Double-layer continuous parallel uterine closure for low transverse cesarean incisions

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Received 28 February 2006; received in revised form 2 May 2006; accepted 2 May 2006

The techniques of reapproximation of the low transverse uterine incision during cesarean section vary [1,2]. In this article, an alternative uterine closure technique is proposed with the possible benefits of better control of hemorrhage and approximation of the incision line.

From October 2004 to September 2005, the double-layer continuous parallel uterine closure technique was used in 14 patients undergoing low transverse cesarean sections. Conventional methods for incision creation and delivery were employed. The uterine closure technique is demonstrated in Figs. 1–4.

The most common indication for cesarean delivery was cephalopelvic disproportion (CPD) in 8 (57%) patients, followed by fetal distress and repeated cesarean in 3 (21.4%) patients each. Estimated blood loss and length of surgery were within usual range. Extra hemostatic figure-of-eight sutures were needed in only 1 patient in whom extended downward laceration to the area close to the cervix

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KEYWORDS
Cesarean; Double-layer closure; Low transverse uterine incision

Figure 1 The beginning of the first layer closure. A no. 0 polyglactin 910 (Vicryl) suture was used for uterine incision repair. The initial (all layers) suture was positioned lateral to the angle of the transverse uterine incision. The next suture was placed vertically through the entire myometrial layer of the lower uterine wall flap excluding endometrium. Then, the first subendometrial suture was put parallel to the endometrial lining without entering it, starting on the upper uterine wall flap. The aim of this suture was to bring the suture line down to subendometrial level preparing for subendometrial suture placement.
was encountered. Of note, the proposed uterine incision closure technique was used in 2 patients with underlying idiopathic thrombocytopenic purpura who had preoperative platelet count of 12,000 and 160,000 per mm$^3$, respectively. The incisions were satisfactorily reapproximated with no need for extra hemostatic suture. There was no incidence of postoperative complications such as endometritis and delayed hemorrhage in any of these patients.

The proposed technique could be considered a modification of the conventional double-layer closure with an attempt to minimize disruption of myometrial blood supply, thus promote better healing, and restores myometrial structural integrity and incision strength. In addition, incidence of postpartum endometritis and endometriosis could theoretically be diminished as the major part of the endometrium was not penetrated by the needle. However, these benefits could not be proved in this small preliminary study.

Of importance, hemostasis achieved from this technique appeared outstanding. Extra hemostasis suture placement was needed in only 1 patient (7%). This impressive effect was also exhibited in the patient with bleeding tendency. This could be compared favorably to the reported rate of extra hemostatic suture placement of 39% and 42%, for single and double-layer closure, respectively [3]. The number of extra hemostatic sutures needed per patient was 1.65 for single layer and 1.94 for double-layer closure in that study.

The double-layer uterine submucosa—subserosa closure technique appears to be safe and feasible. A larger, comparative study on this technique versus the conventional technique with longer follow-up on outcome of subsequent pregnancy may be of value.

References

