Shoulder Dystocia

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Objectives

1. Identify the maternal and fetal risk factors associated with shoulder dystocia
2. Describe the following interventions:
   McRobert’s Maneuver, Suprapubic Pressure,
   Wood’s Screw & Rubin Maneuvers & Delivery of the Posterior Arm
3. Discuss the adverse consequences with the use of fundal pressure and associated legal liabilities
4. Describe the maternal, fetal and neonatal complications associated with shoulder dystocia

Shoulder Dystocia

- Obstetrical Emergency! Uncommon & unpredictable
- Definition:
  Occurs after delivery of the fetal head when the anterior shoulder IMPACTS behind the symphysis pubis preventing delivery of the torso.
Shoulder Dystocia

- Estimated incidence 0.2%-3% (retrospective studies); 3.3%-7% in prospective studies; and 3.7%-12% with prior shoulder dystocia
- Risk with infant >4500g (9lbs 14oz) is 9.2%-24%; >5000g (11lbs) 14%-20%
- With diabetes & >4500g rates increase to 19.9-50%
- Early induction for macrosomia is not endorsed by ACOG. C/S however may be considered for the diabetic mom with an EFW >4500 grams
- And many occur in women without diabetes and with a normal pelvis and average size fetus. 40-60% occur in infants <4000g (8lbs 13oz)

Risk Factors (Maternal)

- *Previous shoulder dystocia
- *Diabetes
- *Fetal macrosomia or previous macrosomia (best defined as >4500g, although >4000g have been used in some studies)
- Postterm/postdate pregnancy
- Short stature
- History of large infants in the family; discrepancy between size of parents
- Maternal obesity/excessive maternal weight gain
- Abnormal pelvic anatomy

*most strongly associated with shoulder dystocia
Risk Factors (Fetal)

- Suspected Macrosomia

Infants of diabetics usually have larger shoulder & extremity circumferences, a decreased head-to-shoulder ratio, higher body fat, & thicker upper extremity skin folds. There are anthropometric differences in babies of diabetic mothers.

Normal weight vs Macrosomia
**Risk Factors** (Labor Related)
- Assisted vaginal delivery (vacuum or forceps)
- Protracted/prolonged active phase of first stage of labor
- Protracted/prolonged second-stage labor (be suspicious if >2hrs.; or 3hrs. w/ an effective epidural in a primip; & >1hr. in a multip)
  * Any delay in descent and rotation should be a cautionary warning!

**Risk Factors** (cont...)
- Although many risk factors have been identified in the literature, there is little consensus about predicting the event of shoulder dystocia
- Most cannot be predicted! And most cases actually occur among infants who weigh between 7 and 8 pounds
- Most often suggestive to be predictive is that of reoccurrence.

**Important Signs...**
- "Turtle Sign" fetal head emerges and then pulls back tight against the maternal perineum, like a turtle in a shell. Fetal head extremely tight against perineum.
- Failure of spontaneous external rotation and restitution
**Fetal Complications**

- Brachial plexus palsy (4-15%)
- Clavicle or humerus fracture
- Fetal hypoxia, with or without permanent neurologic damage
- Fetal death

**Brachial Plexus Injuries**

- **Erb’s palsy**: (most common)
  - Involves C4 to C6 nerve roots
  - Weakness or paralysis of muscles of the shoulder & biceps. Inability to raise arm, although the fingers move.
- **Klumke’s palsy**: (rare)
  - Lower cervical root C-8 to T-1
  - Limited to wrist and hand with major motor deficits in muscles working the hand “claw hand”
  - Grasp reflex is abolished

**Initial Treatment:**
Immobilize, PT, ROM exercises
Brachial Plexus Injury

- This infant has brachial plexus birth palsy. The arm is rotated inwardly (internal rotation) toward the body and the infant cannot move the arm effectively.
- Most palsies resolve in 6-12 months, with fewer than 10% resulting in permanent damage.

(Courtesy of Texas Scottish Rite Hospital for Children)
Erb’s Palsy

- Child unable to raise her right arm above her head

Fetal Complications cont...

