

# CAT Clinic

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## Does the use of episiotomy protect against postpartum incontinence?

A 26-year-old woman presents for a routine prenatal visit. She is a primigravida, 34 weeks pregnant, and has been healthy throughout her pregnancy. She has never smoked and stopped social alcohol use before conception. The patient is currently taking prenatal vitamins. She has no known allergies. Her vital signs are within normal limits, and her physical examination findings are all normal. The patient is concerned about short-term maternal complications associated with delivery, specifically urinary incontinence. In conversations with friends, she learned that some received episiotomies and some did not; all experienced variable impacts on their continence status. The patient is having trouble finding helpful patient education material and would like your guidance on whether an episiotomy would offer protection from urinary incontinence.

### CLINICAL QUESTION

Does the use of episiotomy during childbirth decrease the risk of maternal urinary incontinence?

### BACKGROUND

The incidence of urinary incontinence following childbirth is reported to be between 2% and 52%.<sup>1</sup> Vaginal delivery may be associated with a greater risk of incontinence compared to delivery by cesarean because of bladder trauma, damage to the urethra, or injury to the pelvic muscles or nerves. Studies suggest that the damage to the pelvic floor is most likely to occur during the first vaginal delivery.<sup>2</sup> Furthermore, urinary incontinence often impacts the patient's quality of

life and may contribute to comorbid depression.<sup>3</sup>

Approximately 35% of vaginal births in the United States include episiotomies.<sup>3</sup> However, the prevalence of episiotomies has declined over the past 20 years, and use of the procedure varies between type of provider; time of day; and facility type, size, and location.<sup>3</sup> Providers in favor of episiotomies argue that the procedure may protect the patient from perineal trauma and lacerations that result in pelvic floor dysfunction and incontinence. Also, many clinicians prefer the ease of repair compared to uncontrolled perineal tearing.<sup>4</sup> Investigation of a possible association between the use of episiotomy and urinary incontinence is important because of the large number of episiotomies performed with vaginal deliveries. Additionally, clinical guidelines do not specifically evaluate the use of episiotomies in the prevention of postpartum maternal incontinence.

### SEARCH CRITERIA AND RESULTS

The data sources searched included MEDLINE and Cochrane Database of Systematic Reviews. The search was limited to English language, humans, and 1995 to current, using key words *episiotomy* and *urinary incontinence*. Fifty-eight citations were identified, the majority of which were cohort or case-control study designs. Of the 58 citations, two cohort studies used a large experimental population including primigravid women, follow-up of at least 3 months postpartum, and high levels of evidence (level 2). Most studies that were identified in the

search included at least a 3-month follow-up time. Levels of clinical evidence for the evidence-based medicine domains of treatment or harm are ranked on a scale of 1 (highest level: randomized controlled trials) to 5 (lowest level: expert opinion or bench research). All of the studies included a measure of the frequency of urinary incontinence following episiotomy. One evidence-based review article was also included.

### EVALUATING THE EVIDENCE

Casey and colleagues completed a cohort study of 3,887 primiparous women who delivered vaginally at Parkland Hospital in Texas and returned to the hospital 7 months postpartum for scheduled family planning.<sup>1</sup> The participants were aged 17 to 27 years (mean 22 years) and were predominantly Hispanic (88%).<sup>1</sup> The impact of race or cultural background as a confounding factor in pelvic floor dysfunction is not known. Nonetheless, women who had had an episiotomy were more likely to experience urge incontinence (odds ratio [OR] 1.7; 95% CI 1.3-2.4), but not stress incontinence (OR 1.4; 95% CI 0.98-1.9).<sup>1</sup> The authors suggest that analyzing the different types of incontinence separately may have been incorrect, as they may not be independent of each other. In addition, generalizing this data to all patient populations may not

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be possible because of the high percentage of one racial background in the study. Nonetheless, the authors demonstrated that urge incontinence was associated with episiotomy.<sup>3</sup> However, the study design relied heavily on participants' self-reports.

