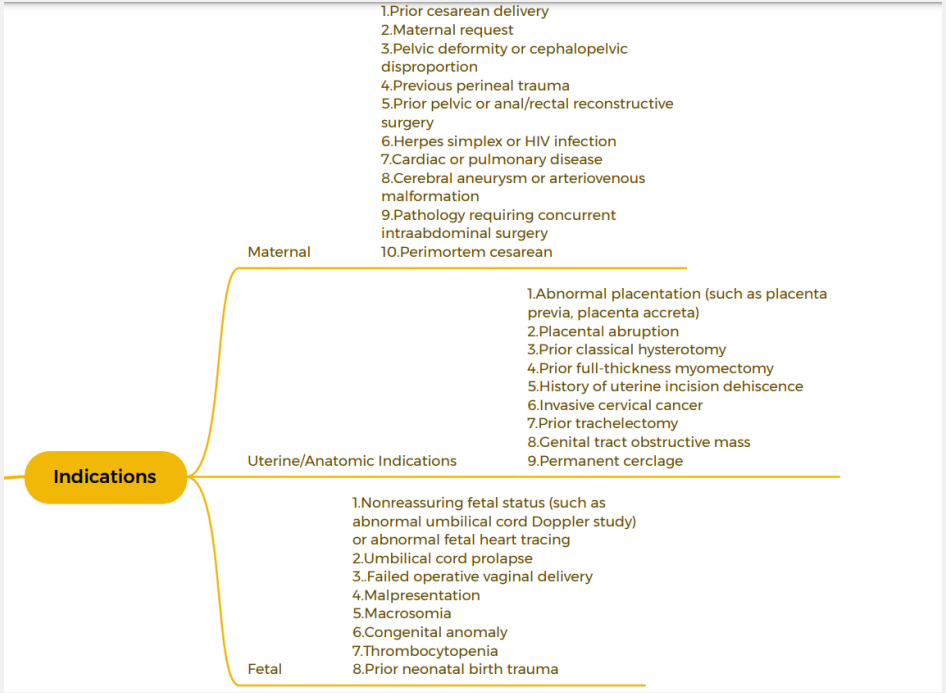
Maternal mortality 5 times that of vaginal delivery

Safe CS rate as defined by WHO is 15%

Recent studies have shown that the maternal mortality rate for an elective cesarean delivery approximates that of vaginal delivery

