Safe Prevention of the Primary Cesarean: Updated Labor Management Guidelines

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Learning Objectives

• At the conclusion of this presentation, the attendee will be able to:
  – Describe changes in the US cesarean delivery rate over the past few decades
  – Explain why efforts to decrease the cesarean rate focus on preventing the primary one
  – Discuss recent research findings regarding progress of labor
  – List the new definitions for labor arrest disorders

Preventing the 1st Cesarean Outline

• Cesarean delivery rates
• Complications of cesarean
• Why focus on primary cesarean?
• Research findings regarding progress of labor
• New definitions for arrest disorders
Overall Cesarean Delivery Rate in the United States

- 1970 5%
- Today 32%
- This proportion is up over 50% just since 1996
- Over 1 million cesarean deliveries are done in the USA every year
What is the Ideal Cesarean Rate?

- Less morbid than vaginal delivery in some cases, so higher than 0%
- Too high now?
  - Patients think so
  - Policy makers think so

What if Current Trend Continues?

- Decision analysis model
- In the year 2020:
  - Cesarean rate 56.2%
  - 6236 more previas
  - 4504 more accretas
  - 130 more maternal deaths

Compared to Vaginal Delivery

• Cesarean delivery associated with higher rates of maternal:
  – Mortality
  – Excessive blood loss
  – Puerperal infection
  – Prolonged recovery
  – Hospital readmission

Compared to Vaginal Delivery

• Cesarean delivery associated with higher rates of fetal/neonatal:
  – Impaired respiratory function
  – Laceration at delivery

Compared to Vaginal Delivery

• Cesarean delivery associated with higher healthcare system:
  – Costs

  *** Twice the cost of vaginal delivery
In Future Pregnancies

• Adhesions \( \rightarrow \) increased risk of visceral injury
• Placenta previa and placenta accreta more likely
• Transfusion and hysterectomy more likely

These risks increase with increasing number of prior cesareans
Why is the Cesarean Rate Increasing?

- **Risks possibly not modifiable**
  - Delayed childbearing
  - Increasing obesity rates
  - More multifetal gestations
  - Higher % of gravidas nulliparous

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Why is the Cesarean Rate Increasing?

- **Risks possibly not modifiable**
  - Fewer operative vaginal and breech vaginal deliveries
  - Increased use of epidural
  - Concern over litigation risk

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Why is the Cesarean Rate Increasing?

- **Risks possibly modifiable**
  - Increased use of induction
  - Decreased use of external cephalic version
  - Approach to labor management
  - Attitude toward cesarean delivery
Why is the Cesarean Rate Increasing?

- Risks possibly modifiable
  - Increased use of induction
  - Decreased use of external cephalic version
  - Approach to labor management*
  - Attitude toward cesarean delivery
  
*Focus for most of the rest of this talk

Why Focus on the First (Primary) Cesarean?

<table>
<thead>
<tr>
<th>Year</th>
<th>Total CD</th>
<th>Primary CD</th>
<th>VBAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1989</td>
<td>30%</td>
<td>5%</td>
<td>20%</td>
</tr>
<tr>
<td>1995</td>
<td>35%</td>
<td>20%</td>
<td>15%</td>
</tr>
<tr>
<td>2001</td>
<td>30%</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>2006</td>
<td>25%</td>
<td>5%</td>
<td>5%</td>
</tr>
<tr>
<td>2011</td>
<td>20%</td>
<td>5%</td>
<td>5%</td>
</tr>
</tbody>
</table>

Workshop was held February 7-8, 2012
- Reviewed available data
- Made recommendations

Preventing the First Cesarean Delivery
Summary of a National Institute of Child Health and Human Development, Society for Maternal-Fetal Medicine, and American College of Obstetricians and Gynecologists Workshop

(Obstet Gynecol 2012;120:1181-91)
### Indications for Primary Cesarean

<table>
<thead>
<tr>
<th>Stage</th>
<th>Indication</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prelabor</td>
<td>Malpresentation</td>
<td>10-15*</td>
</tr>
<tr>
<td></td>
<td>Multiple gestation</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Hypertensive disorders</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Macrosomia</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Maternal request</td>
<td>2-8</td>
</tr>
<tr>
<td>In labor</td>
<td>First-stage arrest</td>
<td>15-30*</td>
</tr>
<tr>
<td></td>
<td>Second-stage arrest</td>
<td>10-25</td>
</tr>
<tr>
<td></td>
<td>Failed induction</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Nonreassuring fetal heart rate</td>
<td>0</td>
</tr>
</tbody>
</table>

Some indications may occur both prelabar and in labor.

* Percentage of all cesarean deliveries that have this as a primary indication.
Progress of Labor
Contemporary Data

- Key points from these data:
  - Change in slope (start of active phase) is at 6 cm (not 3 or 4) for parous women, and active phase slope is less steep
  - For nulliparas, there is no appreciable change in slope
**Progress of Labor Contemporary Data**

- The 95th percentile for second stage duration from the Safe Labor Consortium:

<table>
<thead>
<tr>
<th></th>
<th>No epidural</th>
<th>Epidural</th>
</tr>
</thead>
<tbody>
<tr>
<td>P0</td>
<td>2.8</td>
<td>3.6</td>
</tr>
<tr>
<td>P1</td>
<td>1.3</td>
<td>2.0</td>
</tr>
<tr>
<td>P &gt;1</td>
<td>1.1</td>
<td>1.6</td>
</tr>
</tbody>
</table>

- **First stage arrest**
  - 6 cm or greater with ROM and no change for:
    - 4 h or more if MVU >200 or
    - 6 h or more if cxns inadequate

- **Second stage arrest**
  - No progress for
    - 3 h if nulliparous
    - 2 h if parous
  - Add an hour if epidural
Spontaneous Labor Algorithm

- Reaffirms definitions for first and second stage arrest
- Additional recommendations based on available evidence
• **NOT** indications for cesarean
  – Prolonged latent phase
  – Slow but progressive first stage
  – Standards for cervical change applied before 6 cm dilation
  – Prolonged second stage unless pushing 3 h if P0, or 2h o/w

• Encourages judicious use of
  – Operative vaginal delivery
  – Manual rotation
  – Amnioinfusion for repetitive variable decelerations

• Recommends IOL
  – Before 41 weeks only for medical or obstetric indications
  – At 41 weeks o/w
  – Using cervical ripening prn
  – Not be called failed until at least 12-18 hours of oxytocin after ROM
• Other issues
  – Offer ECV if breech—start assessing presentation at 36 weeks
  – Counsel women about the IOM weight gain guidelines

Key Points
• The active phase does not start until 6 cm.
• CD for active phase arrest only if ROM and 4 hours with adequate MVU, else 6 hours
• “Normal” second stage longer
Key Points

• Delay elective IOL until 41 weeks, particularly if cervix unfavorable
• Diagnose failed induction only after at least 12-18 h oxytocin after ROM
• Use amnioinfusion and ECV when indicated

Proposed Quality Measures
Vertex singletons 37-41 w

• Rates of
  – Non-indicated cesarean delivery
  – Non-indicated induction
  – Labor arrest or failed IOL no meeting criteria
  – Cesarean for nonreassuring FHR

Preventing the 1st Cesarean

Outline

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