Normal Birth: Definition

Objectives

- Define “normal birth”
- Consider evidence to support 3 common birth practices in the US
- Consider discrepancies in what US women may value and their birth attendants may value
- Make the case for
  - Shared decision-making with patients
  - Limiting interventions in low risk women

Disclosures

Nothing
ACOG Committee Opinion

- Latent labor: labor management & timing of admission
- Term PROM
- Continuous support during labor
- Routine amniopecty
- Intermittent auscultation
- Techniques for coping with labor pain
- Hydration and oral intake in labor
- Maternal position during labor
- Second stage of labor: pushing technique
- Immediate versus delayed pushing for nulliparas with epidural analgesia

ACOG Committee Opinion: their conclusions

- Many common obstetric practices are of limited or uncertain benefit
- Some women may seek to reduce medical interventions
- Satisfaction with one’s birth experience is related to
  - personal expectations
  - support from caregivers
  - quality of the patient-caregiver relationship
  - patient’s involvement in decision making
- Obstetric care providers should consider using low-interventional approaches for the intrapartum management of low-risk women in spontaneous labor.

“Many common obstetric practices are of limited or uncertain benefit”

Consider many practices that were routine in the 20th century

- Enema, pubic hair shaving
- Isolation from family
- Forceps delivery
- Episiotomy
- Deep sedation for vaginal delivery
- Separation of mother & newborn
- Immediate cord clamping?
Many common obstetric practices are of limited or uncertain benefit

- Some practices initially championed by a charismatic obstetrician
  - Ex: DeLee’s “Prophylactic” forceps & episiotomy

- Some arose from pressing but obsolete concerns
  - Ex: >50% maternal mortality was due to infection in early 20th century, leading to concept of “maintaining a sterile field,” which prompted enemas, pubic hair shaving, perhaps early cord clamping, and whisking babies off to NICU

- Some were championed by women themselves
  - Ex: “Twilight sleep” brought US by women who advocated for it as a feminist issue

- Over time they became the standard of care

Some women seek to limit medical interventions

Listening to Mothers Survey III:

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>2000-02</th>
<th>2005</th>
<th>2011-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall, rate the quality of maternity care in the U.S. as poor</td>
<td>n.a.</td>
<td>1%</td>
<td>2%</td>
</tr>
<tr>
<td>Overall, rate the quality of maternity care in the U.S. as fair</td>
<td>n.a.</td>
<td>19%</td>
<td>18%</td>
</tr>
<tr>
<td>Overall, rate the quality of maternity care in the U.S. as good</td>
<td>n.a.</td>
<td>48%</td>
<td>47%</td>
</tr>
<tr>
<td>Overall, rate the quality of maternity care in the U.S. as excellent</td>
<td>n.a.</td>
<td>35%</td>
<td>36%</td>
</tr>
<tr>
<td>Disagree strongly or somewhat that giving birth is a process that should not be interfered with unless medically necessary</td>
<td>38%</td>
<td>24%</td>
<td>16%</td>
</tr>
<tr>
<td>Neither agree nor disagree that giving birth is a process that should not be interfered with unless medically necessary</td>
<td>25%</td>
<td>25%</td>
<td>26%</td>
</tr>
<tr>
<td>Agree somewhat or strongly that giving birth is a process that should not be interfered with unless medically necessary</td>
<td>45%</td>
<td>50%</td>
<td>58%</td>
</tr>
</tbody>
</table>

Biggest predictors of maternal satisfaction & emotional wellbeing

- Personal expectations
- Amount of support from caregivers
- Quality of caregiver-patient relationship
- Involvement in decision-making

Surprising factors that DON’T generally predict a positive experience:

- Demographics: age, SES, ethnicity
- Childbirth preparation
- Pain, and method of pain relief utilized

Table 18. Mothers’ experience of pressure to have three interventions, by whether mothers had intervention

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Experience of pressure among mothers who did not have intervention*</th>
<th>Experience of pressure among mothers who had intervention</th>
<th>Experience of pressure among all mothers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labor induction</td>
<td>8%</td>
<td>25%</td>
<td>15%</td>
</tr>
<tr>
<td>Epidural anesthesia</td>
<td>19%</td>
<td>13%</td>
<td>15%</td>
</tr>
<tr>
<td>Cesarean section</td>
<td>8%</td>
<td>25%</td>
<td>13%</td>
</tr>
<tr>
<td>Primps cesareae</td>
<td>7%</td>
<td>25%</td>
<td>11%</td>
</tr>
<tr>
<td>Repeat cesareae</td>
<td>28%**</td>
<td>22%</td>
<td>23%</td>
</tr>
</tbody>
</table>

