



## Develop and use a checklist for 3rd- and 4th-degree perineal lacerations

📌 Does your labor unit have such a list? Here, key components to get you started.

### **CASE** Repair of a 4th-degree perineal tear

A hospital midwife has just helped a mother deliver a 10 lb baby after 4 hours of vigorous pushing. No episiotomy incision was made. The midwife

diagnosed a 4th-degree perineal tear. You are kindly asked by the nurse-in-charge to perform the repair to help the midwife and patient.

What steps should be on your 4th-degree repair surgical checklist?

### Instant Poll



>> Does your labor and delivery unit have a standardized checklist for the repair of 3rd- and 4th-degree lacerations? Do you think a checklist would improve patient care, or hinder individualized decision making?

>> Do you recommend prophylactic antibiotics for all women with a 3rd- or 4th-degree perineal laceration?

>> Our readers want to know! What are your clinical pearls for the repair of a 3rd- or 4th-degree laceration?

Tell us—at [rbarbieri@frontlinemedcom.com](mailto:rbarbieri@frontlinemedcom.com). Please include your name and city and state.



**These repairs are few and far between. A checklist may be prudent.**

In birth units with an operative vaginal delivery and episiotomy rate of less than 10%, 3rd- and 4th-degree perineal lacerations occur infrequently. In some units, 4th-degree lacerations occur in less than 0.5% of vaginal births, and 3rd-degree lacerations occur in less than 3% of vaginal births.<sup>1,2</sup> Given the infrequent occurrence of these lacerations, a locally developed surgical checklist may help to guide you and your obstetrician colleagues to the most effective repair of these lacerations.

Surgical checklists have been demonstrated to reduce variances and improve patient outcomes.<sup>1,2</sup> Potential components of such a checklist are discussed in this editorial.

**Clinical pearls? Tell us!** We are very interested in learning about your recommended additions or deletions to this draft checklist. Send your responses in a Letter to the Editor ([rbarbieri@frontlinemedcom.com](mailto:rbarbieri@frontlinemedcom.com)).

### Here is what I endorse

#### 1. Identify the clinician(s) best suited to do the repair

To achieve optimal outcomes, it might be best if the most experienced obstetrician available in the hospital assists with or performs the repair.

#### 2. Consider moving the patient from a labor and delivery room to an operating room

When surgical procedures are performed in a labor and delivery room, anesthesia support, lighting, appropriate equipment, surgical assistance, and exposure are often suboptimal. For many birth units, moving the patient from a labor and delivery room to an operating room may provide a better site for repair of the 4th-degree laceration.

#### 3. Consider administering pre-repair prophylactic antibiotics

In one randomized trial, administration of a single dose of cefotetan or cefoxitin (1 g), compared with placebo, at the time of the repair resulted in significantly fewer post-repair perineal wound complications.<sup>3</sup> Results of an observational study also revealed that exposure to antibiotics prior to repair, but not after the repair, was associated with a reduced wound complication rate.<sup>4</sup>

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## 4. Obtain excellent exposure

Consider requiring a surgical technician and/or surgical assistant for all 4th-degree repairs. Place a vaginal pack to improve visualization of the perineal structures and prevent uterine blood from covering key anatomic landmarks. A Gelpie or Weitlander self-retaining retractor is very helpful in obtaining exposure, especially if a surgical assistant is not available.

## 5. Define the extent of the perineal laceration

Obstetricians are aware that occult injury to the rectal mucosa may occur.<sup>5</sup> A digital rectal exam, with directed examination of the anterior rectal wall, is beneficial in identifying the extent of the rectal mucosal laceration.

Assessing injury to the external anal sphincter is helped by placing the index finger in the rectum and the thumb on the position where the external anal sphincter should be and using the two fingers to assess whether it is intact. In addition, visualization of a ruptured external anal sphincter and the separated muscle clearly identifies this lesion. Allis clamps may be used to find the ends of the ruptured anal sphincter since they retract into their capsule. A standardized sequence of inspection and palpation may improve the detection of 3rd- and 4th-degree tears.<sup>6</sup>

## 6. Identify the apex of the laceration

Start the repair of the rectal mucosa at least 1 cm above the apex of the laceration. My most common error in repairing a perineal laceration is not definitively identifying the apex of the laceration before beginning the repair. Applying judicious traction to the true apex of the laceration helps to clarify the anatomy and speed the repair.

## 7. Repair the rectal mucosa with a 4-0 suture on a tapered needle

Use a 4-0 suture with a tapered needle to repair the rectal mucosa. For the repair of a 3rd- or 4th-degree tear, most obstetricians use either a braided polyglactin suture (Vicryl) or a monofilament polydioxanone suture (PDS).

## 8. Repair the internal anal sphincter with a 3-0 suture on a tapered needle

The internal rectal sphincter is a thin sheath that is dull white or white-gray. It is positioned just above the rectal serosa. The internal rectal sphincter is often retracted laterally and superiorly following a 4th-degree tear. It often can be identified at the apex of the tear. Colorectal physiologists and surgeons believe that an intact and functioning internal anal sphincter plays an important role in the maintenance of continence to stool and flatus.<sup>7,8</sup>

## 9. Repair the external anal sphincter with a 2-0 suture

Use a 2-0 suture to repair the external anal sphincter. Most obstetricians are familiar with the end-to-end repair. Many colorectal surgeons prefer an overlapping technique. Results of randomized trials indicate that an end-to-end repair is as effective as an overlapping technique.<sup>9</sup>

Often, obstetricians try to ensure that the knots are buried within the body of the external anal sphincter muscle, rather than on the surface of the fascial sheath of the sphincter. Many obstetricians recommend placing 4 interrupted sutures for the repair starting at the 3 o'clock position and moving to the 6 o'clock and then 12 o'clock positions and finishing with the 9 o'clock position.

