

Obstetrics and Fecal Incontinence

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Abstract

Anal incontinence (AI) can be a debilitating condition for women following vaginal delivery. Operative vaginal delivery and anal sphincter laceration are important risk factors for the development of postpartum AI. Obtaining a comprehensive delivery history, along with a thorough physical examination of the perineum, vagina and rectum may aid the clinician in the diagnosis of an anal sphincter defect. Sonographic imaging can also assist in identifying sphincter defects. The treatment of AI may include a combination of dietary modification, medications that promote constipation, pelvic floor physical therapy, biofeedback, anal sphincteroplasty, and/or sacral neuromodulation.

Keywords

- ▶ postpartum anal incontinence
- ▶ anal sphincter defect
- ▶ obstetric injury

CME Objectives: On completion of this article, the reader should be familiar with the evaluation and surgical management of fecal incontinence related to obstetrical injuries.

Anal incontinence (AI) is defined as the involuntary passage of gas or stool (solid or liquid). The prevalence of AI following vaginal delivery is between 5 and 26%.^{1,2} Estimates of AI likely underestimate the true extent of the problem as patients do not frequently volunteer these symptoms to a practitioner, perhaps because they are nonbothersome, but more likely due to feelings of embarrassment. Fecal urgency and soiling associated with AI may prevent a woman from returning to work and be costly to both the patient and society.³ AI also frequently coexists with urinary incontinence. Fortunately for many women, AI in the postpartum period may resolve or improve with time.⁴

Fecal continence involves a complex interplay of sphincter and levator tone with pudendal nerve function. Risk factors for postpartum AI include a history of operative delivery (forceps or vacuum) and an anal sphincter laceration. Third- and fourth-degree lacerations occur more frequently with macrosomic infants and the use of midline episiotomy. A prolonged second stage of labor may lead to an operative delivery and subsequent AI. However, in a retrospective study of cephalic term singleton vaginal deliveries, there was no significant difference in fecal incontinence (FI) after a pro-

longed (defined as greater than 90 minutes) versus short (less than 30 minutes) second stage.⁵ Injury to the pudendal nerve following a vaginal delivery may also contribute to postpartum AI. Damage to the anal sphincter may be recognized or unrecognized at the time of delivery. Even with an intact perineum there may be underlying damage from the delivery to the internal or external anal sphincter. The study by Sultan et al in 1993 revealed 35% of primiparous women 6 weeks postpartum had an occult internal, external, or concurrent internal plus external sphincter defects.⁶ In that study, 40% of multiparous women had a defect in their sphincter from a prior delivery, and an additional 4% of multiparous women had a new sphincter defect at 6 weeks postpartum.⁶ Recognition of a sphincter injury is important for possible prevention of AI and adequate primary repair.

Evaluation

Obstetric sphincter injuries complicate 2 to 6% of vaginal deliveries.^{7,8} When a woman presents to the office for her routine postpartum exam, pertinent history to obtain is whether a third- or fourth-degree laceration occurred at the time of delivery, either due to a spontaneous tear or following an episiotomy. Any difficulties encountered with the delivery, such as a shoulder dystocia, may provide insight into trauma that preceded AI. If a known sphincter laceration

occurred at the time of delivery, the woman should be asked about the loss of stool or flatus, as she may not otherwise volunteer this information. Other important aspects of the history at the postpartum visit include whether the delivering clinician was a certified midwife or physician, and whether the delivery took place as a home birth or in the hospital. The diagnosis of a sphincter laceration can be missed by a less experienced provider.⁹ Key elements of the postpartum physical exam include a perineal and vaginal exam. The height of the perineal body and any healing perineal lacerations should be inspected. If the bulbocavernosus and anal wink reflexes are intact, the pelvic nerves were spared with pregnancy and delivery. Rectal exam will provide information on rectal tone and a sphincter defect may be diagnosed by clinical exam. A dovetail sign, where the anterior perianal folds are absent, indicates a defect in the external anal sphincter. Following the history and physical exam, if a sphincter defect is suspected based on clinical exam, radiographic studies can aid in confirming the diagnosis and guide treatment recommendations.

