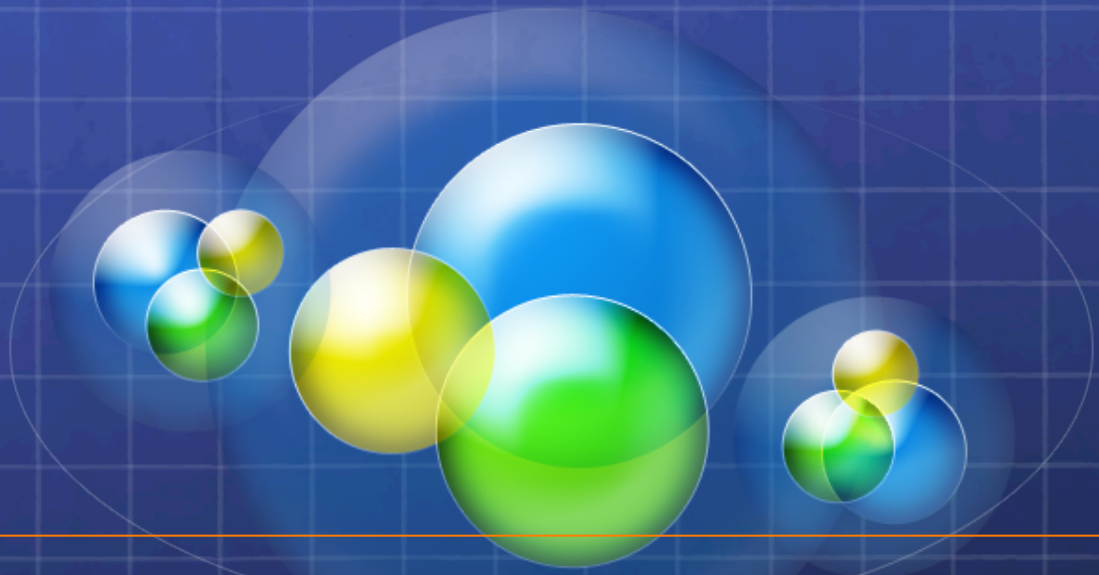


SECOND STAGE OF LABOUR...

PROBLEMS OR MISUNDERSTANDS..??

JOSHI SUYAJNA D.
WWW.SUYAJNA.COM

DYSTOCIA

- immediate instrumental or cesarean delivery is indicated
- when augmentation is needed regardless of subsequent mode of delivery

American College of Obstetrics and Gynecology. ACOG Practice Bulletin Number 49, December 2003: **Dystocia and augmentation of labor.** *Obstet Gynecol* 2003, **102:**1445-1454.

NO CONSENSUS

length of normal labour

Or

diagnostic criteria for dystocia

American College of Obstetrics and Gynecology. ACOG Practice Bulletin Number 49, December 2003: **Dystocia and augmentation of labor.**

INDICATORS OF DYSTOCIA

- 1. Poor head-to-cervix force
- 2. poor engagement of fetal head at onset of labour
- 3. High fetal weight may increase the risk of dystocia
- 4. epidural analgesia (????)
- 5. increasing age in nulliparous women
- 6. sub-fecundity
- fertility-treated pregnancies

Schiessl B, Janni W, Jundt K, Rammel G, Peschers U, Kainer F: **Obstetrical parameters influencing the duration of the second stage of labor.** *Eur J Obstet Gynecol Reprod Biol* 2005, **118:**17-20.

DANISH DYSTOCIA STUDY

- Fetal head above the inter-spinal diameter
- Descent of fetal head is correlated to dilatation of the cervix
- cervix dilatation < 4 cm at admission was associated with an increased risk of dystocia

Obstetric risk indicators for labour dystocia in nulliparous women: A multi-centre cohort study Hanne Kjærgaard[13*], Jørn Olsen[2], Bent Ottesen[1], Per Nyberg[3] and Anna-Karin Dykes[3]

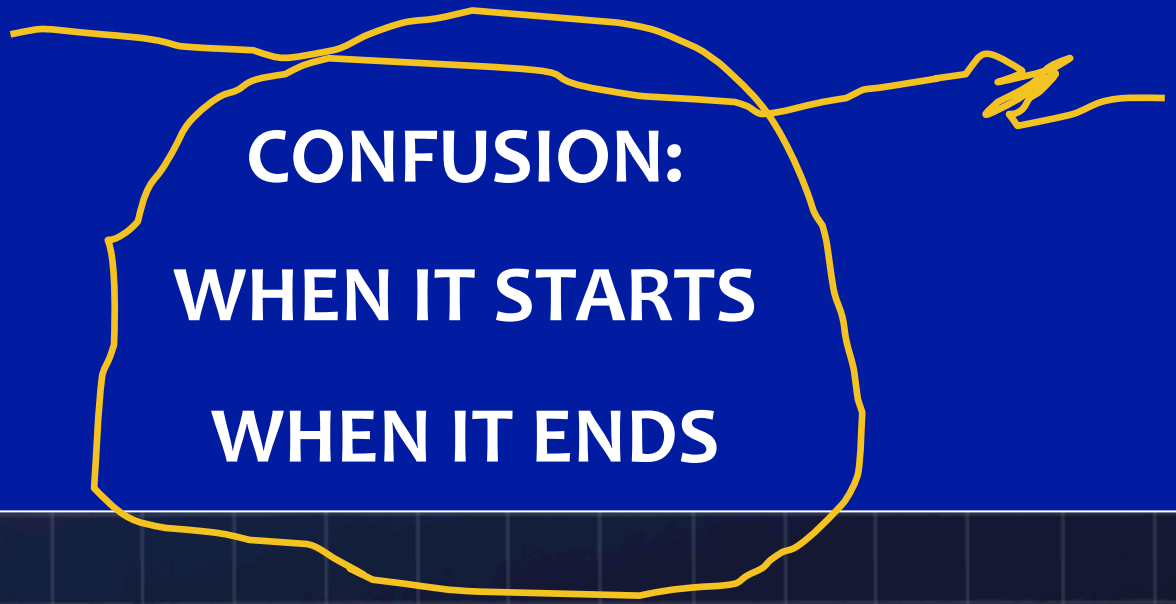
Stages of Labor

- First stage: early, active, transition
  - Dilatation
- Second stage
  - Pushing and birth
- Third stage
  - Delivery of placenta
- Fourth stage
  - Postpartum