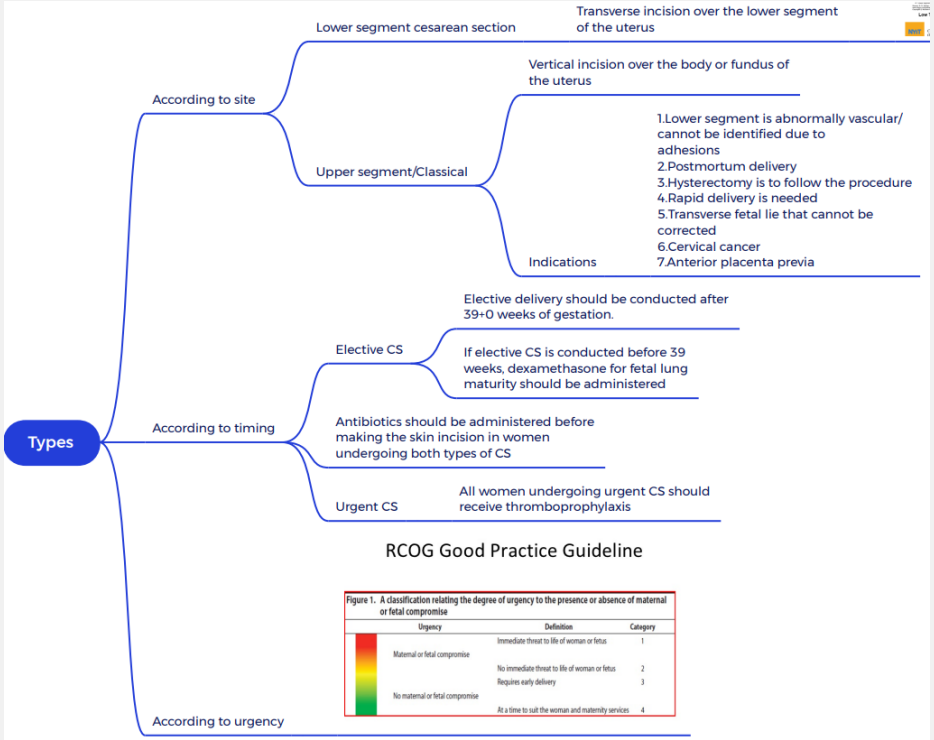
Indications

Four indications account for 90% of the marked increase in cesarean deliveries over the past 40 years: dystocia (30%), repeat cesarean (25-30%), breech presentation (10-15%), and fetal distress (10-15%).