The current gold standard imaging study in the evaluation of postdelivery anal sphincter defects is endoanal sonography.¹⁰ An intact internal anal sphincter appears as a contiguous hypoechoic circular ring, in contrast to the mixed echogenicity of the striated muscle of the external anal sphincter. The sensitivity of endoanal ultrasound in detecting sphincter defects is 100%.¹¹ Ultrasound of the anal sphincter by endovaginal and transperineal approaches has been proposed as an alternative to endoanal imaging. In a prospective observational study, there was good agreement for the detection of external and internal anal sphincter defects between two-dimensional endoanal and three-dimensional transperineal ultrasound.¹² Endoanal magnetic resonance imaging and endoanal ultrasound also have good agreement by the Cohen *K* coefficient.¹³ Alternatively, anal sphincter defects can be detected with endovaginal and transperineal ultrasound but with decreased sensitivity and specificity, 48 and 85% for endovaginal, and 64 and 85% for transperineal, respectively.¹⁴ Sonography is a useful adjunct tool to the clinical exam in the diagnosis of anal sphincter defects.

Treatment

Treatment of AI following pregnancy should begin with nonsurgical management. Nonsurgical therapies include dietary modification with increasing fiber or bulking agents. Medications that promote constipation, including loperamide, diphenoxylate hydrochloride, or atropine sulfate, can help prevent incontinence episodes associated with loose bowel movements. Additional conservative treatment options are pelvic floor physical therapy, biofeedback, and electrical anal stimulation. In a randomized study comparing biofeedback alone versus biofeedback with electrical stimulation for the treatment of postpartum FI, there was no additional symptomatic improvement with the electrical stimulation.¹⁵ Following biofeedback, both groups of women had significant improvement in fecal

continence scores, anal squeeze pressures, and quality of life. Pelvic floor physical therapy is often employed in conjunction with biofeedback but the long-term benefit of these exercises in managing incontinence symptoms is currently unknown.¹⁶

For women with an inadequate response to nonsurgical treatments, there are a few surgical options for postpartum AI. Anal sphincteroplasty has been the main surgical procedure for postpartum AI due to a sphincter defect. Sphincter defects can be repaired with either an end-to-end or overlapping approach. Three-year follow-up of a randomized trial comparing the two sphincteroplasty techniques revealed no long-term benefit with one technique compared with the other.¹⁷ Other trials have corroborated similar findings of no difference in AI rates with either technique.¹⁸ Even with surgical repair of a postpartum sphincter defect, long-term fecal continence rates may deteriorate over time. Zutshi et al in a cohort of women following anal sphincter repair for FI found 14% had complete continence at 5 years, which diminished by 10 years to no patients having complete continence.¹⁹ The other surgical alternative for FI is sacral neuromodulation. Following sacral neuromodulation, women have decreased FI episodes and improved quality of life with follow-up to 4 years postoperatively.^{20,21} Additional long-term studies are needed to determine the efficacy of sacral nerve stimulation over time.

As symptoms of AI are often under reported by patients, it is important to try and prevent obstetric sphincter lacerations that may lead to AI. This can be accomplished by avoiding routine episiotomy, preventing macrosomic infants through good glycemic control in diabetic patients, and adherence to weight gain guidelines for pregnancy.²² For women who sustain an occult injury from pregnancy and who are not symptomatic in the immediate postpartum period, with aging and the menopausal transition, fecal continence may decline.²³ There is not enough evidence at this time to recommend elective cesarean delivery on maternal request to prevent future FI for all primiparous women.⁴ However, for a multiparous woman who has AI due to a prior sphincter injury, counseling this patient on a 7 to 10% risk of recurrent laceration, and the possibility of cesarean delivery to prevent repeat laceration is warranted.^{24,25} Continued long-term studies, especially with women who have undergone sacral neuromodulation for AI, with or without correction of any underlying sphincter defect, will determine if continence rates can be maintained over time.

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