- Hypoxia: when delivery of the body is delayed the hemodynamics of blood flow are hindered and the lack of adequate blood flow does not permit adequate oxygen transfer during delivery. **Start the clock!**
- Fetal pH will drop by an estimated 0.011 per minute of head-to-body interval during birth. If interval is >4 min. there is a greater risk of neonatal depression

Maternal Complications

- Postpartum hemorrhage (d/t long labor, large baby)
- Vaginal or cervical lacerations
- 3rd or 4th degree episiotomy or tear
- Rectovaginal fistula
- Uterine rupture
- Symphyseal separation
- Neuropathy (excessive pressure applied during McRoberts may stretch the femoral nerve and lead to subsequent neuropathy, interfering with motor function)
## Shoulder Dystocia Management/Maneuvers

### Goal:
- Reduce the time from delivery of fetal head to delivery of the body
- Maintain calm demeanor &
- Call NICU/ALS/Peds team for delivery
- **NEVER USE FUNDAL PRESSURE!**
  * further impacts the shoulder delaying birth resulting in maternal-fetal injuries
  * no national guidelines exist to support the use of fundal pressure

### Step #1
- Normal gentle delivery traction by delivering Provider
- Assist patient and position so her buttocks are at edge of bed

### Gentle & Excessive Downward Traction
Step #2
McRoberts Maneuver

Step #3
- Suprapubic Pressure
Suprapubic Pressure

Additional Steps: Internal Maneuvers (by Provider)

- Rubin Maneuver
Rubin Maneuver

If the Rubin maneuver alone is unsuccessful, the Woods Screw can be performed by placing fingers from the other hand in front of the fetal arm of the other side, to promote rotation in the same direction.

If neither of these two are successful the Reverse Woods Screw maneuver can be employed which attempts to rotate the fetal body in the opposite direction.

Woods Screw Maneuver

Internal maneuvers cont...

Delivery of posterior arm
### Episiotomy

- A larger episiotomy may be made by the provider. This does not enlarge the outlet or pelvic diameter by rather enables the provider more room to perform the internal maneuvers.

### Maneuvers of Last Resort

- Deliberate clavicle fracture
- Zavanelli maneuver (cephalic replacement)  
  [In 2009 a survey revealed 85% of Obstetricians have never used this maneuver]
- General anesthesia (provides uterine relaxation, oral or IV nitroglycerin can also be used as an alternative)
- Emergency Cesarean Section
HELPERR Mnemonic for Shoulder Dystocia

(Also: Advanced Life Support in Obstetrics)

LEGAL IMPLICATIONS & LIABILITY ISSUES

Shoulder dystocia with resulting brachial plexus injury is one of the most common birth events precipitating litigation.

Most common reason for nurses to be named in these cases is proceeding with improper techniques (fundal pressure, incorrectly applied suprapubic pressure, or invasive maneuvers without training).

ROLE OF THE RN

Be prepared! Reassure patient

- Review & assess for risk factors & communicate
- Recognize & communicate labor abnormalities/delays
- Empty bladder regularly
- Ensure appropriate staff called & present at delivery (time when calls for help went out and when help arrived)
- Appropriately initiate corrective maneuvers
- Document what is seen and what you did
- Request and obtain cord gases
- Shoulder Dystocia Drills
Shoulder Dystocia Drills

- Reports demonstrate a significant decrease in obstetrical brachial plexus injuries after initiation of interdisciplinary team training and simulation drills for shoulder dystocia.
- Drills and training recommended by both Joint Commission and ACOG.

RN Documentation

- Avoid minute-by-minute account unless certain times are correct.
- Attempt to closely approximate time interval between delivery of head and body.
- Review EFM strip & talk w/ providers in attendance to ensure that most accurate details of clinical circumstances are accurately recorded.
- Include fetal assessment data and/or attempts to obtain data about fetal status during the maneuvers.

RN Documentation cont...

- List the order of maneuvers used in clear and concise terms.
- Note that nursing assistance with these maneuvers were under the direction of the physician or midwife.
- If suprapubic pressure was used, make sure it is noted as such to avoid later allegations of fundal pressure.
- & state out loud the maneuvers you are assisting with, “I am applying suprapubic pressure.”
References

Websites: