Uterine Exteriorisation versus Intraperitoneal Repair at Caesarean Section

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Geneva Foundation for Medical Education and Research
A Systematic Review of the Literature

- For inclusion into the Cochrane Library
  2003
In or Out
Background

- Initially proposed in 1882 by Sanger,
  - Technique modified in 1884 by Leopold
- Concept still valid today
- C/S accounts for up to 70% of all deliveries in some settings
- Many variations of the technique suggested
- Few RCTs done: 1978 – 1999
Objectives

- To assess the effects of exteriorisation of the uterus, as compared to the effects of uterine closure within the abdominal cavity
Criteria for considering studies for this review

- Studies – randomised controlled trials
- Participants – women undergoing C/S, elective or as emergency procedure
- Interventions – uterine exteriorisation vs in situ repair
- Outcome measures – primary / secondary
Primary Outcome Measures

- Serious operative complications
- Blood loss – (peri-operative drop in Hct or Hb)
- Post-operative sepsis
Secondary outcome measures

- Duration of operation
- Pain (intra-/post-operative)
- Nausea / vomiting
- Failure of the procedure
- Requirements for blood transfusion
- Length of hospital stay
Secondary Outcome measures (contd.)

- Wound complications
- Febrile morbidity (T >38 C >3 days)
- Endometritis
- Satisfaction with operation
- Deep vein thrombosis
Search Strategy for identification of studies

Relevant trials identified in:

- Pregnancy & Childbirth Group’s Specialised Register of Controlled Trials
- Cochrane Central Trials Register
- Pubmed
- Hand searching of reference lists of recent papers
Methods of review

- Data extracted from published trial reports
- All randomised controlled trials included
- Statistical analyses performed using Revman 4.1 software (Revman 2000)
- Categorical data – relative risk & 95% CI
- Continuous data – weighted mean difference & 95% CI
Description of Studies

- Hershey 1978 (N = 308)
- Magann 1993(A) (N = 100)
- Magann 1993(B) (N = 120)
- Magann 1995 (N = 284)
- Edi-Osagie 1998 (N = 194)
- Wahab 1999 (N = 288)
Methodological quality of studies

- Method of randomisation explained (6)
- Types of participants, interventions, outcomes clearly defined (6)
- Analysis by intention to treat (2)
- Allocation of concealment (unclear in 4)
- Protocol violations (3)
Results

- 1294 women randomised
- Data analysed by meta-analysis, where possible
- Febrile morbidity - statistically significant less in women undergoing exteriorisation
- Other outcomes – no statistically significant differences between the groups
- Uterine angle tear only documented in 1 study (1 pt. in each group)
## Meta analysis - febrile morbidity

### Comparison: 01 Uterine exteriorization vs intraperitoneal repair at caesarean section

**Outcome:** 04 Febrile morbidity for more than 3 days

<table>
<thead>
<tr>
<th>Study</th>
<th>Ut. Exteriorisation n/N</th>
<th>In situ repair n/N</th>
<th>RR (95%CI Fixed)</th>
<th>Weight %</th>
<th>RR (95%CI Fixed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hershey 1978</td>
<td>7 / 159</td>
<td>16 / 149</td>
<td></td>
<td>100.0</td>
<td>0.41[0.17,0.97]</td>
</tr>
<tr>
<td>Total(95%CI)</td>
<td>7 / 159</td>
<td>16 / 149</td>
<td></td>
<td>100.0</td>
<td>0.41[0.17,0.97]</td>
</tr>
</tbody>
</table>

Test for heterogeneity chi-square=0.0 df=0
Test for overall effect z=-2.03 p=0.04

![Graph showing the comparison results]
### Meta analysis – wound complications

**Comparison:** 01 Uterine exteriorization vs intraperitoneal repair at caesarean section

**Outcome:** 06 Wound complications (infection, hematoma, breakdown)

<table>
<thead>
<tr>
<th>Study</th>
<th>Ut. Exteriorisation n/N</th>
<th>In situ repair n/N</th>
<th>RR (95%CI Fixed)</th>
<th>Weight %</th>
<th>RR (95%CI Fixed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Edi-Osagie 1998</td>
<td>18 / 70</td>
<td>16 / 69</td>
<td></td>
<td>61.6</td>
<td>1.11 [0.62, 1.99]</td>
</tr>
<tr>
<td>Hershey 1978</td>
<td>2 / 159</td>
<td>6 / 149</td>
<td></td>
<td>23.7</td>
<td>0.31 [0.06, 1.52]</td>
</tr>
<tr>
<td>Wahab 1999</td>
<td>3 / 139</td>
<td>4 / 149</td>
<td></td>
<td>14.8</td>
<td>0.80 [0.18, 3.53]</td>
</tr>
<tr>
<td><strong>Total (95%CI)</strong></td>
<td><strong>23 / 368</strong></td>
<td><strong>26 / 367</strong></td>
<td></td>
<td><strong>100.0</strong></td>
<td><strong>0.88 [0.53, 1.46]</strong></td>
</tr>
</tbody>
</table>

Test for heterogeneity chi-square=2.26 df=2 p=0.32
Test for overall effect z=-0.51 p=0.6
Few RCTs done on this subject

Three studies reported by the same author (Magann 1993, 1993, 1995)

Febrile morbidity shows a significant difference in favour of exteriorisation of the uterus

Meta analyses of other outcomes show no significant differences between the groups

Rare complications must be borne in mind
Conclusion

From the data available, exteriorisation of the uterus at C/S seems to be a valid option, with no increased morbidity, as compared to in situ repair.

In cases where exposure is difficult, or there is protracted hemorrhage, exteriorisation of the uterus may be helpful.
Implications for Research

- Available data does not allow to draw conclusions about rare outcomes
- Few clinical trials conducted
- Relatively small sample sizes
Survey of methods of uterine closure at C/S among Reprod. Health PGC participants 2003 (15)

- Awareness of different methods of uterine closure 94%
- Practice of Ut. Ext 80%
- Practice of In Situ repair 13%
- Recommend Ut. Ext 13%
- Recommend In Situ repair 33%
- Recommend both procedures 40%
The End

Thank You!!