DVD = SECOND STAGE OF LABOR

- period of increased risk

MOTHER- BABY- OBSTETRICIAN



PASSIVE PHASE

Full dilatation of the cervix

to

Beginning of bearing down efforts

EXPULSIVE PHASE

- when the mother feels the sensation of bearing down due to pressure of the presenting part on the rectum

- active maternal pushing .

IDEAL MANAGEMENT of second stage

- spontaneous vaginal birth
- without use of instruments
- Without additional procedures.

DURATION

- nulliparous 2 hours
- multiparous 1 hours
- without regional anaesthesia

- ACOG

PROLONGED 2nd STAGE

- lack of continuous progress
- Nalliparous: for 3 hours with regional anaes thesia
  2 h without regional anaesthesia
- Multiparous : 2 hours with or 1 hours with- out
  regional anaesthesia

RCOG & ACOG

ACTIVE 2nd STAGE

- Nulliparous women:
- – birth would be expected to take place within 3 h of the start of the active second stage in most women;
- – a diagnosis of delay in the active second stage should be made when it has lasted 2 h and women should be referred to a healthcare

ACTIVE 2nd STAGE

- Parous women:
- – birth would be expected to take place within 2 h of the start of the active second stage in most women;
- – a diagnosis of delay in the active second stage should be made when it has lasted 1 h and women should be referred to a healthcare professional trained to undertake an operative vaginal birth if birth is not imminent.

MISUNDERSTANDING

TIME LIMIT

IS

ARBITARARY

UNDERSTANDING

- risks of an adverse outcome for mother or her baby

IS NOT EASY & ACCURATE

ASSOCIATIONS of prolonged 2nd stage

- 1.chorioamnionitis
- 2. third- or fourth-degree lacerations
- 3.caesarean section
- 4.operative vaginal birth
- 5.low Apgar

- NALLIPAROUS

NON-SSOCIATION of prolonged 2nd stage

- 1. endomyometritis
- 2.postpartum haemorrhage
- 3.meconium-stained liquor
- admission to the neonatal unit

NALLIPAROUS

PROLONGED 2nd stage in MULTIPAROUS

- 1. Increased risk of operative delivery,
- 2. peripartum morbidity,
- 3. five minute Apgar score less than 7,
- 4. fetal acidosis (umbilical artery pH<7.0)
- 5. presence of meconium-stained amniotic fluid
- admission to neonatal intensive care unit

HOW LONG IS TOO LONG

- ‘the length of the second stage of labour is not in itself an absolute
- or even strong indication for operative termination of labour’

American College of Obstetricians and Gynecologists. Operative vaginal delivery use of forceps and vacuum extractors for operative vaginal delivery. ACOG Practice Bulletin 2000; 17: 1–6.

‘TO INTERVENE OR NOT TO’

- balancing the risks and benefits of continuing pushing
- as against operative delivery’

Royal College of Obstetricians and Gynaecologists. Operative Vaginal Delivery. Green-top Guideline No. 26. London: RCOG, 2005.

MONITORING
PROLONGED 2nd STAGE OF LABOUR

- ongoing obstetric review should be maintained every 15–30 minutes
- BY SENIOR OBSTETRICIAN !!!!!!!

NICE. Intrapartum Care; Care of Healthy Women and their Babies during Childbirth. NICE clinical guideline. London: NICE, 2007.

CAUSES of PROLONGED 2nd stage

- deviations from normal of
  - powers
  - Passages
  - passenger
- combination of these factors.

VERTEX PRESENTATION in prolonged 2nd stage

- 80–90% of vertex : OA
- remaining 10–20%: 90% change OA
- POP : 2–5%
- POP : LARGER DIAMETER OF FOETAL HEAD – only 38% DVD

Ponkey S E, Cohen A P, Heffner L J, Liberman E. Persistent fetal occiput posterior position: obstetric outcome. Obstet Gynecol 2003; 101: 915–20.

Assessment of 2nd stage

- maternal behaviour
- effectiveness of pushing
- fetal well-being,
- fetal position and station

at the onset of the second stage.

Janni W, Schlessl B, Poschers U, et al. The prognostic impact of a prolonged second stage of labor on maternal and fetal outcome. Acta Obstet Gynecol Scand 2002; 81: 214–21.

EPIDURAL ANAESTHESIA vs PROLONGED 2nd stage

- **Increased incidence of**

prolonged 2nd stage

VS

successful management of prolonged

second stage of labour.

Howell C W. Epidural versus non-epidural analgesia for pain relief in labour (Cochrane Review). In: The Cochrane Library, Issue 3, Oxford; 2000.

EPIDURAL ANAESTHESIA

- lower pain scores
- more satisfied with analgesia

Howell C W. Epidural versus non-epidural analgesia for pain relief in labour (Cochrane Review). In: The Cochrane Library, Issue 3, Oxford; 2000.

EPIDURAL ANAESTHESIA

- prolongation of second stage
- more frequent oxytocin augmentation.
- The duration of second stage was increased by an average of 15 minutes

Howell C W. Epidural versus non-epidural analgesia for pain relief in labour (Cochrane Review). In: The Cochrane Library, Issue 3, Oxford; 2000.