**Hvidman and colleagues** published a cohort study that included information from 376 women who responded to a survey regarding duration of urinary incontinence after delivery.<sup>3</sup> The participants ranged in age from 16 to 55 years (median 29 years) and were mixed parity (153 were primiparous). All of the multiparous women had given birth vaginally at least once. Of these women, 88 (23.4%) reported postpartum urinary incontinence.<sup>3</sup> Seventy-seven (20.5%) of the partici-

to note, most of the women in this study who experienced urinary incontinence after delivery did so within an average of 5 weeks postpartum. The symptoms disappeared for all but 2.7% of the participants by postpartum week 12. This percentage was comparable to the prepregnancy levels for this group of participants.<sup>3</sup> Although this was a cohort study (level 2), one limitation was that it relied heavily on self-report questionnaires. Overall, this study reported that episiotomy was neither a protective nor a causative factor for postpartum urinary incontinence and suggests that the main predictive factors for postpartum urinary incontinence may include urinary incontinence prior to and during pregnancy.

## “A challenge in evaluating a patient with postpartum incontinence is the presence of coexisting maternal and fetal variables.”

pants underwent an episiotomy during childbirth. Interestingly, 23.9% of the episiotomy participants experienced urinary incontinence, but the adjusted OR was 1.0 suggesting that episiotomy had no overall effect on postpartum urinary incontinence. However, 18.2% reported urinary incontinence more than 4 weeks postpartum (adjusted OR 1.3, not significant; no CI given), and 3.9% had urinary incontinence at 12 weeks postpartum (OR 0.6, not significant; no CI given).<sup>3</sup>

The authors also found no correlation between postpartum urinary incontinence and the baby's birth weight, perineal suturing, vacuum or forceps delivery, urinary bladder catheter, breastfeeding, or parity. The only significant risk factors for postpartum urinary incontinence included urinary incontinence that preceded pregnancy (OR 4.7; 95% CI 2.4-9.0; population attributable proportion [PAP] 37.5%) and urinary incontinence during pregnancy (OR 7.0; 95% CI 3.7-13.3; PAP 51.7%).<sup>3</sup> Also interesting

**Viswanathan and colleagues** published a systematic review on episiotomy,<sup>2</sup> which was subsequently rewritten for the *Journal of the American Medical Association*.<sup>4</sup> The review included 16 publications, including four data sets from two randomized controlled trials and 12 prospective cohort studies. Neither of the randomized controlled studies found any correlation between postpartum urinary incontinence and episiotomy (relative risk [RR] for trials 1.02; 95% CI 0.83-1.26).<sup>2</sup> In addition, five other studies found no physiologic advantage, as determined by measuring pelvic floor muscle strength and urodynamic testing, for episiotomy. Although six of the cohort studies relied on self-reported data, a similar incidence of urinary incontinence was found in patients who received an episiotomy compared to patients assigned to the spontaneous tear group (RR for cohorts 0.88; 95% CI 0.72-1.07).<sup>2</sup> Overall, this systematic review found no clear benefit for the routine use of episiotomy.

Limitations of these studies include the fact that the results often relied on self-reported data, which may lead to a self-report bias. Also, many of the studies were completed at a single location with homogenous participants. Therefore, the data may not be applied to women outside the study's specific geographic location or demographic.

Another challenge in evaluating a patient with postpartum urinary incontinence is the presence of multiple coexisting maternal and fetal variables. For example, if a patient undergoes an elective episiotomy and experiences postpartum urinary incontinence, the patient and/or clinician may attribute the incontinence to the episiotomy. However, the literature identifies other factors—such as fetal presentation, head circumference, maternal anatomy, age of the mother, duration of labor, and others—that may cause postpartum urinary incontinence.<sup>3</sup> These factors were largely identified in observational, not randomized controlled, studies; and therefore no cause-and-effect relationship can be identified. Nonetheless, the evidence clearly suggests that episiotomy does not protect against postpartum urinary incontinence.

### CLINICAL BOTTOM LINE

A review of the best clinical evidence has found that episiotomies offer no protective benefits from pelvic floor dysfunction or incontinence. The data suggest that episiotomy does not decrease the risk of postpartum urinary incontinence. **JAAPA**

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