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A Vesicovaginal Fistula: A Half-Century of Undiagnosed Urinary Incontinence

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ABSTRACT

Urinary incontinence often goes undiagnosed because of a patient's reluctance to mention incontinence-related symptoms. We report a case of a symptomatic vesicovaginal fistula that went undiagnosed for 47 years. A 74-year-old, gravida 4, para 4, white woman complained to her gynecologist of vaginal bleeding of 3 months duration and pelvic pressure that had progressively worsened over the last 6 years. Further questioning revealed an astonishing 47-year history of urinary incontinence. She was diagnosed with uterine prolapse, endometrial cystic hyperplasia, and urinary incontinence and was referred for a presurgical urogynecologic evaluation. Inspection revealed a cystocele to the introitus. Speculum examination revealed obvious leakage during filling of the bladder from a defect in the anterior vaginal wall. Cystourethroscopy confirmed a vesicovaginal fistula, which was surgically repaired using a multiple-layer closure technique, resulting in postoperative continence. Fistula formation, regardless of etiology, should be an important consideration in the differential diagnosis of urinary incontinence. (J GYNECOL SURG 12:205, 1996)

INTRODUCTION

URINARY INCONTINENCE CAN BE A SYMPTOM of which patients complain, a sign demonstrated on examination, or a condition (i.e., diagnosis) that can be confirmed by definitive studies.[1] However, a surprisingly large number of patients with urinary incontinence are never successfully identified and treated. This failure to recognize urinary incontinence is a result of several factors, including patient underreporting, urinary incontinence not being recognized as a significant clinical problem by health care providers, a lack of health care provider education regarding new research findings, and inadequate long-term care staffing. Persistent major gaps exist in our understanding of the natural history, pathophysiology, and most effective treatments of the common forms of urinary incontinence.[2]

If a patient does not complain of urinary incontinence, the condition will often go undiagnosed. Because patients are often hesitant to mention incontinence-related symptoms, discussion of the topic should be initiated by health care providers during routine visits.[3] We describe a woman who, despite previous gynecologic examinations, had a 47-year history of urinary incontinence secondary to an undiagnosed vesicovaginal fistula.

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CASE REPORT

A 74-year-old, gravida 4, para 4, Caucasian woman complained to her gynecologist of vaginal bleeding and pelvic pressure. The vaginal bleeding was of recent onset (3 months), but the pelvic pressure had progressively worsened over the last 6 years. She was diagnosed with uterine prolapse and endometrial cystic hyperplasia. Further questioning by her gynecologist revealed a 47-year history of continuous urinary incontinence, for which she was referred to our urogynecology unit for presurgical evaluation.

The urogynecologic evaluation revealed complaints of urinary frequency, nocturnal enuresis, and "being wet all the time." She stated that the urine "just flows" and was not preceded by a sense of urgency. She did not wear perineal pads or diapers but changed her undergarments as often as 10 times a day. Her urinary incontinence began in the hospital immediately following the delivery of her first child 47 years ago. She described the delivery as "long and difficult" but stated that her obstetrician did not need forceps. Over the last 4 years her incontinence became worse, and she described the sensation of always losing urine. She denied a history of dysuria, urinary tract infections, bowel dysfunction, sexual dysfunction, pessary use, or surgery. Her condition had gone undiagnosed despite having seen at least five physicians, including two gynecologists and three internists, over the past five decades. She denied having ever been asked by her physicians about her incontinence and admitted that embarrassment inhibited her from offering the information.

Physical examination revealed the sacral spinal cord segments 2, 3, and 4 to be intact. The patient spontaneously voided 75 ml with minimal postvoid residual. Cystometry was performed. A 14-gauge urethral catheter was used to fill her bladder to 300 ml, at which time she expressed subjective fullness. The bladder appeared to remain completely stable throughout the filling portion of this examination. At maximum cystometric capacity, we were unable to demonstrate a visual loss of urine from the urethral meatus with coughing and Valsalva in the lithotomy and standing positions. Examination at this capacity revealed a cystocele to the introitus, the cervix in the lower one third of the vagina, and good posterior vaginal wall support. Fluid loss was immediately visualized from the anterior vaginal wall during bladder filling. A small catheter was used to probe the vaginal mucosa in order to identify the fistulous tract. Cystoscopy confirmed the communication between the bladder and the vagina just inside the bladder neck. A preoperative intravenous pyelogram (IVP) revealed a single bilateral collecting system and no evidence of a ureterovaginal fistula.