EPIDURAL ANAESTHESIA

- Total operative vaginal delivery rate was higher

- incidence of operative vaginal delivery for dystocia was not HIGHER… !

Howell C W. Epidural versus non-epidural analgesia for pain relief in labour (Cochrane Review). In: The Cochrane Library, Issue 3, Oxford; 2000.

EPIDURAL ANAESTHESIA

- **SAFE and EFFECTIVE ANAESTHESIA in second stage of labor**

For INTERVENTIONS:

- 1. labour aug- mentation
- 2. episiotomy
- 3. operative vaginal delivery
- 4. emergency caesarean section.

NICE. Intrapartum Care; Care of Healthy Women and their Babies during Childbirth. NICE clinical guideline. London: NICE, 20 a07.

MISUNDERSTANDING

WRONG

- discontinuing epidural analgesia reduces the incidence of operative vaginal delivery

Howell C W. Epidural versus non-epidural analgesia for pain relief in labour (Cochrane Review). In: The Cochrane Library, Issue 3, Oxford; 2000.

EPIDUARAL ANAESTHESIA

incidence of caesarean section for any indication DID NOT DIFFER

between

parenteral opioids (7.7%)

epidural analgesia (8.0%).

Howell C W. Epidural versus non-epidural analgesia for pain relief in labour (Cochrane Review). In: The Cochrane Library, Issue 3, Oxford; 2000.

AVOID prolonged 2nd stage .. ?

- support
- change of position
- emptying of the bladder
- encouragement.

ACTIVE PARTICIPATION NOT MASTERLY INACTIVITY

SUPPORT

- continuous support during labour
- By
- Members who are NOT
- HOSPITAL STAFF

Hodnett E D, Gates S, Hofmeyr G J, Sakala C. Continuous support for women during childbirth. Cochrane Database Syst Rev. 2003; 3: CD003766. Review.

POSITION of patient

- Women should be discouraged from lying supine or semi-supine
- encouraged to adopt any other position that they find most comfortable.

NICE. Intrapartum Care; Care of Healthy Women and their Babies during Childbirth. NICE clinical guideline. London: NICE, 20 a07.

position

- upright or lateral position compared with supine or lithotomy

was associated with

- 1. weighted mean reduction in duration 16.9 2. a reduction in assisted births
- 3. reduction in episiotomies

Gupta J K, Hofmeyr G J. Position for women during second stage of labour. Cochrane Database Syst Rev. 2003; 3. Art. No.: CD002006.pub2. DOI: 10.1002/14651858.CD002006.pub2.

PUSHING… after full dilatation

- nulliparous women with epidurals were likely to have fewer
- rotational or mid cavity operative interventions

when

- pushing was delayed for 1–2 hours or
- until they had a **strong urge to push**

Roberts C L, Torvaldsen S, Cameron C A, Olive E. Delayed versus early pushing in women with epidural analgesia: a systematic review and meta-analysis. Br J Obstet Gynaecol 2004; 111: 1333–40.

DESCENT & ROTATION
better wait & push

- DILATAION = DESCENT … !!!!!!
  - PASSIVE DESCENT and ROTATION
  - recommended where the fetal status is satisfactory.

Roberts C L, Torvaldsen S, Cameron C A, Olive E. Delayed versus early pushing in women with epidural analgesia: a systematic review and meta-analysis. Br J Obstet Gynaecol 2004; 111: 1333–40.

Oxytocin augmentation

- INADEQUATE CONTRACTIONS : OXYTOCIN AUGUMENTAION IN NULLIPAROUS
- OXYTOCIN WITH EXTREME CARE : MULTIPAROUS

NICE. Intrapartum Care; Care of Healthy Women and their Babies during Childbirth. NICE clinical guideline. London: NICE, 2007.

EPISIOTOMY…????

- A routine episiotomy should not be carried out during spontaneous vaginal birth.
- An episiotomy should be performed if there is a clinical need, such as instrumental birth or suspected fetal compromise.
- Where an episiotomy is performed, the recommended technique is a mediolateral episiotomy originating at the vaginal fourchette and usually directed to the right side. The angle to the vertical axis should be between 45 and 60 degrees at the time of the episiotomy.
- Tested effective analgesia should be provided prior to carrying out an episiotomy, except in an emergency due to acute fetal compromise.

NICE. Intrapartum Care; Care of Healthy Women and their Babies during Childbirth. NICE clinical guideline. London: NICE, 2007.

ROUTINE VS RESTRICTIVE

- RESTRICTIVE EPISIOTOMY : MORE BENEFICIAL

- 1. less posterior perineal trauma
- 2. less need for suturing
- 3. fewer healing complications

Carroli G, Belizan J. Episiotomy for vaginal birth. Cochrane Database Syst Rev. 2003; 1: CD000081(1).

ROUTINE EPISIOTOMY

- 1. more anterior perineal trauma
- 2. no difference in severe vaginal or perineal trauma
- NO DIFFERENCE in dyspareunia, urinary incontinence or severe pain.

Carroli G, Belizan J. Episiotomy for vaginal birth. Cochrane Database Syst Rev. 2003; 1: CD000081(1).

OASIS

- Episiotomies angled closer to the midline were significantly associated with anal sphincter injuries
- angle to the vertical axis should be between 45 and 60 degrees at the time of the episiotomy.

Andrews V, Sultan A H, Thakar R, et al. Risk factors for obstetric anal sphincter injury: a prospective study. Birth 2006; 33: 117–22.

OPERATIVE VD

- avoidable maternal and neonatal morbidity at operative VD
- relates to inappropriate application of the instrument and
- operator inexperience

Murphy D J, Liebling R E, Patel R, Verity L, Swingler R. Cohort study of operative delivery in the second stage of labour and standard of obstetric care. Br J Obstet Gynaecol 2003; 110: 610–5.