Types of Cesarean Delivery

Cesarean deliveries are classified by the uterine incision, not by the skin incision



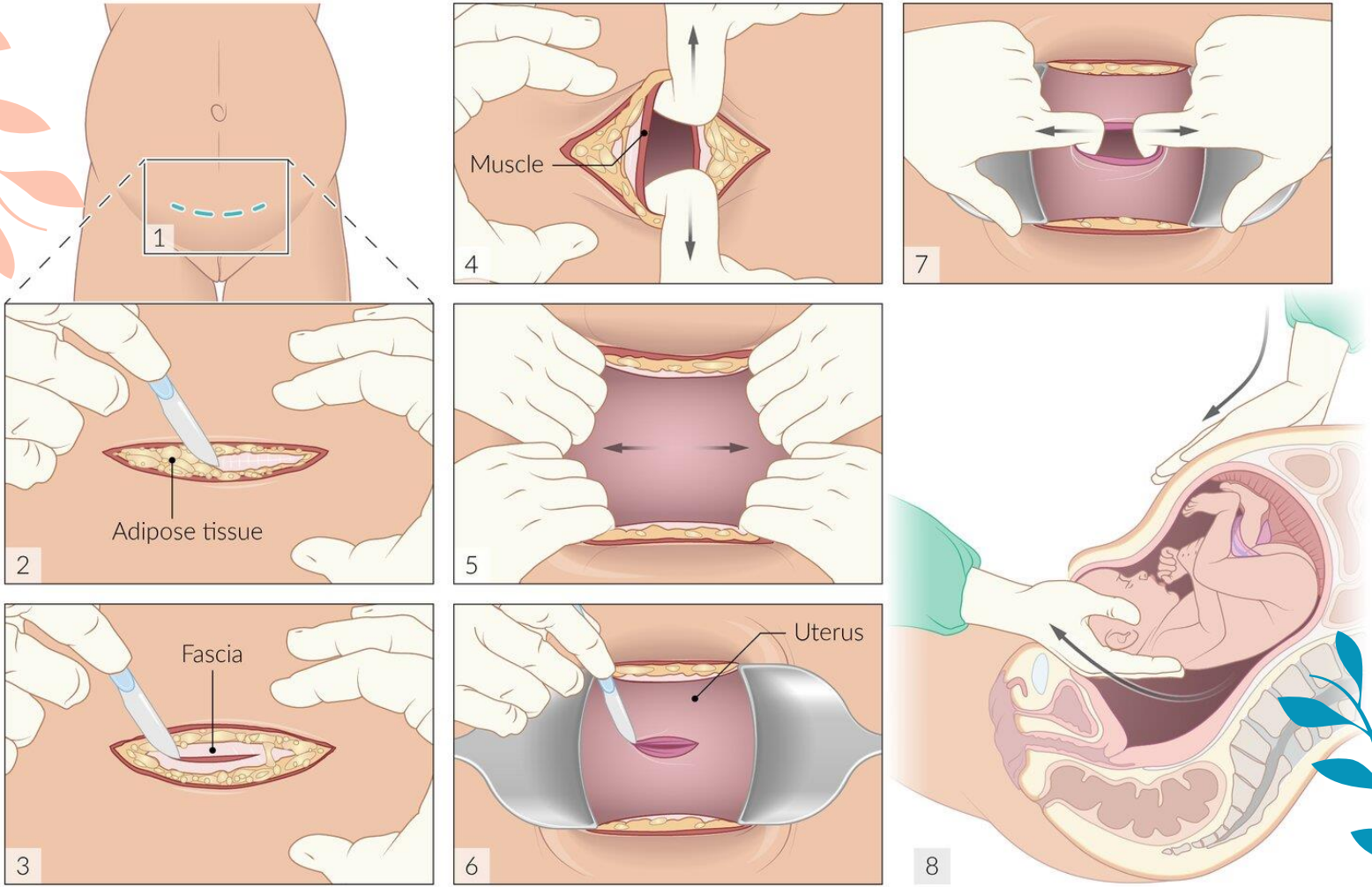
Types of incisions [1]		
	Low segment transverse incision	**Classical incision**

