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Editor-in-Chief

Repeat cesarean again and again and again

As 4th cesarean sections become more common, we are challenged to prevent adverse outcomes.

The gradual rise in the cesarean section rate over the past 4 decades and the recent trend favoring repeat cesarean section rather than vaginal birth after cesarean is resulting in more women undergoing multiple cesarean sections.

What are the risks?

Recent case reports indicate that abnormal placentation (placenta previa and placenta accreta) and surgical time are increasing for women undergoing their 4th cesarean section, but there has been little increase in major operative complications or adverse perinatal outcomes.^{1,2}

Interestingly, most of the literature on this subject is from outside the United States, suggesting that clinicians in other countries have more and longer experience with 4th cesarean sections. In the United States, there is a widely held sentiment among clinicians that the first repeat cesarean section seldom presents a surgical problem, but that by the time a woman undergoes a 4th cesarean section, operative complications are common, including difficult dissections, major bleeding, and bladder or bowel injury.

Steps to reduce risk

Although the best clinical approach to a 4th cesarean has not been determined in clinical trials, many clinicians take specific steps to reduce the operative risk.

As with all cesarean sections, a 4th procedure should be preceded by a consent process that outlines the possibility of hysterectomy and injury to bowel and urinary systems, an

anesthesia consult, baseline hemoglobin, use of nonparticulate antacid before the surgery, and antibiotic prophylaxis.³

Special precautions

A 4th cesarean section probably warrants additional precautions in many cases:

- **Ensure an active blood sample** is available in the blood bank (blood type and antibody screen) in case transfusion is necessary.
- **Insert a 3-way Foley** in case the bladder or adjacent structures are injured and bladder integrity needs to be tested.
- **Consider a non-Pfannenstiel incision** such as a Maylard or vertical incision to allow for more extensive dissection of adhesions and restoration of intra-abdominal anatomy to safely complete the cesarean.
- **Ensure immediate availability of medications to reduce intraoperative bleeding** such as oxytocin, methergine, injectable prostaglandins such as carboprost, and misoprostol.
- **Consider having available hemostatic agents** such as FloSeal (*Baxter Healthcare, Deerfield, Ill*), Gelfoam (*Pharmacia & Upjohn, Kalamazoo, Mich*), or thrombin.
- **Use techniques to reduce perioperative deep venous thrombosis**, such as compression stockings or lower extremity intermittent compression devices.
- **Consider a tubal ligation** at the time of the 4th cesarean section.

If postpartum hemorrhage occurs, the clinical team may need to be prepared to perform uterine packing or tamponade (*SOS Bakri Tamponade Balloon, Cook*

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Ob/Gyn Inc, Spencer, Ind), internal iliac artery ligation, selective uterine artery embolization, a B-Lynch suture, aortic compression, and/or hysterectomy.

Placenta location a concern

The location of the placenta may strongly influence the surgical approach. Placenta previa occurs more commonly in women with multiple previous cesarean sections.³ If placenta previa is present, the risk of placenta accreta, a life-threatening condition, increases with each previous cesarean birth.⁴ This markedly increases risk for major bleeding and hysterectomy. Consequently, an effort should be made to determine the location of the placenta and the possibility of a placenta accreta prior to the 4th cesarean section. If a placenta previa is present, preoperative placement of bilateral uterine artery balloon catheters may help reduce blood loss at the time of surgery. In addition, preoperative preparation for a potential complicated hysterectomy is a must.

What's your experience?

The cesarean "4-Peat" is becoming more common, and it challenges the entire medical care team. We are interested in the experiences and innovative surgical techniques that our readers use when performing a 4th cesarean section. Please write to us with your suggestions for preventing adverse outcomes in these complicated cases.

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