Background
Perineal trauma is a frequent complication to vaginal delivery and more than 80% of primiparous women sustain injury to the labia, vagina or perineum. Pain and discomfort related to perineal trauma have been reported to interfere with daily activities and life quality in early motherhood.

Aim of Study
To compare the continuous suture technique for perineal repair with the inverted interrupted suturing technique developed by Danish obstetricians and midwives.

Design and setting
A double-blind randomised clinical trial at a Danish university hospital with more than 4800 deliveries annually. Data were collected from August 2004 through April 2006.

Population
The study population was 400 healthy primiparous women. Inclusion criteria for the trial were 2nd degree perineal laceration or episiotomy and normal singleton vaginal delivery at term.

Outcomes
The primary outcome was perineal pain ten days after delivery. Secondary outcomes were wound healing, patient satisfaction, dyspareunia, need for resuturing, time elapsed during repair and amount of suture material used.

Methods
Structured interviews and systematic assessment of perineal healing were performed by research midwives at 24 to 48 hours, ten days and six months postpartum. Pain was evaluated using a Visual Analogue Scale and the McGill Pain Questionnaire. Wound healing was evaluated using the REEDA scale and by assessment of gaping wounds >0.5 cm. Analysis was performed with the intention-to-treat principle.

The two suture techniques
- The continuous suturing technique is a loose, continuous non-locking suture to close the vaginal mucosa and the muscular layer of the perineum. The perineal skin is approximated with the same continuous suture in the subcutaneous tissue a few millimetres under the perineal skin edges, finishing with a terminal knot in the vaginal mucosa in front of the hymenal remnants.

- The inverted, interrupted suturing technique involves a loose, continuous non-locking suture to close the vaginal mucosa. To approximate the wound edges two to four interrupted, inverted stitches are applied to the muscular and subcuticular layer of the perineum. Technically, the knot is hidden by inverting the stitch placing the knot in the depth of the trauma. No sutures in or through the perineal skin are allowed in either technique.

Results
The follow-up rate was 98% for all postpartum assessments. No difference was reported on perineal pain ten days after delivery. No difference was seen in wound healing, patient satisfaction, dyspareunia or need for resuturing. The continuous suture technique was significantly faster (15 min. vs. 17 min, p=0.03) and less suture material was used (1 vs. 2 packets, p<0.01).

Conclusion
Interrupted, inverted stitches for perineal repair leaving the skin unsutured appears to be equivalent to the continuous suture technique in relation to perineal pain, wound healing, patient satisfaction, dyspareunia and need for resuturing. The continuous technique, however, is faster and requires less suture material thus leaving it the more cost-effective of the two techniques evaluated.

The Danish Suture Trial
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