Definition	• Transverse incision of the lower anterior abdomen and noncontractile uterine fundus
	  ◦ Pfannenstiel incision (preferred): a slighly curved incision 2–3 cm above the symphysis pubis
	  ◦ Joel-Cohen incision (Misgav Ladach): a straight incision 3 cm below the anterior superior iliac spine line
		• Vertical incision of the anterior abdomen and contractile uterine fundus

Advantages	• ↓ Risk of:
	  ◦ Adhesions
	  ◦ Hemorrhage
	• Trial of labor in subsequent pregnancy is possible in the absence of any conditions requiring cesarean delivery.
	• Better cosmetic outcomes
		• Can be performed in the presence of conditions affecting the lower segment (e.g., myoma)
		• Fetus can be delivered regardless of lie
		• Easily permits intraoperative extension of incision
		• Shorter incision-to-delivery period

Disadvantages	• Risk of injury to major blood vessels with significant lateral extension
	• Requires fetus to be in longitudinal lie
		• ↑ Risk of:
		  ◦ Uterine rupture in subsequent pregnancies
		  ◦ Hemorrhage
		  ◦ Adhesions

Surgical procedure


1
2
Adipose tissue
3
Fascia
4
Muscle
5
6
Uterus
7
8

1. Suprasymphyseal transverse incision of the anterior abdomen and uterine fundus.

2. Sharp and blunt dissection through the subcutaneous adipose tissue and fascia.

3. Sharp and blunt dissection through the rectus fascia.

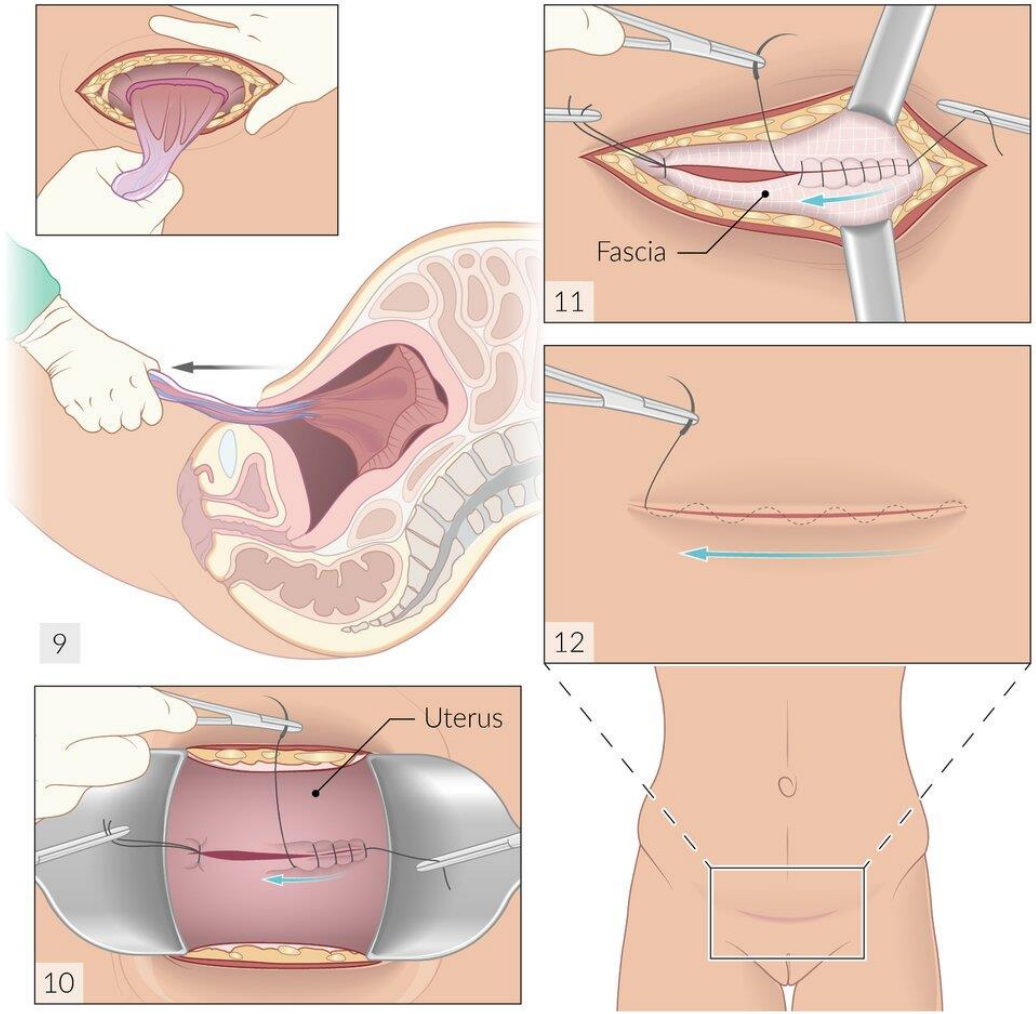
4. Separation of the abdominal, rectal muscles in the midline by lateral blunt finger traction.

