

## Normal Labor and Delivery

EMC 420: Maternal & Child Emergency  
Care

D. Trigg, MD

EMC 420

## Objectives

This lecture will enable you to:

- Define the stages of labor.
- Anticipate how the paramedic assists during labor and delivery.
- Consider what kind of intrapartum fetal monitoring might be done in the prehospital setting.

EMC 420

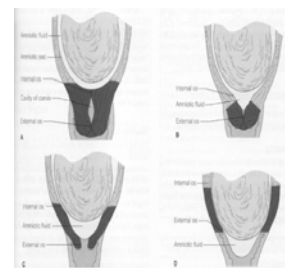
## Labor History

- Contractions / pain:
  - Onset of contractions / pain : Q 2 minutes
  - Duration of each contraction : 60 sec
  - Interval between each contraction : 60 sec
- Bleeding: scant, pink “show”
- Fluids
  - “a little or a lot,” of early, or late leakage
  - clear
- Urge to push (symptom of imminent delivery)

EMC 420

## Cervical Changes on Obstetrical Exam [ in L + D ]

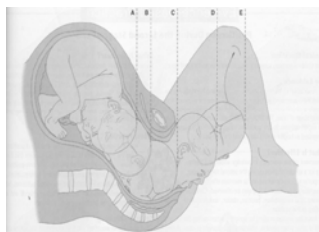
- Effacement
  - 100 % thinning
  - 90% (“anterior lip”)
- Dilatation
  - 10 cm



EMC 420

## Mechanisms of Labor

- Descent
- Flexion
- Internal rotation
- Extension
- External rotation



EMC 420

## Birth Sequence

- Crowning
- Internal rotation is finishing
  - Extension
  - External rotation



EMC 420

### Normal Labor

- Regular contractions
  - Early labor: 10-15 minutes apart
- Cervical dilation and effacement
- Progressive, non-arrested
- Amniotic sac usually ruptures spontaneously towards end of 1<sup>st</sup> stage

EMC 420

### Stages of Labor

- First stage:
  - Regular contractions
  - 10 hrs ( in a primip.)
- Second stage:
  - Delivery
  - 10-60 min
- Third stage:
  - Placental expulsion
  - 5-20 min
- Fourth stage:
  - Blood loss stage
  - 1 hr

EMC 420

### Cervical Changes During the First Stage of Labor

- Effacement
  - From long and thick
  - To paper-thin
- Cervical Dilation
  - From long and tight (1cm)
  - To thin and 10cm widened
- Active labor: progressive dilatation
  - 1.2 cm/hr in nullipara
  - 1.5 cm/hr in in multipara

EMC 420

### Second Stage (Birth)

- Contractions
  - 2-3 min. apart
  - 60 sec duration
- Urge to “push”
- Crowning
  - Head in the birth canal and on the perineum
- Cervix
  - Fully (10 cm) dilated
  - Fully (100%) effaced
- Avg duration:
  - nullip: 50-60 min.;
  - multip: 20-30 min.

EMC 420

### Third Stage of Labor

- Signaled by a rush of blood [ 500 mL ]
- Duration
  - From the time of delivery of baby
  - Until the placenta is expelled
  - 5-60 minutes
- The uterus then should begin to contract

EMC 420

### Delivery of the Placenta

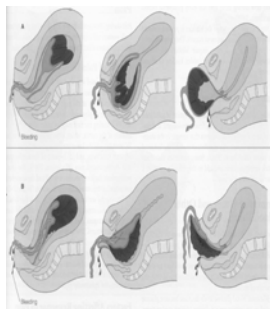
- Begin transport while waiting for placenta
  - To avoid delay of 5-20 min after delivery
- ***Never pull forcefully on cord!***
- Place placenta in bag for later inspection

EMC 420

## Placental Separation

Signs that placental delivery is imminent:

- Fresh show of blood from vagina
- Umbilical cord lengthens
- Mother feels contractions ( +/- urge to push)



EMC 420

## “Forth Stage of Labor”

- The 1 hour immediately after delivery of the placenta
- **Observe bleeding**
- Place placenta in bag for later inspection
- May encourage mother to breastfeed
- Fundal massage

EMC 420

## Difficult Labor

Difficult first stage of labor:

- More common in nulliparous patient
- Causes [and see dystocia]
- Passage (inadequate pelvic anatomy)
  - Passenger (malpresentation, macrosomia )
  - Power (poor contractions)
    - Dilation and descent can be slowed by:
      - Sedation (morphine; 85% will progress later)
      - Malposition (OP presentation - back pain )
      - Other (infection,...)

EMC 420

## Abnormal Labor Progress

- Protracted labor
  - Slow cervical dilation [ and/or fetal descent]
- Arrested labor
  - 2- 4 hr of labor without cervical dilation and/or without fetal descent

EMC 420

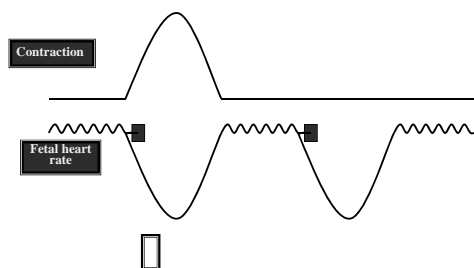
## Labor that does not Progress

Protracted labor +/-or Arrested labor

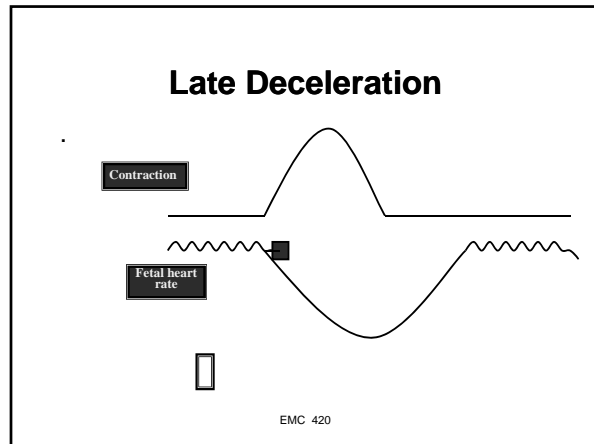
- AKA other terms:
  - CPD (cephalopelvic disproportion)
  - Failure to progress
  - Indication for C section (in up to 50% of cases)
- High Risk !

EMC 420

## Variable Deceleration



EMC 420



### Dystocia and Arrested Labor

- Failure of the “Ps” (power,...)
- Causes of loss of power - dystocia:
  - Early admission to L and D
  - Restriction of ambulation and dystocia
    - Walking results in shorter labors (small RCT study)
  - No trained support (doula)
  - No rest; no change of position

EMC 420

### Summary

We have discussed:

- Stages of labor (remembering the three “Ps” of successful labor).
- What procedures that the paramedic can anticipate to assist with during labor and delivery.
- Fetal monitoring (decelerations) that might be done, though difficult in the prehospital setting.

EMC 420