ESSENTIAL PREREQUISITE - OVD

SKILLED OPERATOR

Murphy D J, Liebling R E, Patel R, Verity L, Swingler R. Cohort study of operative delivery in the second stage of labour and standard of obstetric care. Br J Obstet Gynaecol 2003; 110: 610–5.

PREDICTORS – FAILED OVD

- 1. occipito- posterior position
- 2. high presenting part
- 3. inadequate analgesia
- 4. birthweight >4000 g,

Murphy D J, Liebling R E, Verity L, Swingler R, Patel R. Cohort study of the early maternal and neonatal morbidity associated with operative delivery in the second stage of labour. Lancet 2001; 358: 1203–7.

VACUUM VS FORCEPS

- DISCUSSION IS A WASTE OF TIME

- instrument most appropriate to the clinical circumstances
- level of skill of OPERATOR

Royal College of Obstetricians and Gynaecologists. Operative Vaginal Delivery. Green-top Guideline No. 26. London: RCOG, 2005.

OVD VS SSCS

- Substantial differences between consultant and specialist registrars
  - In assessment regarding
  - fetal position and station
- consultant …….. OVD…. safe operative vaginal delivery ON THE OT TABLE !!!!!

Olah K S. Reversal of the decision for Caesarean section in the second stage of labour on the basis of consultant vaginal assessment. J Obstet Gynecol 2005; 25: 115–6.

Bloom S L, Casey B M, Schaffer J I, et al. A randomized trial of coached versus uncoached maternal pushing during the second stage of labor. Am J Obstet Gynecol 2006; 194: 10–3.

FAILED VACUUM

- suboptimal application
  - 40%

au A, Sau M, Ahmed H, Brown R. Vacuum extraction: is there any need to improve the current training in the UK? Acta Obstet Gynecol Scand 2004; 83: 466–70.

SUCCESSFUL VACUUM

- significantly less maternal trauma (OR 0.41, 95% CI 0.33–0.50) and with more completed deliveries

Johanson R B, Menon B K. Vacuum extraction versus forceps for assisted vaginal delivery. Cochrane Database Syst Rev 2000; 2: CD000224.

- No more than one-fifth of the head should be palpable on abdominal palpation.
- Cervix fully dilated and membranes ruptured.
- Station at level of ischial spines or below.
- Exact position of fetal head should be determined.
- Excessive caput or moulding should not be
- present.
- There should be noticeable descent of head with
- uterine contraction and bearing down efforts.

FAILED VACUUM

- attempted vacuum delivery has a higher failure rate than forceps as a first line instrument, with failed vacuum deliveries fre- quently completed by forceps. Vacuum failure rates of between 20 and 30% have been reported in two recent RCTs, with higher failure rates for the hand- held vacuum device [23,24]. Failure of vacuum deliv- ery is three to four times more likely with a fetal malposition and is associated with an increased risk of postpartum haemorrhage

Groom K M, Jones B A, Miller N, Paterson-Brown S. A prospective randomised controlled trial of the Kiwi Omnicup versus conventional ventouse cups for vacuum-assisted vaginal delivery. Br J Obstet Gynaecol 2006; 113: 183–9.

THEATRE VD

- arrested progress in the second stage of labour, attempted forceps was more likely to result in completed vaginal delivery than attempted vacuum

Murphy D J, Liebling R E, Verity L, Swingler R, Patel R. Cohort study of the early maternal and neonatal morbidity associated with operative delivery in the second stage of labour. Lancet 2001; 358: 1203–7.

VACUUM VS FORCEPS

- CONTRAVERSIAL AT BEST
- OASIS .. IMMEDIATE… LATE … ???

- MacArthur C, Glazener C M A, Wilson P D, et al. Obstetric practice and faecal incontinence three months after delivery. Br J Obstet Gynaecol 2001; 108: 678–83.
- De Leeuw J W, Struijk P C, Vierhout M E, Wallenburg H C S. Risk factors for third degree perineal ruptures during delivery. Br J Obstet Gynaecol 2001; 108: 383–7.

VACUUM VS FORCEPS

- Fitzpatrick M, Behan M, O'Connell P R, O'Herlihy C. Randomised clinical trial to assess anal sphincter function following forceps or vacuum assisted vaginal delivery. Br J Obstet Gynaecol 2003; 110: 424–9.
- 30. Johanson R B, Heycock E, Carter J, et al. Maternal and child health after assisted vaginal delivery: five-year follow up of a randomised controlled study comparing forceps and ventouse. Br J Obstet Gynaecol 1999; 106: 544–9.
- 31. Liebling R E, Swingler R, Patel R R, et al. Pelvic floor morbidity up to one year after difficult instrumental delivery and cesarean section in the second stage of labor: a cohort study. Am J Obstet Gynecol 2004; 191: 4–10.
- 32. Bahl R, Strachan B, Murphy D J. Pelvic floor morbidity at three years after instrumental delivery and caesarean section in the second stage of labor and the impact of a subsequent delivery. Am J Obstet Gynecol 2005; 192: 789–94.

CONFUSION

- SUCCESSFUL VACUUM…. FAILED VACUUM
- SUCCESSFUL FORCEPS… FAILED FORCEPS
- VAUUM + FORCEPS.. SUCCESSFUL/ FAILED
- SEQUENTIAL VACUUM / FORCEPS.. SUCCESS/ FAILED
- ATTEMPTED VACUUMM.. ATTEMPTED FORCEPS.. LEDING TO SECOND STAGE CESAREAN SECTION….?????

Badawi N, Kurinczuk J J, Keogh J M, et al. Intrapartum risk factors for newborn encephalopathy: the Western Australian case-control study. Br Med J 1998; 317: 1554–8.