5. Lateral extension of the incision.

6. Transverse hysterotomy after insertion of retractors (e.g., Fritsch)

7. Lateral digital extension of the uterine incision

8. Delivery: fetal extraction *without* fundal pressure application.



9. Removal of the placenta through controlled cord traction.

10. Continuous closure of the hysterotomy using corner sutures.

11. Continuous fascial closure using corner sutures.

12. Continuous subcuticular suture.

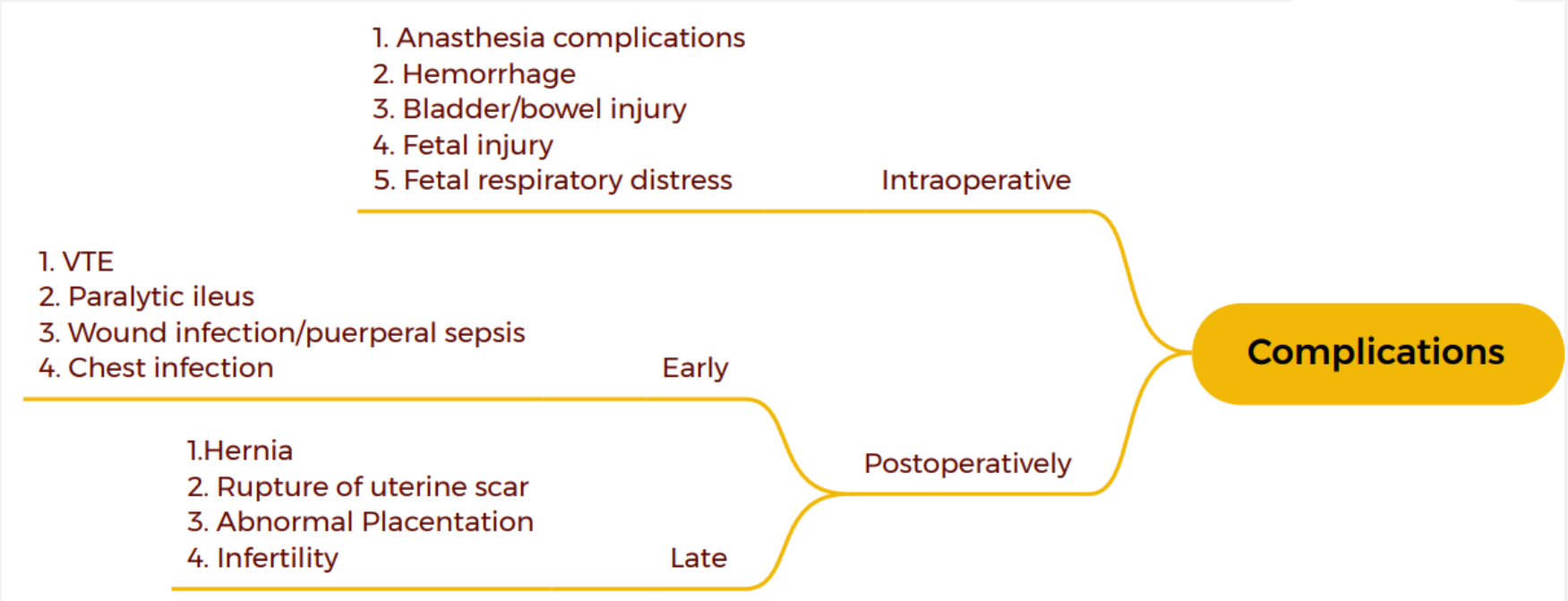
The table should be tilted 15 degrees to the left side (to reduce aortocaval compression and hypotension) and a lower abdominal transverse incision made (eg, Pfannenstiel or Joel-Cohen) rather than a vertical skin incision. A transverse incision is associated with better cosmetic appearance and possibly less postoperative pain and greater wound strength than the vertical midline incision. However, the incision to delivery time appears to be approximately one minute faster with vertical skin incisions.
=A scalpel or electrocautery can be used for tissue dissection, based on the surgeon's preference cutting through the fat and the rectus sheath to open the peritoneum.
-We leave the rectus muscles intact rather than using the Maylard technique. This improves abdominal muscle strength in the short-term.
-We use fingers to bluntly open the peritoneum to minimize the risk of inadvertent injury to bowel, bladder, or other organs that may be adherent to the underlying surface. However, a sharp technique is also acceptable.
The bladder is freed and pushed down
- A transverse lower segment incision is made in the uterus ,the low transverse incision is associated with **less blood loss**, **less need for bladder dissection**, is easier to reapproximate, and has a **lower risk of rupture in subsequent pregnancies**. However, a **low vertical hysterotomy** is preferable in some settings, such as a **poorly developed lower uterine segment** or **lower uterine segment pathology** ,delivery of a **very large fetus (eg, anomalous, extreme macrosomia)** when there is high risk of extension of a transverse incision into uterine vessels or a T or J extension may be required to extract the fetus.

- If the baby is presenting by the breech, traction is applied to the baby's pelvis by placing a finger behind each flexed hip to deliver the bottom first
-After delivery, oxytocin is given intravenously and, after uterine contraction, the placenta is delivered – We recommend spontaneous, rather than manual, extraction of the placenta --- Spontaneous extraction is associated with **lower rates of endometritis and bleeding**.

Uterine closure – Exteriorization or non-exteriorization of the uterus are both acceptable approaches. The choice depends on personal preference and the clinical setting.
For patients who would consider a trial of labour after a previous caesarean birth, we suggest a two-layer uterine closure rather than a one-layer closure .
If a single layer closure is performed, we suggest an unlocked closure .

