Intermittent Fetal Monitoring In Labor

FITZMAURICE 5.4.15

Learning Objectives

- Describe methods of monitoring the fetus
- Describe the techniques of [intrapartum] fetal monitoring
- Prerequisites
  - Overview of Fetal Heart Rate Monitoring
  - Intrapartum Fetal Heart Rate Monitoring
- See also, for closely related topics:
  - None

Definitions

- Intermittent auscultation
  - Auscultate and record the fetal heart rate periodically (e.g. by stethoscope or Doppler) during labor
  - No data regarding optimal frequency and duration of auscultation
  - Typical protocol is to auscultate for 1-2 minutes and record average heart rate. Done every 15 minutes in active phase of first stage of labor, every 5 minutes in the second stage.
- Electronic Fetal Monitoring
  - Continuously plots the FHR on paper strip
  - Pressure transducer ("toco") continuously monitors uterine activity
  - Typically applied continuously throughout labor
  - Can be external or internal

Problems w/ Intermittent Auscultation

- Very labor intensive, especially in 2nd stage of labor
  - Requires 1:1 nursing ratios
  - One prospective study found that the protocol was successfully followed only 3% of the time
- Does NOT include information/interpretation of variability, accelerations, type/timing of decelerations
- Unlikely to detect acute/sudden changes in fetal status

EFM vs. Intermittent Auscultation

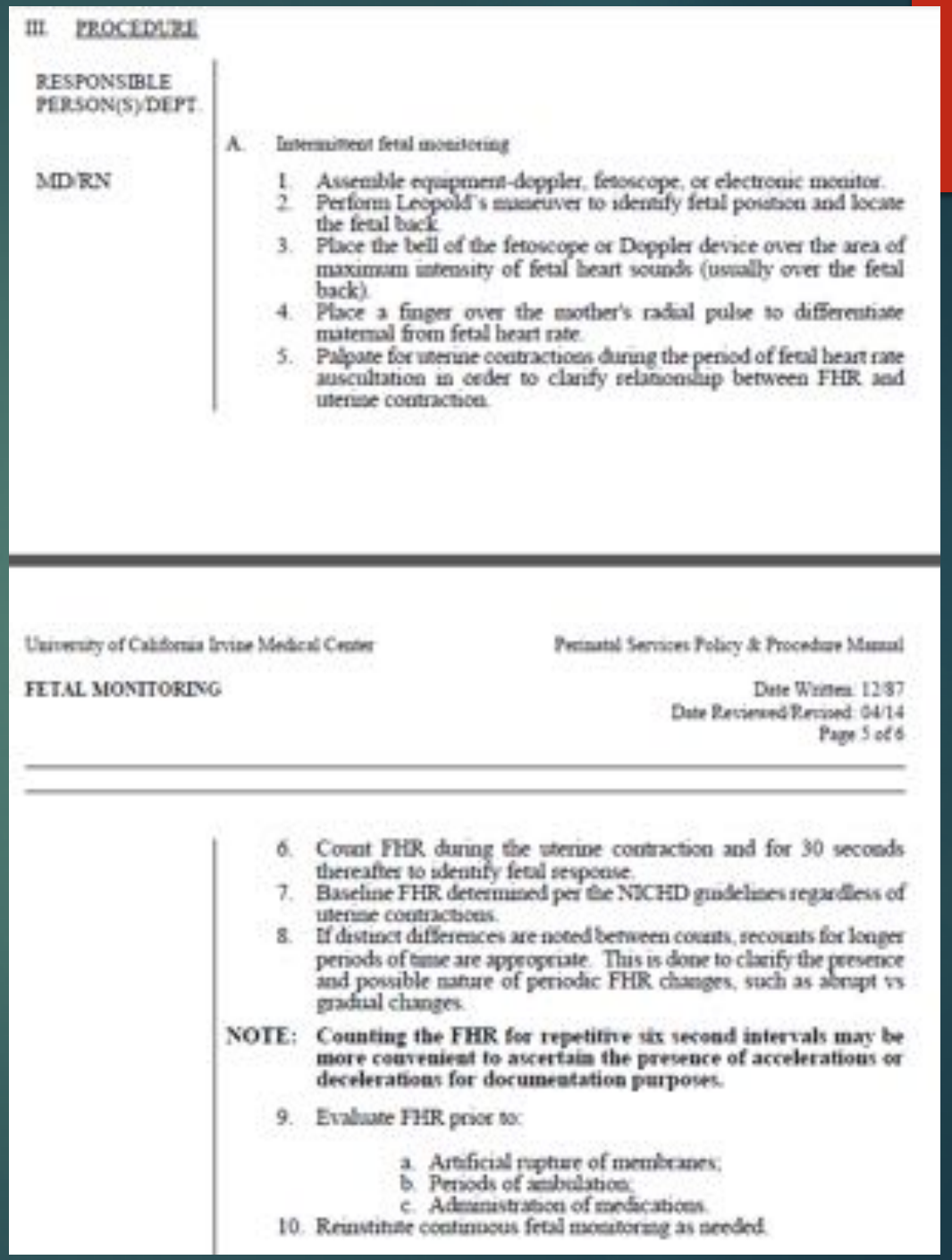
- Use of EFM is associated across multiple studies/meta-analyses with:
  - Increased risk of cesarean delivery, especially for abnormal FHR
  - Increased risk of operative vaginal delivery
  - No change in risk of perinatal mortality or cerebral palsy
  - Decreased risk of neonatal seizures, but no difference at > = 12 months of age
- These studies are NOT comparing continuous fetal monitoring with intermittent fetal monitoring!
  - Many providers/hospitals offer protocols such as 20 minutes on the monitor, one hour off, for low risk women with category 1 tracings, but this has not been well studied compared to the other two techniques.

