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Anderson ER, Gates S. Techniques and materials for closure of the abdominal wall in caesarean section. *Cochrane Database of Systematic Reviews* 2004, Issue 4. Art. No.: CD004663. DOI: 10.1002/14651858.CD004663.pub2.

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[Intervention Review]

Techniques and materials for closure of the abdominal wall in caesarean section

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Editorial group: Cochrane Pregnancy and Childbirth Group. **Publication status and date:** Edited (no change to conclusions), published in Issue 1, 2010.

Citation: Anderson ER, Gates S. Techniques and materials for closure of the abdominal wall in caesarean section. *Cochrane Database of Systematic Reviews* 2004, Issue 4. Art. No.: CD004663. DOI: 10.1002/14651858.CD004663.pub2.

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ABSTRACT

Background

There is a variety of techniques for closing the abdominal wall during caesarean section. Some methods may be better in terms of postoperative recovery and other important outcomes.

Objectives

To compare the effects of alternative techniques for closure of the rectus sheath and subcutaneous fat on maternal health and healthcare resource use.

Search methods

We searched the Cochrane Pregnancy and Childbirth Group trials register (September 2003), MEDLINE (1966 to September 2003), EMBASE (1980 to September 2003), CINAHL (1983 to September 2003) and CAB Health (1973 to September 2003), and the reference lists of included articles.

Selection criteria

Randomised trials making any of the following comparisons:

- (a) any suturing technique or material used for closure of the rectus sheath versus any other;
- (b) closure versus non-closure of subcutaneous fat;
- (c) any suturing technique or material used for closure of the subcutaneous fat versus any other;
- (d) any type of needle for repair of the abdominal wall in caesarean section versus any other;
- (e) any other comparison of methods of abdominal wall closure.

Data collection and analysis

Both reviewers evaluated trials for eligibility and methodological quality without consideration of their results.

Main results

Seven studies involving 2056 women were included. The risk of haematoma or seroma was reduced with fat closure compared with nonclosure (relative risk (RR) 0.52, 95% confidence interval (CI) 0.33 to 0.82), as was the risk of 'wound complication' (haematoma, seroma, wound infection or wound separation) (RR 0.68, 95% CI 0.52 to 0.88). No difference in the risk of wound infection alone or other shortterm outcomes was found. No long-term outcomes were reported. There was no difference in the risk of wound infection between blunt



needles and sharp needles in one small study. No studies were found examining suture techniques or materials for closure of the rectus sheath or subcutaneous fat.

Authors' conclusions

Implications for practice

Closure of the subcutaneous fat may reduce wound complications but it is unclear to what extent these differences affect the well-being and satisfaction of the women concerned.

Implications for research

Further trials are justified to investigate whether the apparent increased risk of haematoma or seroma with non-closure of the subcutaneous fat is real. These should use a broader range of short- and long-term outcomes, and ensure that they are adequately powered to detect clinically important differences. Further research comparing blunt and sharp needles is justified, as are trials evaluating suturing materials and suturing techniques for the rectus sheath.

PLAIN LANGUAGE SUMMARY

Techniques and materials for closure of the abdominal wall in caesarean section

There is not enough evidence to say whether particular techniques for closing the abdominal wall during caesarean section are better than others.

Different techniques and suture materials are used in caesarean section for closure of the rectus sheath (fibrous material enclosing the muscles of the abdominal wall). No research has examined whether any technique for closing the rectus sheath is preferable. The subcutaneous fat (between the sheath and the skin) may be left to heal without suturing, or can be closed using a variety of techniques. Closing the subcutaneous fat may reduce the risk of some wound complications (haematoma and seroma) but further research is needed to investigate how these outcomes affect the well-being and recovery of the women concerned.