Repair of Episiotomy: What is the evidence?

Khaled Ismail MSc, MD, PhD, FRCOG
## Classification of Perineal Tears

<table>
<thead>
<tr>
<th>Degree</th>
<th>Injury</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt; degree</td>
<td>vaginal mucosa or skin</td>
</tr>
<tr>
<td>2&lt;sup&gt;nd&lt;/sup&gt; degree</td>
<td>perineal muscle</td>
</tr>
</tbody>
</table>
| 3<sup>rd</sup> degree | 3a - <50% external sphincter  
3b - >50% external sphincter  
3c - internal sphincter involved |
| 4<sup>th</sup> degree | Any 3rd degree + Rectal mucosa                   |

Obstetric Anal Sphincter Injuries

OASIS

Perineal PEER Study group
Absorbable suture materials for primary repair of episiotomy and second degree tears (Review)

Kettle C, Dowswell T, Ismail KMK

THE COCHRANE COLLABORATION®
Citation: Kettle C, Dowswell T, Ismail KMK. Absorbable suture materials for primary repair of episiotomy and second degree tears. Cochrane Database of Systematic Reviews 2010, Issue 6. Art. No.: CD000006. DOI: 10.1002/14651858.CD000006.pub2.
Continuous and interrupted suturing techniques for repair of episiotomy or second-degree tears (Review)

Kettle C, Dowswell T, Ismail KMK

THE COCHRANE COLLABORATION®
Citation: Kettle C, Dowswell T, Ismail KMK. Continuous and interrupted suturing techniques for repair of episiotomy or second-degree tears. Cochrane Database of Systematic Reviews 2012, Issue 11. Art. No.: CD000947. DOI: 10.1002/14651858.CD000947.pub3.
Secondary suturing compared to non-suturing for broken down perineal wounds following childbirth (Protocol)

Dudley LM, Kettle C, Ismail KMK

THE COCHRANE COLLABORATION®
### Analysis 1.1. Comparison of Suturing vs. Non-suturing for Perineal Wound Infection/Breakdown, Outcome 1: Wound Healing within 4 weeks.

**Review:** Secondary suturing compared to non-suturing for broken down perineal wounds following childbirth.

**Comparison:** Suturing versus non-suturing for perineal wound infection/breakdown.

**Outcome:** Wound healing within 4 weeks.

<table>
<thead>
<tr>
<th>Study or subgroup</th>
<th>2ry suturing n/N</th>
<th>Non-suturing n/N</th>
<th>Risk Ratio M-H Fixed 95% CI</th>
<th>Weight</th>
<th>Risk Ratio M-H Fixed 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Christensen 1994</td>
<td>6/8</td>
<td>4/9</td>
<td></td>
<td>100.0%</td>
<td>1.69 [0.73, 3.88]</td>
</tr>
</tbody>
</table>

**Total (95% CI):**

8 | 9 | 100.0% | 1.69 [0.73, 3.88] |

- Total events: 6 (2ry suturing), 4 (Non-suturing)
- Heterogeneity: not applicable
- Test for overall effect: Z = 1.23 (P = 0.22)
- Test for subgroup differences: Not applicable
### Analysis 1.4. Comparison 1 Suturing versus non-suturing for perineal wound infection/breakdown, Outcome 4 Dyspareunia at 2 months.

#### Review:
Secondary suturing compared to non-suturing for broken down perineal wounds following childbirth

#### Comparison: 1 Suturing versus non-suturing for perineal wound infection/breakdown

#### Outcome: 4 Dyspareunia at 2 months

<table>
<thead>
<tr>
<th>Study or subgroup</th>
<th>2ry suturing</th>
<th>Non-suturing</th>
<th>Risk Ratio</th>
<th>Weight</th>
<th>Risk Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n/N</td>
<td>n/N</td>
<td>M-H.Fixed,95% CI</td>
<td></td>
<td>M-H.Fixed,95% CI</td>
</tr>
<tr>
<td>Monberg 1987</td>
<td>5/18</td>
<td>5/8</td>
<td></td>
<td>100.0 %</td>
<td>0.44 [ 0.18, 1.11 ]</td>
</tr>
<tr>
<td><strong>Total (95% CI)</strong></td>
<td><strong>18</strong></td>
<td><strong>8</strong></td>
<td></td>
<td><strong>100.0 %</strong></td>
<td><strong>0.44 [ 0.18, 1.11 ]</strong></td>
</tr>
</tbody>
</table>

Total events: 5 (2ry suturing), 5 (Non-suturing)

Heterogeneity: not applicable

Test for overall effect: Z = 1.73 (P = 0.083)

Test for subgroup differences: Not applicable

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![Diagram showing comparison of 2ry suturing and non-suturing for dyspareunia at 2 months.](image)
Perineal re-suturing versus expectant management following vaginal delivery complicated by dehisced wound