* p < .05 for all comparisons between those receiving an intervention and those who did not ** Mothers having a VBAC
ACOG Committee Opinion:
- Latent labor: labor management & timing of admission
- Term PROM
- Continuous support during labor
- Routine amniotomy
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Term PROM

Take home point: “For informed [low risk] women . . . the choice of expectant management for a period of time may be appropriately offered and supported”

Term PROM: Why it matters
- Term PROM affects about 10% of women
- Many women prefer to avoid medical induction, or would prefer to spend early labor at home
- Expectant management usually results in onset of labor in a short time
  - 77-79% of women are in labor in 12 hours
  - 95% of women are in labor in 24-28 hours

Term PROM: data from RCTs
- Cochrane review of expectant versus immediate induction for term PROM
  - Twelve trials (total of 6814 women), dominated by Hannah TERMPROM trial
  - Those in the immediate induction group had a:
    - Lower chance of chorioamnionitis (RR 0.74, 95% CI 0.56 to 0.97)
    - Lower chance of endometritis (RR 0.30, 95% CI 0.12 to 0.74)
    - Lower chance of NICU admission (RR 0.72, 95% CI 0.57 to 0.92)
  - There were no differences in:
    - neonatal infection
    - Cesarean or operative vaginal delivery
Term PROM: interpreting the data

- Hannah’s conclusion: “induction of labor … and expectant management are all reasonable options for women and their babies if membranes rupture before the start of labor at term, since they result in similar rates of neonatal infection and cesarean section”

- Cochrane authors’ conclusion: “Since the differences in outcomes between planned and expectant management may not be substantial, women need to be able to access the appropriate information to make an informed choice.”

If immediate induction lowers risks of maternal infection, and NICU admission, why offer expectant management?

- No difference in neonatal infections is reassuring
- Number needed to treat is relatively high because adverse outcomes are low in both groups
  - To prevent a single case of endometritis: 50 inductions
  - To prevent a single NICU admission: 20 inductions
- It may be possible to further lower risk of maternal infection. In Hannah trial:
  - A third of women had SVE on initial evaluation, and total number of vaginal exams was found to be the strongest predictor of chorioamnionitis
  - Women weren’t screened for GBS until admission to trial
  - Expectant management was up to 4 days!

Term PROM: practice points

- Society Guidelines for low risk women with term PROM
  - ACOG: “a course of expectant management may be acceptable for a patient who declines induction of labor as long as the clinical and fetal conditions are reassuring and she is adequately counseled”
  - ACNM: “should be allowed to select expectant management as a safe alternative to induction of labor”
  - NICE: “should be offered a choice of induction of labour . . . or expectant management.”
  - WHO: “induction of labour is recommended”

- UCSF practice: low risk, GBS-negative women with reassuring maternal & fetal well being are offered admission (with or without immediate induction) or expectant management at home for a set amount of time

Intermittent Auscultation

Take home point: “To facilitate the option of intermittent auscultation (IA), obstetrician–gynecologists and other obstetric care providers and facilities should consider adopting protocols and training staff to use a hand-held Doppler device for low-risk women who desire such monitoring during labor.”
Intermittent Auscultation: why it matters

- Continuous electronic fetal monitoring (EFM) quickly & widely adopted:
  - 1980: used in 45% of US births
  - 2002: used in 85% of US births
- Essentially rolled out as a national screening program for adverse fetal and neonatal outcomes before sufficient data collected to evaluate its efficacy

Intermittent Auscultation: the data

- Epidemiologic: CP rates have not changed in the past 4 decades
- Cochrane review of continuous EFM versus IA; 13 RCTs, 37,000+ women
  - No difference in risk of
    - CP RR 1.75 (CI 0.84 to 3.63)
    - Perinatal death RR 0.86 (CI 0.59 to 1.23)
    - Cord blood acidosis RR 0.92 (CI 0.27 to 3.11)
  - Lower risk of
    - Neonatal seizures RR 0.50 (CI 0.31 to 0.80)
  - Higher risk of
    - Cesarean delivery RR 1.63 (CI 1.29 to 2.07)
    - Op vaginal delivery RR 1.15 (CI 1.01 to 1.33)