Repair of the 1st- and 2nd-degree

vaginal laceration and perineal body is then completed in the usual fashion.

## 10. Identify the patient as a "high risk" postpartum patient who warrants extra attention

Women who have had a 3rd- or 4th-degree perineal tear should receive a high level of attention to perineal care, a low-residue diet, a stool softener and/or laxative, and physical examination of the progress of wound healing. In one randomized trial, women with a 3rd-degree tear were randomly assigned to treatment with codeine ("bowel confinement regimen") or lactulose. The women who received lactulose had earlier and less painful bowel movements postpartum.<sup>10</sup>

The presence of fever, excessive vaginal discharge, or excessive perineal pain should be carefully monitored using a standardized process. After a difficult vaginal delivery, perineal edema may be severe and elevation of the foot of the bed may be of benefit to accelerate the resolution of the edema.

## 11. Schedule an early return clinical visit to examine the healing process

Breakdown of 3rd- and 4th-degree repairs is not common but typically occurs about 1 week after delivery. Most low-risk women are not scheduled for a 1-week postpartum check. A woman with a 3rd- or 4th-degree laceration, however, should be examined about 1 week after delivery. If breakdown occurs, repair it immediately.<sup>11</sup>


## 12. Assess long-term clinical outcomes

Third- and 4th-degree lacerations are a common cause of anal incontinence.<sup>12-14</sup> In an observational study

with at least 5 years of follow-up, 19% of women with a 3rd- or 4th-degree laceration reported symptoms of anal incontinence. By contrast, 10% of women who had a vaginal delivery without such a severe laceration and 9% of women who had a cesarean delivery reported symptoms of incontinence. A plan to monitor long-term clinical outcomes is of value in longitudinal tracking of the long-term health of these women.

## Initiate a checklist for your unit today

Many uncommon but significant events in obstetrics have a standardized approach to diagnosis and treatment. Interestingly, many obstetric units have not developed standardized protocols for these significant events. A multidisciplinary process, which is led by obstetricians but includes midwives, obstetric nurses, and anesthesiologists, could be used to develop and test surgical

checklists for your labor unit. It is likely that the participants in the process will find it professionally rewarding, and a new surgical checklist may help improve patient care. 



RBARBIERI@FRONTLINEMEDCOM.COM

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### References

1. Arriaga AF, Bader AM, Wong JM, et al. A simulation-based trial of surgical-crisis checklists. *N Engl J Med.* 2013;368(3):246-253.
2. Haynes AB, Weiser TG, Berry WR, et al; Safe Surgery Saves Lives Study Group. A surgical safety checklist to reduce morbidity and mortality in a global population. *N Engl J Med.* 2009;360(5):491-499.
3. Duggal N, Mercado C, Daniels K, Bujor A, Caughey AB, El-Sayed YY. Antibiotic prophylaxis for prevention of postpartum perineal wound complications: a randomized controlled trial. *Obstet Gynecol.* 2008;111(6):1268-1273.
4. Stock L, Basham E, Gossett DR, Lewicky-Gaup C. Factors associated with wound complications in women with obstetric anal sphincter injuries (OASIS). *Am J Obstet Gynecol.* 2013;208(4):327.e1-e6.
5. Sultan AH, Kamm MA, Hudson CN, Thomas JM, Bartram CI. Anal-sphincter disruption during vaginal delivery. *N Engl J Med.* 1993;329(26):1905-1911.
6. Groom KM, Paterson-Brown S. Can we improve on the diagnosis of third degree tears? *Eur J Obstet Gynecol Reprod Biol.* 2002;101(1):19-21.
7. Mahony R, Behan M, Daly L, Kirwan C, O'Herlihy C, O'Connell PR. Internal anal sphincter defect influences continence outcome following obstetric anal sphincter injury. *Am J Obstet Gynecol.* 2007;196(3):217.e1-e5.
8. Sangwan YP, Solla JA. Internal anal sphincter: advances and insights. *Dis Colon Rectum.* 1998;41(10):1297-1311.
9. Rygh AB, Korner H. The overlap technique versus end-to-end approximation technique for primary repair of obstetric anal sphincter rupture: a randomized controlled study. *Acta Obstet Gynecol Scand.* 2010;89(10):1256-1262.
10. Mahony R, Behan M, O'Herlihy C, O'Connell PR. Randomised clinical trial of bowel confinement vs. laxative use after primary repair of a third degree obstetric anal sphincter tear. *Dis Colon Rectum.* 2004;47(1):12-17.
11. Ramin SM, Gilstrap LC 3rd. Episiotomy and early repair of dehiscence. *Clin Obstet Gynecol.* 1994;37(4):816823.
12. Bols EM, Hendriks EJ, Berghmans BC, Baeten CG, Nijhuis JG, de Bie RA. A systematic review of etiological factors for postpartum fecal incontinence. *Acta Obstet Gynecol Scand.* 2010;89(3):302-314.
13. Dudding TC, Vaizey CJ, Kamm MA. Obstetric anal sphincter injury: incidence, risk factors and management. *Ann Surg.* 2008;247(2):224-237.
14. Evers EC, Blomquist JL, McDermott KC, Handa VL. Obstetrical anal sphincter laceration and anal incontinence 5-10 years after childbirth. *Am J Obstet Gynecol.* 2012;207(5):425.e1-e6.



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