NIHR Research for Patient Benefit (RfPB) Programme: PB-PG-0909-20079

L Dudley, C Kettle, P Thomas, K Ismail
Is there a Gap between evidence and practice?
How good are we at implementing evidence to support the management of birth related perineal trauma? A UK wide survey of midwifery practice

Debra E Bick, Khaled M Ismail, Sue Macdonald, Peter Thomas, Susan Tohill and Christine Kettle

- Availability of unit protocol: 82%
- 2nd degree unsutured: 55%
- Continuous all layers: 6%
- In-house training: 67%
- Confident to repair: 78%
- PR for assessment: 57%
Implementation Science

- **RESEARCH** is: the science designed to find what is POSSIBLE

- **AUDIT** is the science designed to find out what is ACTUAL,

- **IMPLEMENTATION** science describes how to REDUCE the GAP between what is actual and what is possible.
Strong Evidence

Weak Evidence
Strong Evidence

Weak Evidence

Strong Context

Weak Context

Perineal Trauma
Context

- **Identifying Barriers / Drivers** – Qualitative work
- **Sense of Ownership** – Local Champions
- **Measures** that count – Patient Reported Outcomes
“Measure what can be measured, and make measurable what cannot be measured.”

Galileo Galilei
1564 - 1642
Perineal Assessment and Repair Longitudinal Study (PEARLS): a matched-pair cluster randomized trial

Khaled M K Ismail, Christine Kettle, Sue E Macdonald, Sue Tohill, Peter W Thomas and Debra Bick
Training equipment

Keele & Staffs Episiotomy Repair Trainer – developed with Limbs & Things UK Ltd

DVD – anatomy, basic surgical skills, identification of trauma, suturing techniques & postnatal care

Evidence Based Management of Perineal Trauma
## Implementation

<table>
<thead>
<tr>
<th>Entry details</th>
<th>Mean difference (95% CI)</th>
<th>Paired t-test p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent with continuous non-locking suturing technique for vaginal wall</td>
<td>-13.9% (-23.2%, -4.6%)</td>
<td>P=0.007</td>
</tr>
<tr>
<td>Percent with continuous non-locking suturing technique for muscle layer</td>
<td>-13.0% (-25.3%, -0.8%)</td>
<td>P=0.04</td>
</tr>
<tr>
<td>Percent with subcuticular suturing technique for perineal skin</td>
<td>-9.3% (-21.8%, 3.2%)</td>
<td>P=0.13</td>
</tr>
<tr>
<td>Percent with EBM technique for all layers&lt;sup&gt;a&lt;/sup&gt;</td>
<td>-16.3% (-32.1%, -0.4%)</td>
<td>P=0.045</td>
</tr>
<tr>
<td>Fast absorbable polyglactin suture</td>
<td>-17.4% (-36.9%, 2.2%)</td>
<td>P=0.08</td>
</tr>
<tr>
<td><strong>10-12 day questionnaire</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Receiving postnatal leaflet</td>
<td>-39.7% (-52.9%, -26.5%)</td>
<td>P&lt;0.001</td>
</tr>
</tbody>
</table>
## Effect on PROMs

<table>
<thead>
<tr>
<th></th>
<th>Mean difference (95% CI)</th>
<th>Paired t-test p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Postnatal outcomes</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Primary outcome</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percent with pain walking or sitting in past 24 hours</td>
<td>0.7% (-10.1%, 11.4%)</td>
<td>P=0.89</td>
</tr>
<tr>
<td><strong>Secondary outcomes</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean total walking and sitting pain scores over the previous 24 hrs</td>
<td>0.10 (-0.27, 0.46)</td>
<td>P=0.56</td>
</tr>
<tr>
<td>Percent needing sutures removed</td>
<td>2.2% (0%, 10.0%)</td>
<td>P=0.03</td>
</tr>
<tr>
<td>Percent taking pain relief for stitches in past 24 hrs</td>
<td>7.6% (-4.3%, 19.5%)</td>
<td>P=0.19</td>
</tr>
<tr>
<td>Percent still breastfeeding</td>
<td>3.1% (-10.4%, 16.6%)</td>
<td>P=0.62</td>
</tr>
<tr>
<td>Percent having perineal wound infection since birth</td>
<td>4.2% (0.4%, 8.0%)</td>
<td>P=0.03</td>
</tr>
<tr>
<td><strong>3 months</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percent having Edinburgh Postnatal Depression Scale 13+</td>
<td>-1.1% (-8.1%, 6.0%)</td>
<td>P=0.75</td>
</tr>
<tr>
<td>Percent who resumed intercourse after 9 weeks or more</td>
<td>-3.1% (-15.9%, 9.7%)</td>
<td>P=0.60</td>
</tr>
<tr>
<td>Percent with poor or quite poor perineal healing</td>
<td>0.1% (-4.9%, 5.2%)</td>
<td>P=0.95</td>
</tr>
</tbody>
</table>
PErineal Assessment and Repair e-Learning System: an internet based training package
MaternityPEARLS
The Results

Skills

- Traditional workshop
- Computer Laboratory
- Distant Learning

Significant improvement in skills