The incision is closed, usually with two layers of dissolving sutures to the uterus, one layer to the rectus sheath and one layer to the skin

Complications, Post op. Care and long-term sequelae



Newborn issues – **Neonatal risks include iatrogenic prematurity, respiratory problems, and birth injury.**

Maternal care

- **Prophylaxis against hemorrhage** – Oxytocin is administered for prophylaxis against hemorrhage, with many recommending a second uterotonic drug (eg, tranexamic acid). Protocols vary among institutions.
- **Analgesia** – Multimodal, opioid-sparing analgesia, including around-the clock acetaminophen and nonsteroidal anti-inflammatory drugs (NSAIDs), is utilized in all patients.
- **Bladder catheter** – If inserted, removal of the bladder catheter **as soon as possible** postpartum (right after skin is closed) minimizes the risk of infection.
- **Activity, diet** – Early ambulation (when the effects of aesthesia have abated, as soon as within four hours of delivery) and oral intake (within six hours of delivery) are encouraged, as well as chewing gum three times a day.

- **Wound dressings** – Wound dressings may be removed at 6 hours and certainly within 24 hours of application, and patients may shower within 48 hours of completion of surgery.

- **Laboratory tests** – Routine postoperative haemoglobin testing is unnecessary in asymptomatic patients without preoperative anaemia or excessive bleeding at delivery, as the information does not lead to improved outcomes.

- Patients may gradually increase aerobic training activities, depending on their level of discomfort and postpartum complications. Sexual activity may resume when the patient is ready. Heavy lifting should be avoided. Driving can be resumed when the patient is not taking opioids or sedatives and has no pain/mobility issues that would interfere with safe driving.
- The effectiveness of postpartum Kegel pelvic floor muscle exercises for prevention or treatment of incontinence is unclear, but such exercises can be started when contracting the pelvic floor is not painful.

Long-term risks

- **Abnormal placentation (previa, accreta spectrum).**

-The risk of abnormal placentation increases with an increasing number of caesarean births

- **Uterine rupture** during a trial of labour in future pregnancies .
- Long-term abdominal scar complications include **numbness**, **pain**, and **endometriosis**.
- Uterine scar complications include caesarean scar pregnancy and postmenstrual spotting.
- Caesarean birth does not appear to be an independent risk factor for future unexplained stillbirth or subfertility.

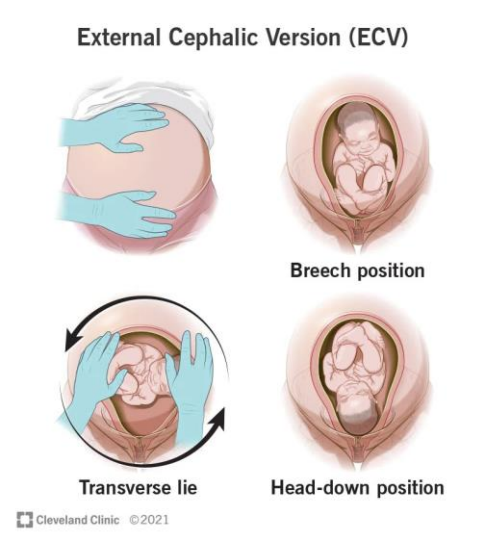
-The rate of bowel obstruction after caesarean birth ranges from 0.5 to 9 per 1000 cesarean births, with the highest risk in patients who have undergone multiple cesarean births

Prevention

Two clinical interventions have been shown to reduce cesarean delivery rates: external cephalic version (ECV) and VBAC

