Peritoneal closure and adhesions

Dear Sir,

We have read the debate on peritoneal closure by Cheong et al. with interest (Cheong et al., 2001). The authors state that the long term benefits and hazards of non-closure of the peritoneum are unknown, and expect adhesion related problems. Among the various outcome measures concerning long-term morbidity, adhesion formation/reformation is probably one of the most important ones. The presence of adhesions during surgery may result in longer operating time and increased intra-operative complications, including damage to the bowel, bladder, ureters, and bleeding (Cheong et al., 2001).

In 1997 and 1998 we changed the practice of peritoneal closure at Caesarean section. During this period closure and non-closure of the parietal peritoneum was performed. Out of all the women who had their first Caesarean section during those two years, we identified 61 women who had a repeat Caesarean at our institution until June 2000. A retrospective, non-randomized cohort study revealed that women without peritoneal closure at the first Caesarean delivery (n = 30) had a shorter skin-incision–delivery interval (6.7 versus 9.1 min, P < 0.01) and a shorter total operating time (39 versus 44 min, P = 0.05) at repeat Caesarean section, when compared with traditional wound closure at the first operation (Nather et al., 2001). In each group, one patient with significant intra-abdominal adhesions was reported. No damage to bowels or bladder was observed at the second operation. There was no increased blood loss at the repeat operation, indicated by the difference in pre- and postoperative haemoglobin (Nather et al., 2001).

Our data do not support the fears of Cheong et al. (2001) but rather support the findings of Tulandi et al. (1988). Due to a small sample size, this study (Tulandi et al., 1988) lacked the power to prove a benefit of peritoneal non-closure, but those data indicate that this practice is not detrimental for the operated women.

References

E.A.Joura, A.Nather, M.Hohlagschwandtner and P.Husslein
University of Vienna,
Department of Gynaecology and Obstetrics,
Währinger Gürtel 18–20, A-1090 Vienna, Austria

To whom correspondence should be addressed.
E-mail: elmar.joura@akh-wien.ac.at

Dear Sir,

Thank you for giving me the opportunity to express my view on this important subject. At repeat Caesarean, Joura et al. observed that the incision-delivery and operating times among women whose peritoneums were previously sutured were longer than in those whose peritoneums were not sutured. Although the reason for these differences was not stated, this could be due to adhesion-related difficulty in entering the abdominal cavity. Curiously, the correspondents found only one patient per group with ‘significant’ intra-abdominal adhesions.

In their review, Cheong et al. suggest that besides shorter operating time, there is insufficient evidence of benefit to non-closure of the peritoneum (Cheong et al., 2001). However, the authors did not encounter a negative effect of not closing the peritoneum. The best available data came from our previous non-randomized study (Tulandi et al., 1988). We found no difference in the complication rate, wound healing and the incidence of adhesions at a second-look laparoscopy among 163 women with peritoneal suturing and among 165 others with no peritoneal suturing.

Suturing the peritoneum appears to have a more anatomic result than leaving it to heal by secondary intention. However, the presence of ischaemic tissue by sutures causes a predisposition to adhesion formation (Buckman et al., 1976). In animal models (Ellis, 1962; Conolly and Stephens, 1968), laparotomy closure without peritoneal suturing healed with a lower incidence of adhesions to the wound compared with animals with peritoneal suturing. The most serious complication of intra-abdominal
adhesion is bowel obstruction. Indeed, the most common cause of small-bowel obstruction is post-surgical adhesions and it is commonly found after an abdominal hysterectomy (Al-Took et al., 1999). In the study by Al-Took et al., adhesions involving the site of closure of the pelvic peritoneum were responsible for bowel obstruction in 85% of cases, with adhesions to the anterior abdominal wall occurring in another 15% (Al-Took et al., 1999).

Cheong et al. proposed prospective studies to verify if closure of the peritoneum is needed (Cheong et al., 2001). The difficulties in conducting such a study are the needs for randomization, second-look laparoscopy and long-term follow-up. In our bowel obstruction study, the median interval of surgery to small-bowel obstruction was 5.3 years. In any event, the evidence to date suggests that peritoneal suturing is not only unnecessary, but could also be associated with a greater risk of small-bowel obstruction.

References

Togas Tulandi
Department of Obstetrics and Gynecology,
McGill University, 687 Pine Ave. West,
Montreal, Quebec, Canada, H3A 1A1

E-mail: togas.tulandi@muhc.mcgill.ca