CONFUSION… CONFUSION

- DIFFICULT OPERATIVE VAGINAL DELIVERY
- VS
- DIFFICULT SECOND STAGE CS

FEEL GOOD

- FOR YOUNG OBSTETRICIANS
- Mid cavity and rotational operative vaginal deliveries have become unpopular in the US and are increasingly abandoned in favour of caesarean section

Murphy D J, Liebling R. Cohort study of maternal views on future mode of delivery following operative delivery in the second stage of labour. Am J Obstet Gynecol 2003; 188: 542–8.

REALITY

- more than 75% achieved a spontan- eous vaginal delivery with heavier babies in the second pregnancy and very low overall rates of birth trauma or asphyxia

Jolly J, Walker J, Bhabra K. Subsequent obstetric performance related to primary mode of delivery. Br J Obstet Gynaecol 1999; 106: 227–32.

REALITY

- SKILL IN DIFFICULT OPERATIVE VAGINAL DELIVERY

- SKILL IN SECOND STAGE VAGINALL CS
- high rates of major obstetric haemorrhage, extension of the uterine incision and prolonged hospital admission. These risks must be balanced with the potential for pelvic floor trauma and neonatal injury following operative vaginal delivery.

AT THE END OF LONG JOURNEY

- Most women who have reached the second stage of labour will prefer an operative vaginal delivery to a caesarean section if this can be safely achieved with a minimum of morbidity
- MOST OBSTETRICIANS WANT A SAFE LANDING WITHOUT MEDICO LEGAL MORBIDITIES… !!!!

The ‘P’ s of Labor

- Woman/Fetus
  - Power
  - Passage
  - Passenger
  - Position
  - Psyche

- Providers/Support Persons:
  - Patience
  - Persistence
  - Practice/ Pain Relief
  - Psyche