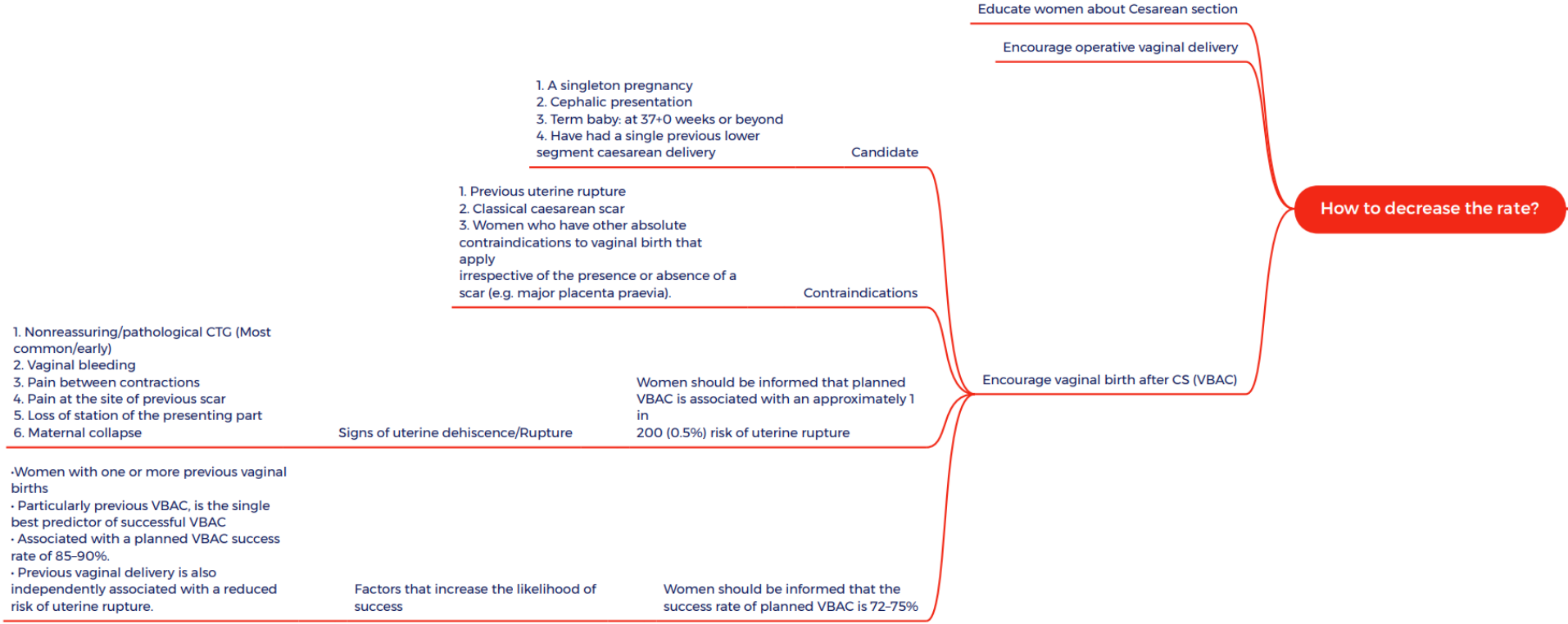
ECV

- ECV converts a breech fetus to the vertex position to avoid a cesarean delivery for breech presentation.
- Done at 36-37 weeks gestation
- Success rate is about 60%