The patient was prescribed vaginal estrogen cream and was scheduled for surgery. She underwent a vaginal hysterectomy, cul-de-plasty, anterior repair, and fistula repair. The vesicovaginal fistula was repaired using a multiple-layer closure technique. With a scalpel blade, the fistula was circumscribed approximately 0.5 cm from its edge. The full thickness of the bladder wall was incised, and the fistulous tract was removed. The vaginal wall was then dissected from its underlying pubovesical fascia in a circumferential fashion 1 cm from the edge of the excised fistulous tract. The bladder mucosa was closed with a layer of running 3-0 chromic suture that inverted the bladder mucosal edge. The bladder muscularis was closed with interrupted sutures of 3-0 polyglycolic suture, and the vaginal mucosa was also closed with polyglycolic suture. Intravenous indigo carmine was given. Cystoscopy with a retrograde bladder fill confirmed bilateral ureteral patency and a watertight closure. A transurethral catheter was placed for continuous drainage over 14 days. When the catheter was removed, the patient was continent.

DISCUSSION

Genitourinary fistulas in women are relatively uncommon. In developed countries, the leading cause of genitourinary fistulas is gynecologic surgery (mainly total abdominal hysterectomy).[4-6] The vast majority of these fistulas occur just above the interureteric ridge of the bladder. In medically deprived countries, obstetric injuries resulting from prolonged labor and tissue necrosis tends to be the most common cause.[7-10] Prolonged or obstructed labor is most commonly associated with suburethral fistulas. Occasionally, traumatic instrumentation—the use of forceps or a vacuum—during delivery may result in fistula formation.

The presentation of a vesicovaginal fistula is often straightforward, with patients complaining of constant urinary leakage. A pelvic examination is often sufficient to identify the presence of a fistula. Occasionally, however, it may be difficult to distinguish urine loss as a result of a fistula from that caused by other types of urinary incontinence. A simple test to confirm a fistula is to instill a colored dye or sterile milk into the bladder. The presence of dye or milk in the vagina establishes the diagnosis of a fistula. Moir[11] described a three-tampon test that may help to localize the fistulous site. This test involves inserting three tampons in tandem into the vagina before instilling colored dye into the bladder. The location of the dye-stained

tampon helps to localize the fistulous tract. Preoperative cystoscopy should be performed to establish the size, location, and number of fistulous tracts present.

After the location of the vesicovaginal fistula has been established, a plan for repair can be made. Several techniques of vaginal and abdominal fistula repair are available. The Latzko,[12] layered closure,[13] and vaginal lapping methods[14] are the most commonly used techniques. The Latzko method is simple and effective and is commonly used in posthysterectomy patients who have a fistula at the apex of the vagina. The procedure is a partial colpocleisis and involves denuding the vaginal wall for approximately 1 cm around the margin of the fistula, layered closure of the pubovesical fascia, and closure of the vagina. The layered closure technique is a modification of the standard Sims vaginal operation for the repair of vesicovaginal fistulas. This technique was used in the repair of our patient's fistula and has been described previously. The vaginal lapping technique is an excellent choice for the treatment of large vesicovaginal fistulas. This procedure involves unilateral dissection of the fibromuscular layer of the vaginal wall from its overlying epithelium. After the fistulous tract has been excised and the bladder closed in a two-layer fashion, the fibromuscular layer is sewn to the base of the contralateral vaginal wall. The interposition of the fibromuscular layer provides insulation and reinforcements for the underlying suture layers.

An estimated 10–20 million Americans suffer from urinary incontinence. However, because of the lack of patient education, embarrassment, or hesitancy to mention incontinence-related symptoms, less than 50% ever consult a physician. When a patient does complain of urinary incontinence, the health care provider should not assume that the incontinence is caused by a filling and storage disorder of an intact lower urinary tract. Urinary incontinence can also be related to nongenitourinary causes, congenital anomalies, and urogenital fistulas. All gynecologic patients require a thorough history, including a medical, urologic, gynecologic, and neurologic assessment, with particular attention to those factors that influence bladder function, during their routine examination. In our patient, a thorough evaluation revealed a vesicovaginal fistula as the cause of incontinence. From the case history given, one could speculate that the vesicovaginal fistula we described was most likely due to obstetric trauma. Whether the result of surgery, infection, congenital anomalies, malignancy, malignancy treatment, or obstetric trauma, urogenital fistulas should be considered in the differential diagnosis of urinary incontinence.

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