Blunt-tipped needles reduced the incidence of glove puncture during abdominal closure


Objective To determine whether the use of blunt-tipped needles compared with cutting needles reduces the incidence of glove puncture and needlestick injury during abdominal closure in general surgery.

Design Randomised controlled trial.

Setting Surgical unit in England.

Patients 85 patients who were having elective colorectal surgery between October 1993 and October 1994. 3 surgeons did the surgery.

Intervention Patients were allocated to standard mass closure of the abdomen with the surgeon using a number-1 polypropylene suture with either blunt-tipped (n = 46) or cutting (n = 39) needles. Immediately before closure, the surgeon put on new gloves. After closure, gloves were examined both by infiltrating them with air and then immersing them in water and filling them with water. During the second half of the study, gloves were also tested using an electrical detection device that sounded an alarm if the glove was punctured.

Main outcome measure Glove-puncture rate.

Main results Fewer glove punctures occurred using blunt-tipped needles compared with cutting needles (6.5% vs 36%, P < 0.001). The absolute risk reduction was 29.5% means that 3 patients would need to have abdominal closure with the surgeon using a blunt-tipped needle (rather than a cutting needle) to prevent 1 additional glove puncture, 95% CI 2 to 8; the relative risk reduction was 82%, 94% to 94%.) None of the punctures led to needlestick injury. Most glove punctures were in the dominant hand and 2 with a blunt needle.

Conclusion The use of blunt-tipped needles compared with cutting needles by surgeons for abdominal closure decreased the incidence of glove puncture.

Source of funding: No external funding.

For article reprint: Professor J R Mosan, University of Hull Academic Surgical Unit, Castle Hill Hospital, Cottingham, North Humberside HU16 7QJ, England, UK. E/AX 01482-8272.

Numbers calculated from data in article.

Commentary

The study by Harley and colleagues confirms the high rate of glove punctures that occurs during general surgical procedures (1). Most glove punctures are not immediately recognised, therefore, they pose a risk for prolonged unnecessary exposure to blood and, thus, to blood-borne disease that can be transmitted from patient to surgeon (2). Relatively few interventions in randomised clinical trials have been shown to reduce the risk for glove punctures, with the exception of the use of blunt-tipped needles and double gloving (3). Two methodological issues, however, are relevant to the interpretation of this study. First, the authors describe a method of closure during which the needle is guided with the finger of the non-dominant hand. Therefore, the results of this study may not be relevant to surgeons who do not use this method of closure. Second, because the surgeons were (presumably) not blinded to the type of needle they were using, they may have changed their surgical technique. The change in technique rather than the type of needle may explain the decreased glove-puncture rate in the group of patients allocated to the blunt needle. Further, no needlestick injuries (which pose a much greater risk for the transmission of blood-borne disease) occurred in either group. The advantage of few glove punctures, which was not assessed in this study, might include a reduced risk for disease transmission from surgeon to patient and a potentially lower wound-infection rate, although no data are available on this.

The heterogeneity of the study groups and the baseline differences between the groups may not be critical, but we need further studies that are sufficiently powered to evaluate HRT for each diagnosis of incontinence. In addition, the value of local estrogen therapy alone is discussed before such a simple therapy is abandoned in the treatment of women with postmenopausal urinary incontinence.

Donna M. Fedorak, MD
McMaster University Faculty of Health Sciences
Hamilton, Ontario, Canada

References

Hormone replacement therapy did not reduce the number of episodes of urinary incontinence


Objective To determine whether hormone replacement therapy decreases the incidence of urinary incontinence.

Design Randomised, double-blind, placebo-controlled trial with 3-month follow-up.

Setting 2 university medical centres in the United States.

Patients 83 women who reported urinary incontinence (involuntary loss of urine at least once/wk) and who were ambulatory, living in the community, and older than 45 years of age (mean age 67 y, 91% white) were studied. Exclusion criteria were permanent catheterisation, impaired mental status, functional disability that limited the use of the toilet, neuropathic or uncontrolled metabolic conditions, chronic urinary tract infection, reversible causes of urinary incontinence, or major contraindications for the use of estrogen. Follow-up was 98%.

Intervention 39 women were assigned to ERT (conjugated equine estrogens, 0.625 mg/d for 30 d cycle, and medroxyprogesterone, 10 mg for 10 d cycle), and 44 women were assigned to placebo.

Main outcome measures The main outcome was the number of incontinence episodes per week. Numbers calculated from data in article.

Conclusion Hormone replacement therapy did not reduce the number of weekly episodes of urinary incontinence or amount of urine loss in postmenopausal women.

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For article reprint: J Fantl, 496 Newcomer Highway, Suite 200, Malton, NY 11787, USA. E/AX 516-341-4231.

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