



Does the rate of postcesarean maternal infection vary by uterine closure technique?

NO ▶ According to findings from the CAESAR Study, a randomized trial of more than 3,000 women, the rate of maternal infectious morbidity was the same regardless of whether uterine closure was single-layer or double-layer.

The rates of maternal infection also were similar for closure versus nonclosure of the peritoneum and for liberal versus restricted use of a subrectus sheath drain.

CAESAR Study Collaborative Group. Cesarean section surgical techniques: a randomized factorial trial. BJOG. 2010;117(11):1366-1376.

▶ EXPERT COMMENTARY

Vincenzo Berghella, MD, Professor of Obstetrics and Gynecology; Director of the Division of Maternal-Fetal Medicine; and Director of the Maternal-Fetal Medicine Fellowship Program, Thomas Jefferson University, Jefferson Medical College, Philadelphia.

More than one million cesarean deliveries are performed each year in the United States. That's more than two cesarean deliveries every minute. Clearly, performing this most common of major surgeries safely and effectively is of the utmost importance.

The much-anticipated CAESAR study is a large randomized, controlled trial that assesses three technical aspects of cesarean delivery:

- **single-layer versus double-layer uterine closure.** The investigators define the former as approximation of both edges of the uterine incision using a single layer of sutures. Double-layer closure involves one set of sutures at the endometrial layer and an additional set of sutures at the serosal layer
- **closure versus nonclosure of the pelvic peritoneum**

- **liberal versus restricted use of a subrectus sheath drain.**

The primary outcome of this study is maternal infectious morbidity. Women who participated in the trial were all undergoing their first cesarean delivery, which was performed through the lower uterine segment. In addition, none of the women had a clear indication for any of the techniques explored in this study.

As in any trial, the findings of the CAESAR study should be interpreted in view of the totality of the literature. Other aspects of cesarean delivery have been summarized previously.¹

WHAT THIS EVIDENCE MEANS FOR PRACTICE

It is too soon for us to know the long-term effects of these cesarean delivery techniques, but neither single-layer nor double-layer uterine closure appears to affect the rate of maternal postoperative infection.

Nonclosure of the peritoneum is preferred to closure, based on Level I literature on this issue.

Liberal use of a subrectus sheath drain is of little benefit. Its use should be limited.

»» VINCENZO BERGHELLA, MD

FAST TRACK

The rate of maternal infection did not vary whether uterine closure involved a single or double layer

CONTINUED ON PAGE 55



CONTINUED FROM PAGE 56

In the short term, the type of uterine closure doesn't seem to matter

In the CAESAR trial, single-layer closure of the uterine incision was not associated with any effect on maternal infectious morbidity, compared with double-layer closure. In earlier randomized, controlled trials, single-layer closure was associated with shorter operative time, less blood loss, and less pain.²

An important issue is the long-term effect of single-layer uterine closure, especially the incidence of uterine rupture in subsequent trials of labor, compared with double-layer closure. The CAESAR study did not report this outcome, but we hope that it will in the future, as it is one of the largest trials to explore uterine closure.

Closure of the peritoneum

In earlier randomized, controlled trials, non-closure of the pelvic peritoneum has been associated with shorter operative time and hospitalization, a lower rate of fever, and less need for analgesia.³

In the CAESAR trial, nonclosure of the peritoneum was not associated with any effect on maternal infectious morbidity, compared with closure.

Use of a drain is best limited

In the CAESAR trial, restricted use of a sub-rectus sheath drain was not associated with any effect on maternal infectious morbidity, compared with liberal use. In earlier trials, drainage was not associated with any benefit.⁴ Therefore, it seems preferable to limit use of these drains during cesarean delivery. 📌

References

1. Berghella V, Baxter JK, Chauhan SP. Evidence-based surgery for cesarean delivery. *Am J Obstet Gynecol.* 2005;193(5):1607-1617.
2. Dodd JM, Anderson ER, Gates S. Surgical techniques for uterine incision and uterine closure at the time of caesarean section. *Cochrane Database Syst Rev.* 2008;(3):CD004732.
3. Bamigboye AA, Hofmeyr JG. Closure versus non-closure of the peritoneum at caesarean section. *Cochrane Database Syst Rev.* 1998;(1):CD000163. doi: 10.1002/14651858.CD000163.
4. Gates S, Anderson ER. Wound drainage for caesarean section. *Cochrane Database Syst Rev.* 2005;(1):CD004549. doi: 10.1002/14651858.CD004549.pub2.

INDEX OF ADVERTISERS

AIMIS

2011 MIS Gynecology CME Program P 51

Amgen, Inc

Prolia PP 14-16

Bayer Healthcare

Beyaz C2, PP 1-3

Citracal P 25

Mirena PP 43-45

Conceptus Inc

Essure P 9

Cooper Surgical

Filshie Clip P 29

HerOption C4

RUMI Uterine Manipulator P 7

FUUS 2011 P 32 A-D

Greenway Medical

PrimeSuite P 5

Hologic Inc.

Cervista P 47

Medtronic, Inc.

Interstim P 39

Merz Pharmaceuticals

Mederma P 21

Myriad Genetics

BracAnalysis P 33