Intermittent Auscultation: interpreting the data

- Weighing cesarean risk versus neonatal seizures
  - C-section: assuming a 15% risk of c-section in IA group, NNH = 11
  - Seizures: assuming a 0.3% risk of seizures in IA group, NNT = 667
- Grimes: “Electronic fetal monitoring as a public health screening program: the arithmetic of failure”
  - Because of low-prevalence target conditions and mediocre validity, the positive predictive value of electronic fetal monitoring for fetal death in labor or cerebral palsy is near zero. Stated alternatively, almost every positive test result is wrong.”
  - “Electronic fetal monitoring increases operative deliveries yet offers no lasting benefit to children. Electronic fetal monitoring harms women.”

Intermittent Auscultation: practice points

- Society guidelines
  - ACOG 2009: “either option [EFM or IA] is acceptable in a patient without complications.”
  - USPSTF 1996: “Routine electronic fetal monitoring for low-risk women in labor is not recommended.”
  - FIGO 2015: “Intermittent auscultation may be used for routine intrapartum monitoring in low-risk cases.”
  - NICE 2014: “Do not offer cardiotocography to women at low risk of complications in established labour.”
- Practical considerations
  - May negatively impact staffing
  - May positively impact women’s experience of care
Hydration and oral intake in labor

Take home point: “Although safe, intravenous hydration limits freedom of movement and may not be necessary. Oral hydration can be encouraged to meet hydration and caloric needs.”

Hydration and oral intake: why it matters

- Severely restricting oral intake adopted as part of routine labor management
  - 1946: Mendelson proposed fasting in labor as a strategy to reduce risk of aspiration
- Many women report NPO status to be moderately or very stressful in labor
- Adequate hydration may shorten labor & lower risk of c-section

Hydration and oral intake: the data

Impact of hydration on labor: meta-analysis examining IV fluid rates in labor

- 7 trials, over 1200 women
- Results: comparing 250ml versus “standard” 125ml/hr
  - lower risk of c-section RR 0.70 (CI 0.53-0.92)
  - shorter labors mean difference -64.38 min (CI -121.88 to -6.88)
  - Interestingly, no differences found in the two trials where women had unrestricted oral intake of clear fluids
- Consistent with data from exercise physiology research demonstrating improved athletic performance with sufficient hydration

Hydration and oral intake: the data

Less-Restrictive Food Intake During Labor in Low-Risk Singleton Pregnancies: A Systematic Review and Meta-analysis

- 10 RCTs, almost 4,000 women
- Randomized to either sips & chips, or less restrictive (clears; date honey; "Low residue diet," or unrestricted, depending on the study)
- No cases of aspiration in any participant
- Labor was slightly shorter in the experimental groups (mean difference -16 minutes, 95% CI -25 to -7)
- No one asked what women thought of their group!
Hydration & oral intake: epidemiologic data

- Netherlands: policies restricting food & drink remained uncommon (~20-30% of providers recommended some sort of restriction when surveyed in the 1980s), but aspiration rates remained as lower or lower than in the US & UK (2 probable cases out of almost 900,000 births)

- UK: as more flexible policies regarding food & drink in labor have emerged in the last decade, rates of anesthesia-related deaths have continued to fall (2012-2014, anesthesia related maternal mortality was 0.09 per 100,000, the lowest they have ever reported)

Hydration & oral intake: practice points

- Society Guidelines for low risk patients
  - ACOG/ASA: “moderate amounts of clear liquids may be allowed”
  - ACNM: “Promote self-determination of appropriate oral intake”
  - NICE: “may eat a light diet in established labor unless they have received opioids”
  - WHO: “Noninterference with desire for food or liquid intake without reason.”

Conclusions: “All that matters is a healthy baby”?

- Many common obstetric practices are of limited or uncertain benefit
- Some women may seek to reduce medical interventions
  - And if the interventions are of questionable value, personal preferences matter even more
- Satisfaction with one’s birth experience also is related . . .
  - the patient’s involvement in decision making
- Obstetric care providers should be familiar with and consider using low-interventional approaches, when appropriate, for the intrapartum management of low-risk women in spontaneous labor.
References


Dare MR et al. Planned early birth versus expectant management (waiting) for prelabour rupture of membranes at term (37 weeks or more). Cochrane Database of Systematic Reviews 2006, Issue 1. Art. No.: CD005302.