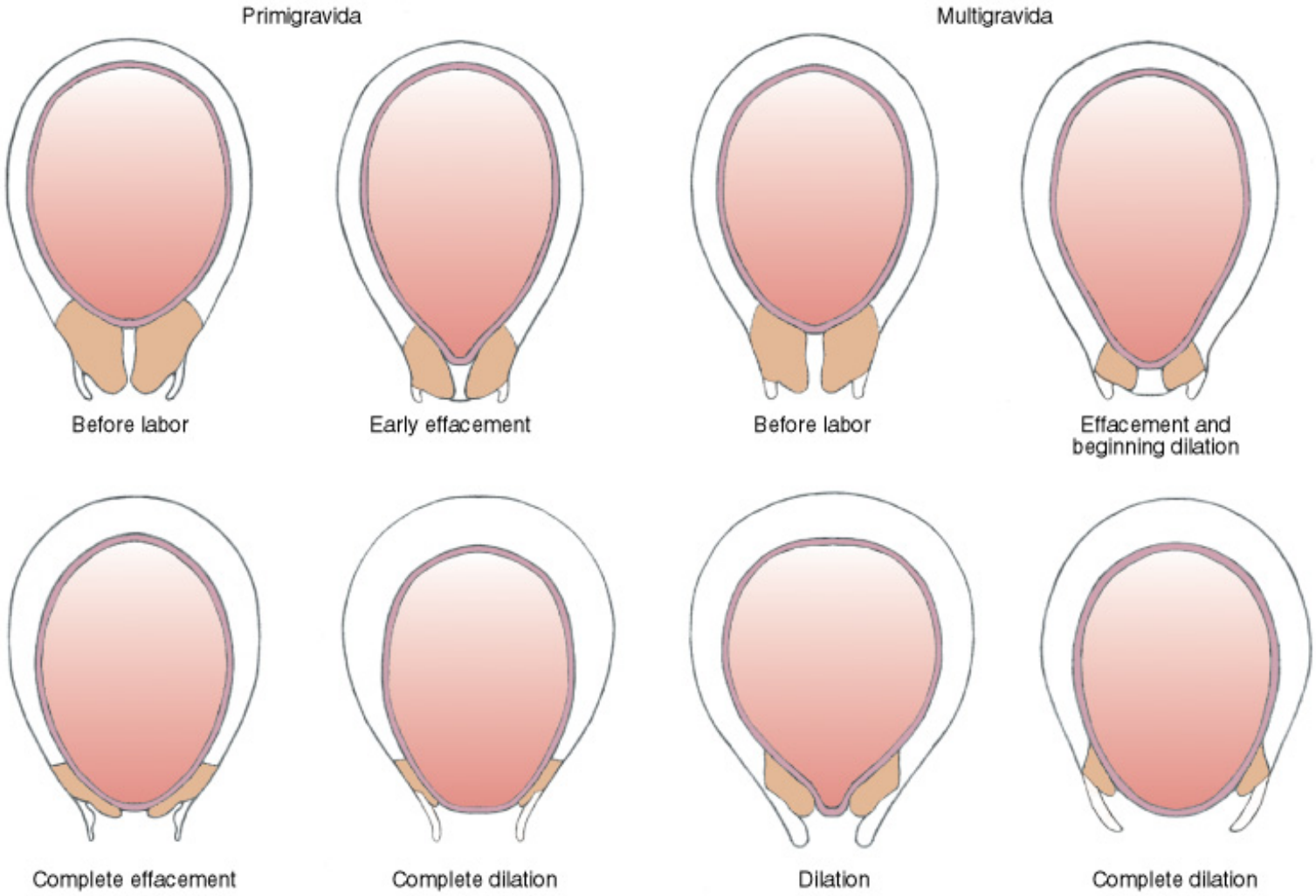
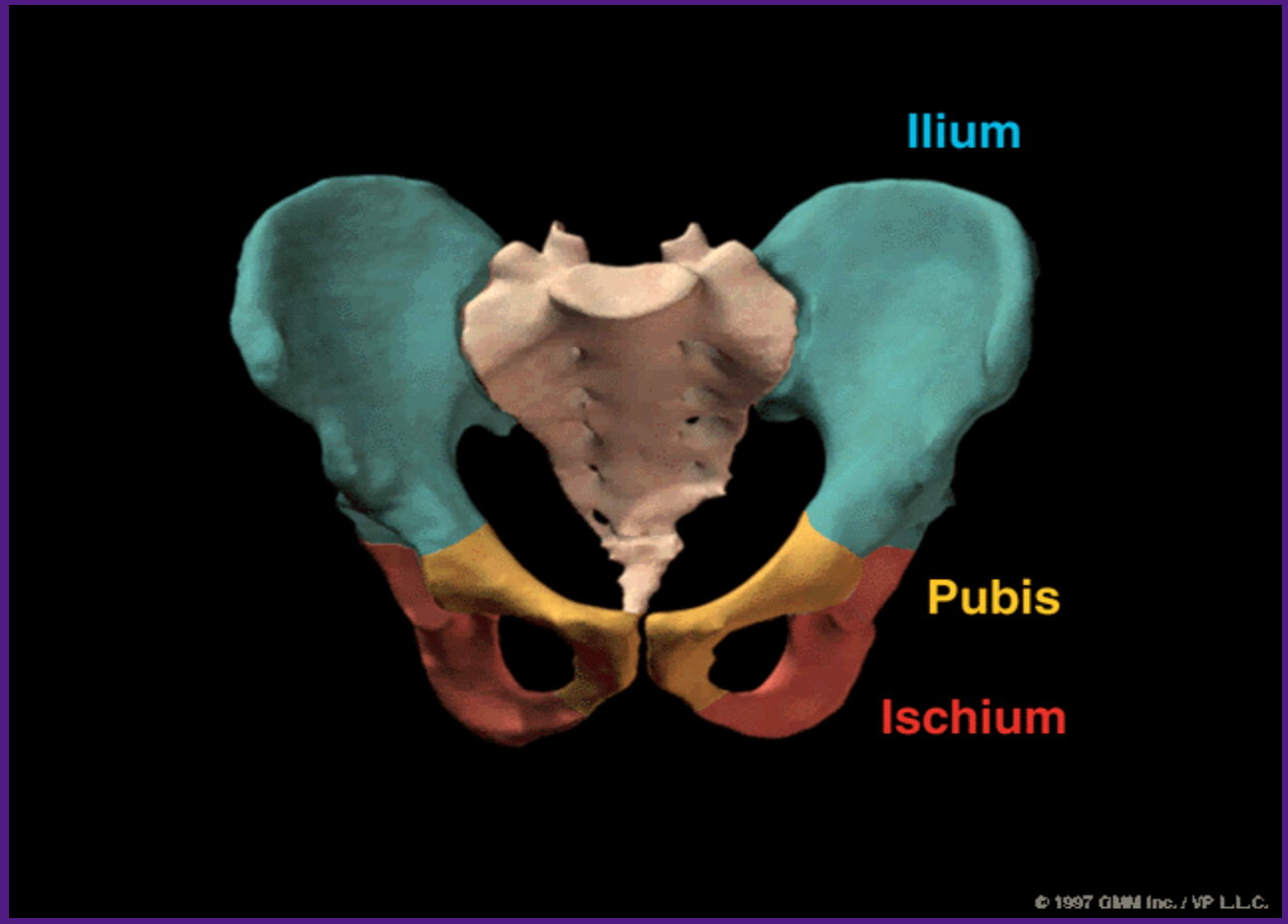
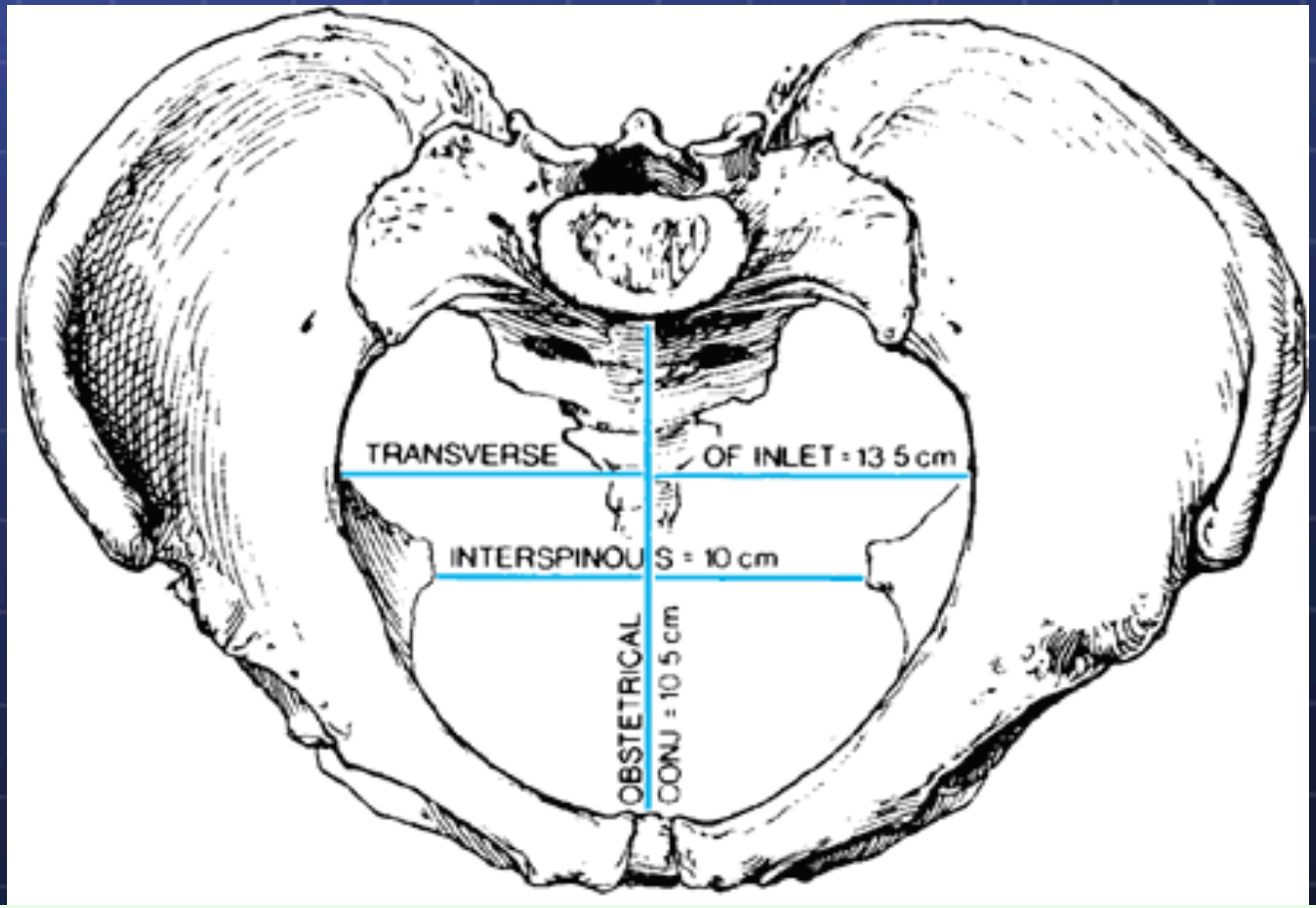