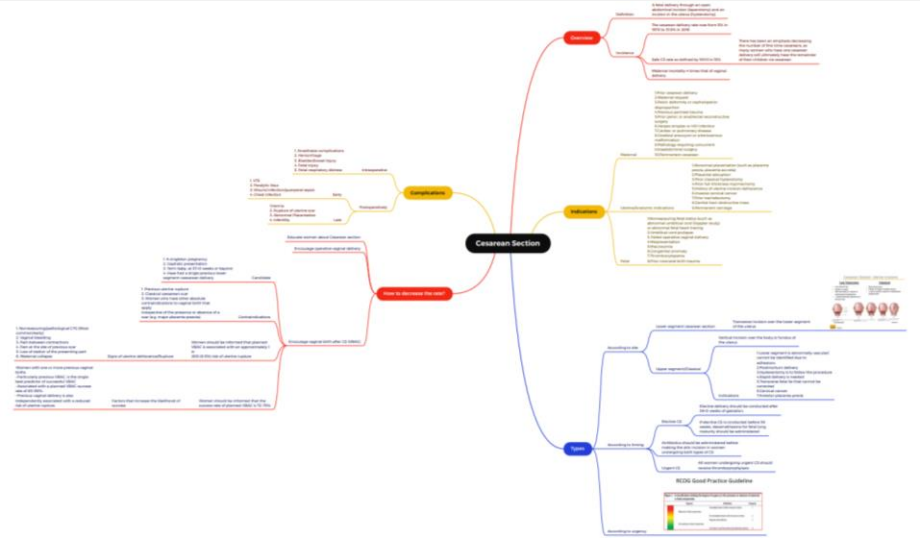
VBAC

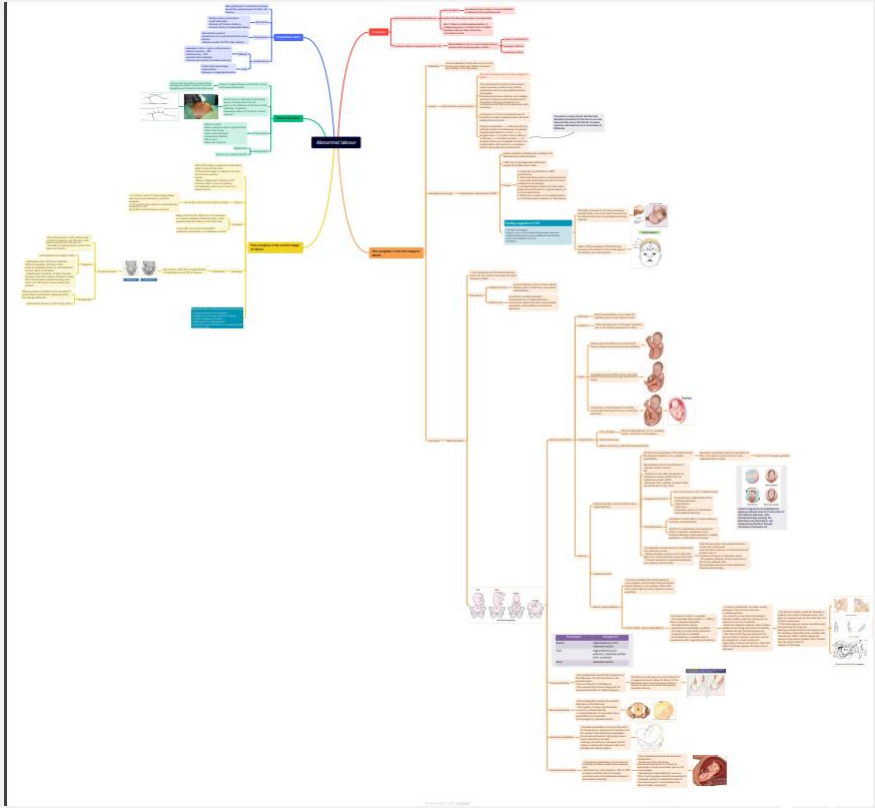
- A trial of labor may be offered if one or two previous LTCDs have been performed
- The uterine incision did not extend into the cervix or upper segment
- There is no history of prior uterine rupture, The overall success rate of VBAC is approximately 70%


How to decrease the rate?
Educate women about Cesarean section
Encourage operative vaginal delivery
Encourage vaginal birth after CS (VBAC)
Candidate
1. A singleton pregnancy
2. Cephalic presentation
3. Term baby: at 37+0 weeks or beyond
4. Have had a single previous lower segment caesarean delivery
Contraindications
1. Previous uterine rupture
2. Classical caesarean scar
3. Women who have other absolute contraindications to vaginal birth that apply
irrespective of the presence or absence of a scar (e.g. major placenta praevia).
Signs of uterine dehiscence/Rupture
1. Nonreassuring/pathological CTG (Most common/early)
2. Vaginal bleeding
3. Pain between contractions
4. Pain at the site of previous scar
5. Loss of station of the presenting part
6. Maternal collapse
Women should be informed that planned VBAC is associated with an approximately 1 in
200 (0.5%) risk of uterine rupture
Factors that increase the likelihood of success
·Women with one or more previous vaginal births
· Particularly previous VBAC, is the single best predictor of successful VBAC
· Associated with a planned VBAC success rate of 85–90%.
· Previous vaginal delivery is also independently associated with a reduced risk of uterine rupture.
Women should be informed that the success rate of planned VBAC is 72–75%

Thank you

Thank you





Mind Maps Link