ACOG says…

- High risk pregnancies (e.g. preeclampsia, suspected growth restriction, insulin-dependent diabetes) should be monitored continuously during labor
- In uncomplicated patients/low risk women either electronic fetal heart rate monitoring or intermittent auscultation is acceptable

UCI Health says…

- Intermittent auscultation protocol available, rarely used
- More commonly, intermittent EFM used in patients desiring mobility
  - Frequency based on interpretation/documentation requirements:
    - Latent labor: q60min
    - Active 1st stage: q30min
    - 2nd stage: q15min



III. PROCEDURE

RESPONSIBLE PERSON(S)/DEPT.	
MD/RN	A. Intermittent fetal monitoring 1. Assemble equipment-doppler, fetoscope, or electronic monitor. 2. Perform Leopold's maneuver to identify fetal position and locate the fetal back. 3. Place the bell of the fetoscope or Doppler device over the area of maximum intensity of fetal heart sounds (usually over the fetal back). 4. Place a finger over the mother's radial pulse to differentiate maternal from fetal heart rate. 5. Palpate for uterine contractions during the period of fetal heart rate auscultation in order to clarify relationship between FHR and uterine contraction.

6. Count FHR during the uterine contraction and for 30 seconds thereafter to identify fetal response.
7. Baseline FHR determined per the NICHD guidelines regardless of uterine contractions.
8. If distinct differences are noted between counts, recounts for longer periods of time are appropriate. This is done to clarify the presence and possible nature of periodic FHR changes, such as abrupt vs gradual changes.

