



Is double-layer closure with unlocked first-layer associated with better uterine scar healing than locked single-layer closure?

Yes, if uterine scar healing is defined by increased total and residual myometrial thickness.

Roberge S, Demers S, Girard M, et al. Impact of uterine closure on residual myometrial thickness after cesarean: a randomized controlled trial [published online ahead of print November 11, 2015]. Am J Obstet Gynecol. doi:10.1016/j.ajog.2015.10.916.

► EXPERT COMMENTARY

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Cesarean delivery (CD), the most common surgery performed worldwide, is associated with increased morbidity and mortality compared with vaginal delivery. More than 230 randomized controlled trials (RCTs) have been published on varying technical aspects of CD, yet uncertainty remains regarding the optimal approach(es) to minimize perinatal morbidity.

Previous trials of one such technique, uterine closure, have not demonstrated short-term outcome differences among those randomized to single- versus double-layer closure. Results of long-term outcomes such as uterine rupture remain unclear. Emerging evidence also has associated cesarean scar defects with gynecologic problems like dysmenorrhea, pelvic pain, and postmenstrual spotting, further highlighting the importance of identifying surgical techniques that optimize uterine scar healing after CD.

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Details of the study

In their recent RCT, Roberge and colleagues randomly assigned 81 women with singleton pregnancies undergoing elective primary CD (at ≥ 38 0/7 weeks) and compared the following uterine closure types on residual myometrial thickness during postpartum transvaginal ultrasound at 6 months:

- single-layer locked closure (control)
- double-layer locked closure
- double-layer unlocked closure.

In addition to addressing the single-versus double-layer debate, this study highlights another important aspect of closure technique: locked versus unlocked first-layer

WHAT THIS EVIDENCE MEANS FOR PRACTICE

While residual and total myometrial thickness presents a feasible, albeit indirect, assessment of uterine scar healing, it remains unclear if double-layer unlocked first-layer closure decreases long-term adverse outcomes, such as subsequent uterine rupture, cesarean scar defects, or gynecologic morbidity compared with other techniques. Nevertheless, this study highlights the importance of future research specifying both single- or double-layer and locked or unlocked uterine closure techniques.

» **JOSHUA D. DAHLKE, MD**

FAST TRACK

To better understand optimal cesarean delivery technique, researchers should specify single versus double and locked versus unlocked uterine closure

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suture closure. The residual myometrial thickness, a surrogate measure of uterine scar healing, was significantly greater in those women randomly assigned to double-layer (locked or unlocked) closure compared with controls. Additionally, total myometrial thickness significantly increased in the double-layer unlocked closure group. There were no differences in the short-term outcomes of operative time or estimated blood loss among any of the groups.

Based on these findings, the authors advocate for double-layer unlocked uterine closure during CD to maximize uterine scar healing.

Bottom line

Double-layer uterine closure with unlocked first-layer at CD appears to maximize postpartum uterine scar thickness compared with other techniques; it remains unclear, however, if this improves short- or long-term outcomes. ❌

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