Abnormal Labor and Delivery

EMC 420: Maternal & Child Emergency Care

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Objectives

This lecture will enable you to:

- Define Preterm labor. Discuss PTL risk factors
- Discuss premature rupture of membranes (PROM)
- Discuss malpresentations breech and prolapsed cord
- Discuss in particular treatment for prolapsed cord
- Discuss the malpresentation of shoulder dystocia. Is there any treatment for this?

Preterm Labor

- Definition (3):
  - Before 37 weeks
  - Contractions (more than 3 / 30 min.)
  - Cervical changes (dilatation)
- Incidence: 12% of all deliveries
- Rate: increasing in past 20 years

Preterm Labor Risk Factors

- History:
  - Age (teens; advanced maternal age)
  - Lower economic status
  - Prior preterm
  - Twins
- Pregnancy complications
  - PROM
  - Infection
    - Urinary
    - Genital
    - Pneumonia

Premature Rupture of Membranes

PROM

- Rupture of membranes at least 1 hour before onset of labor
- 8% of all pregnancies
- 30% of these are preterm [before 37 wk.] (PPROM)
- Risk factors similar to preterm labor

Evaluation of Premature Rupture of Membranes

Usual Questions

- Are membranes ruptured? What color?
- Are you having contractions?
- What is your due date?
- Are you having twins?

PE

- Fundal size [for prematurity: less than 1/2 distance between umbilicus and the xiphoid]
- Do NOT do a non sterile cervical exam (not in L and D either)

Management of PPROM / PTL

During transport

- Consider
  - Local resources
  - Immanence of delivery
    - Urge to push
    - Crowning
    - Contractions less than 2 min apart
    - *"I'm going to have this baby **now** ! "*

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Management of Premature Rupture of Membranes

Any transport medications will probably be initiated prior to transport

- Consider
  - Dexamethasone 6 mg IM
    - Reduces infant mortality
  - Tocolytics
    - No evidence of ability to stop labor for long term
    - Does allow for 1-2 days (transfer; steroids)

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Management of Premature Rupture of Membranes - Tocolytics

Tocolytics (Ritodrine, Mag, Terbutaline)

- Magnesium Sulfate
  - IV bolus 4-6 grams
- Followed by 1-4 grams / hr infusion
  - Therapeutic: 6 mg/dl
  - Loss of KJ / DTR at 8 mg/dl
  - Respiratory arrest after 15 mg/dl
  - Antidote Calcium Gluconate 1 gram / 3 min.

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Malpresentations

- Occiput posterior
- Breech
- Prolapsed cord
- Shoulder dystocia

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Malpresentations

- Occiput posterior (more difficult spontaneously deliver)
  - Back pain
- Breech
  - Footling : foot-first
  - Complete / Frank : buttocks-first
  - Risks of breech
    - Prematurity
    - Multiparity
    - Previous breech
    - Fetal abnormalities

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Breech Delivery

- Presenting part / long transport time
  - Part : buttocks / foot
  - Hands supporting the emerging breech
  - Keep fetal back/sacrum anterior
  - Gentle traction of fetal pelvis
  - Posterior vaginal pressure / provide an airway
  - +/ - suprapubic pressure by partner

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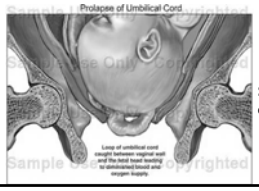
Prolapsed Cord

- ROM
- Presenting part: cord first, then:
  - Buttocks
  - Foot
  - Head
- Rapid response to prolapse

Prolapsed Cord

Presentations

- Breech
  - And all the complications of breech
- Vertex
  - Dangerous because the advancing head will *p*ress and tamponade the cord



Sample photo from: catalog.nucleusinc.com

Rapid response to ***P*** rolapse

- ***P***osition (knee-chest)
- ***P***ressure off of the cord
- ***P***ress the head backwards- up into the uterus
- ***P***ant (tell mother "pant / don't push")
- ***P***ersist with the above to OR (not L+ D).(Call-in)
- Prepare for rapid delivery (premie breech)
- Palpate the cord (assessing FHT)
- Do not attempt to replace the cord
- Protect cord, but do not try to wrap the cord

Shoulder Dystocia

- Risk factors
- Complications
- Is there any prehospital treatment for this?

Shoulder Dystocia Risk Factors

Risk factors: passage / passenger / power

- Maternal short stature
- Gestational diabetes
- Postdates (40^{+} wks)
- Excessive weight gain +/or obesity
- Protracted labor ; prolonged 2nd stage
- Fetal head bobbing during 2nd stage

Shoulder Dystocia Complications

- Neonatal
  - Brachial plexis palsy
  - Clavicle fracture (even humeral fx)
  - Acidosis
  - Hypoxia
    - Brain injury
- Maternal
  - Rectovaginal fistula ; anal sphincter injury
  - Uterine rupture
  - Post partum hemorrhage

Recognition and Prevention Shoulder Dystocia

- Recognition
  - Fetal head delivers, then retracts ("turtle sign")
  - Gentle traction is NOT working
  - Nuchal cord is not the explanation
- Prevention
  - Glycemic control; weight control
  - Deliver in alternate positions
  - Finessing the delivery of the anterior shoulder

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Prehospital Treatment for Shoulder Dystocia ?

Is there any prehospital treatment for this?
What is the midwife approach?

- H elp (call for help from partner, family,..)
- E valuate timing of transport
- L egs (flex thighs onto abdomen) [McRoberts]
- P ressure in suprapubic area (CPR-like)
- E xpand the perineum [midwife: pressure; ED: episiotomy]
- R oll into hands and knees position

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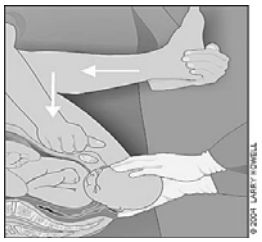
Shoulder Dystocia - Midwife Approach



L egs (flex thighs onto abdomen) [McRoberts]

- Straightens maternal lumbar curve
- Increases AP diameter
- Facilitates greater than 40% of shoulder dystocias
- Used together with suprapubic (CPR-style) pressure

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Shoulder Dystocia - Midwife Approach , continued

R oll : hands + knees

patient rolls into an "all-fours" position

- Increases pelvic diameters
- Gravity may also help dislodge the impacted anterior shoulder
- Posterior shoulder can sometimes be delivered with gentle *downward* traction

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Summary

We have discussed the prehospital evaluation of various intrapartum and delivery complications:

- Preterm labor
- Premature rupture of membranes (PROM)
- Discuss malpresentations breech and prolapsed cord
- Discuss in particular treatment for prolapsed cord
- Discuss the malpresentation of shoulder dystocia. Is there prehospital treatment ?

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