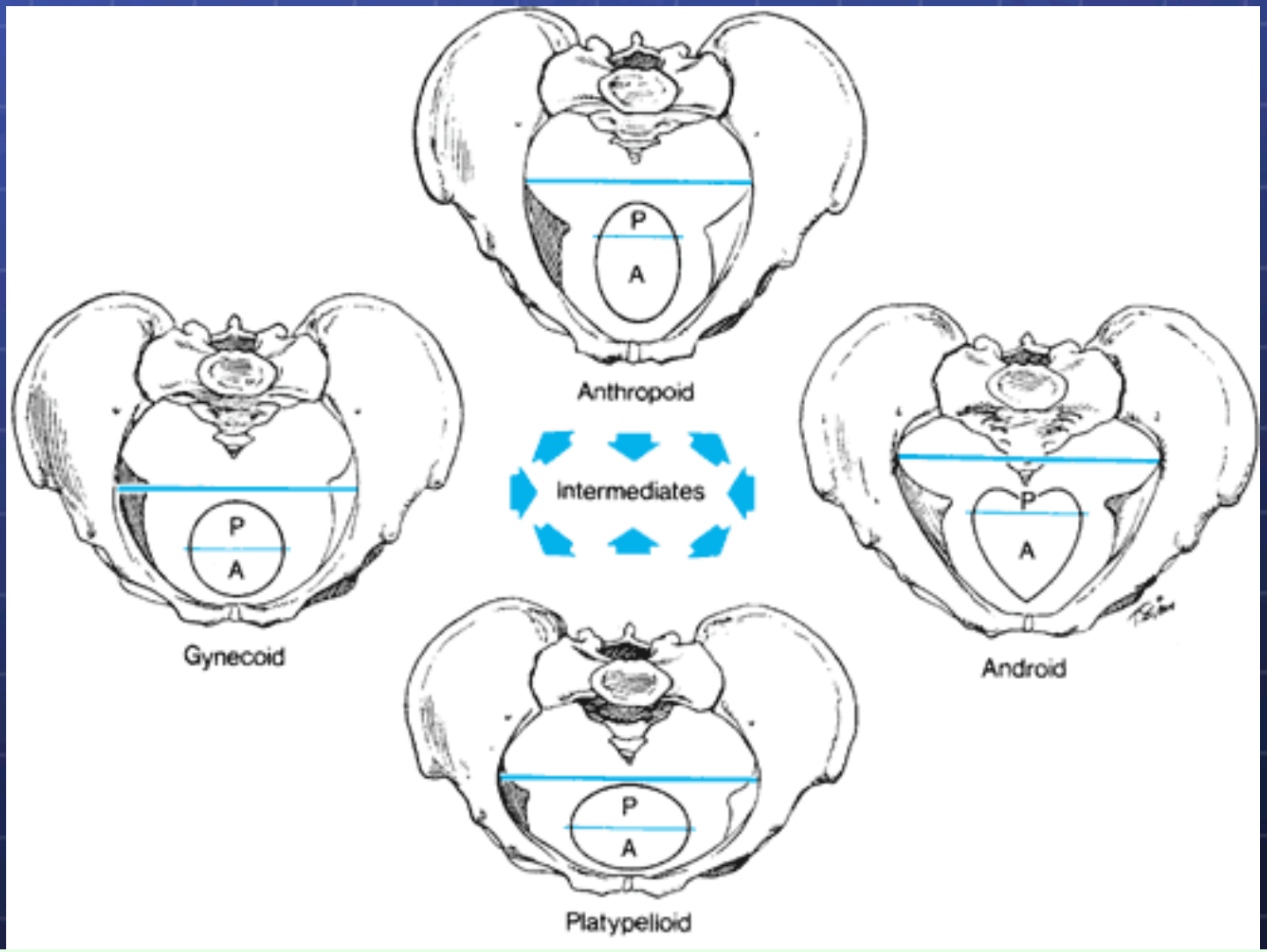
Figure 12-3 Cervical dilation and effacement. During labor the cervix of the multipara remains thicker than that of the nullipara.