NOTE: **Counting the FHR for repetitive six second intervals may be more convenient to ascertain the presence of accelerations or decelerations for documentation purposes.**

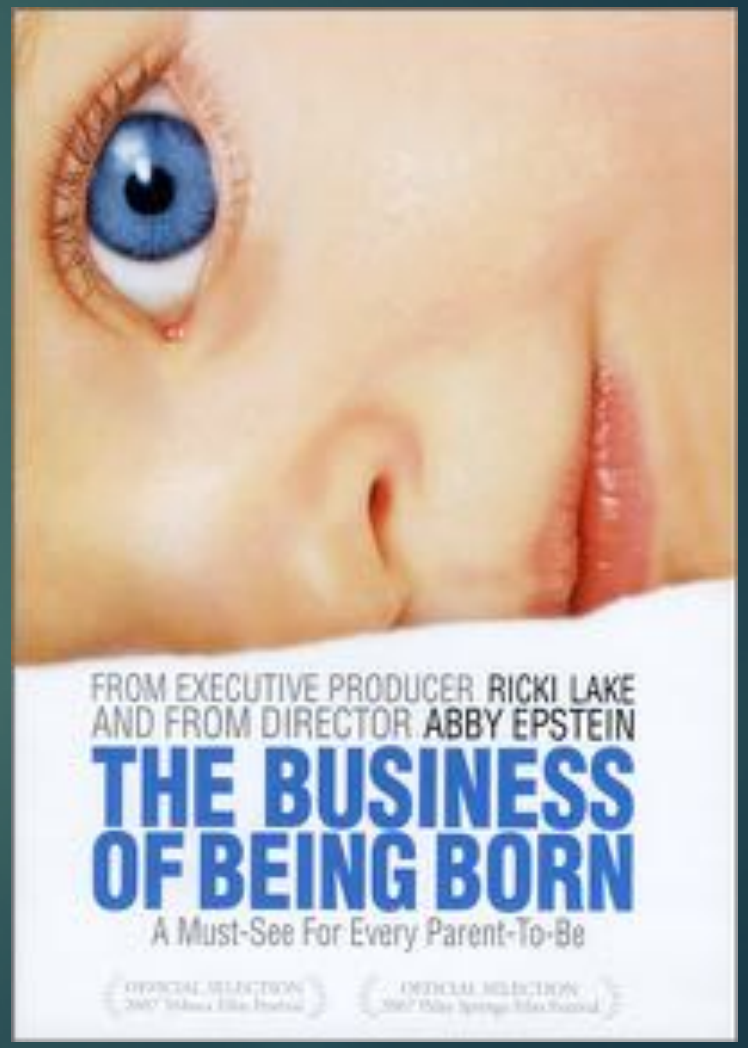
9. Evaluate FHR prior to:
   a. Artificial rupture of membranes;
   b. Periods of ambulation;
   c. Administration of medications.
10. Reinstitute continuous fetal monitoring as needed.

Contraindications to intermittent monitoring

- In normal/low risk labor, primary risk to fetus is relatively slowly evolving hypoxia → acidosis
- Any factors introducing risk of sudden/acute changes are contraindications to intermittent monitoring
  - Oxytocin infusion
  - Factors affecting maternal blood pressure
    - Preeclampsia
    - Epidural analgesia
  - Poor fetal reserve (high-risk of utero-placental insufficiency conditions, prematurity)

Why not just monitor continuously?

- Advantages of intermittent monitoring
  - Allows ambulation
  - Pain control is typically better when not lying in bed
  - May decrease patient anxiety
  - Allows for greater patient autonomy
- In fact, 80-90% of our patients could deliver w/o physician/nursing/hospital staff and monitoring, but we don't know who the 10-15% are that might have an emergency
  - Must consider both the risks of missing an acute event and risks of over-treatment



Information that's "out there"

"Natural" (meaning unmedicated) childbirth programs reinforce deep distrust of hospitals and obstetricians. A willingness to demonstrate flexibility on duration and frequency of fetal monitoring, when safe, can go a long way toward repairing the patient-physician relationship.

The Bradley METHOD of natural childbirth

www.bradleybirth.com

References

- ACOG Practice Bulletin Number 106, July 2009. "Intrapartum Fetal Heart Rate Monitoring: Nomenclature, Interpretation, and General Management Principles"
- Young, BK. "Intrapartum Fetal Heart Rate Assessment." uptodate.com (lit review current thru 3/2015)