The Passage
Pelvic Bones and Pelvimetry

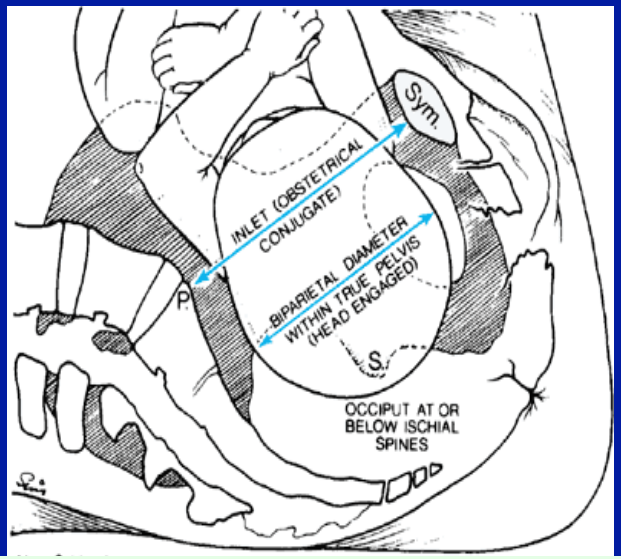


The Passage
Pelvic Bones and Pelvimetry




P
A
Anthropoid
Gynecoid
Intermediates
Android
Platypelioid

1ST & 2ND STAGES OF LABOR…



- CERVICAL DILATATION
- NOT

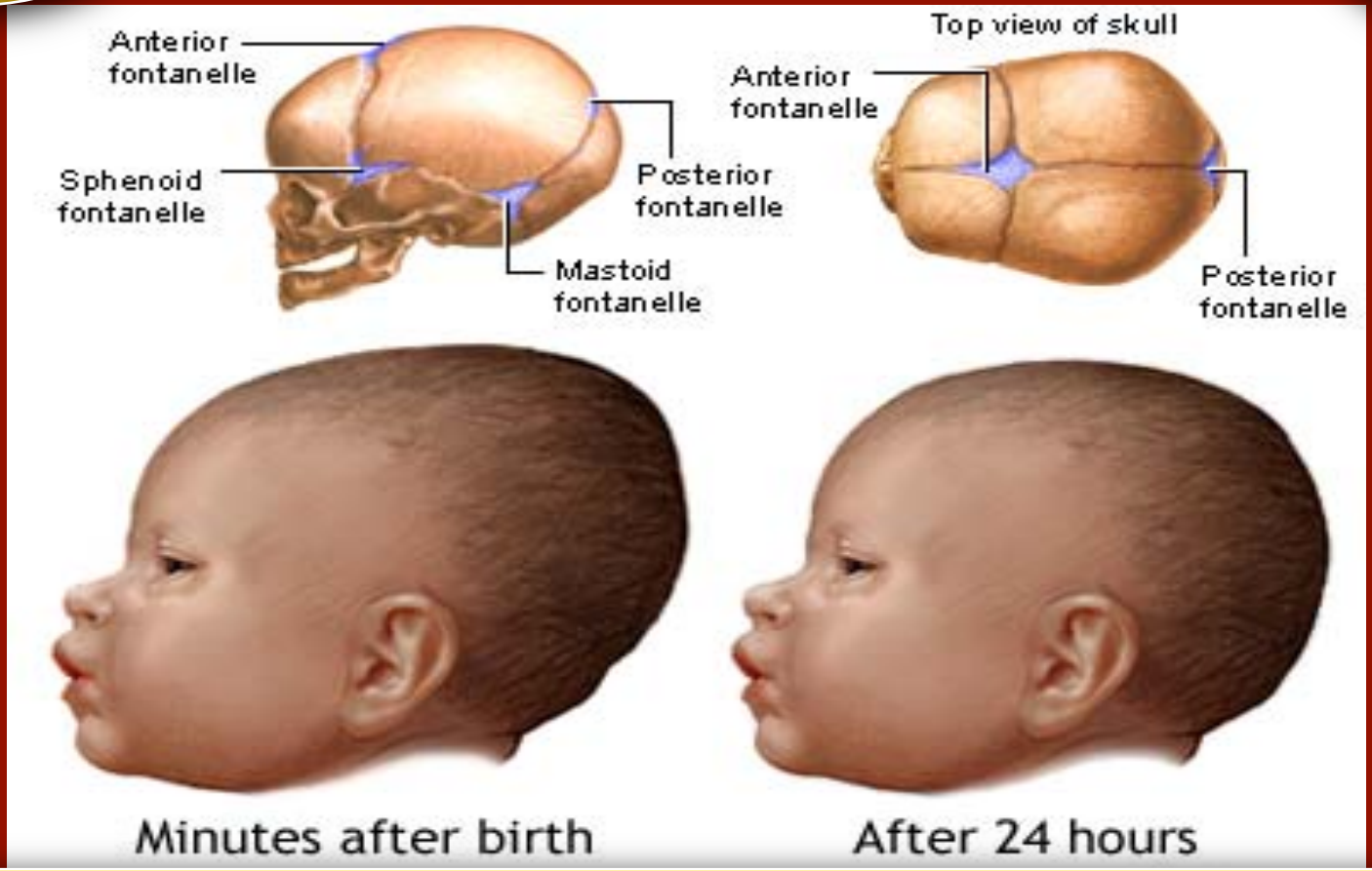
FOETAL HEAD

CONFUSION Station

- Engagement
  - At the level of ischial spines = 0 station
  - Above ischial spines
    - -5 to -1
    - -5 = unengaged
  - Below ischial spines
    - +1 to +5
    - +5 = crowning

3

SHAPE


Anterior fontanelle
Sphenoid fontanelle
Posterior fontanelle
Mastoid fontanelle
Top view of skull
Anterior fontanelle
Posterior fontanelle
Minutes after birth
After 24 hours