Urinary Incontinence in Menopausal Women

Jamie Knarr, MSN, CRNP, Peter F. Schnatz, DO, Sabrina Kum Whitehurst, MD, and Jaime Long, MD

Abstract

- **Objective:** To present a case-based approach for the evaluation and management of stress urinary incontinence in menopausal women.
- **Methods:** A review of the literature with corresponding case study presentation.
- **Results:** Becoming familiar with the evaluation and management options of urinary incontinence is important to all practitioners who care for menopausal-aged women. Urinary incontinence affects up to 50% of women and many of the symptoms severely impact a woman’s quality of life. Stress incontinence is the most common type of urinary incontinence, and the initial evaluation can readily be conducted by the primary care provider. Incontinence symptoms should be evaluated by a thorough history and physical examination, urinalysis, urine culture, postvoid residual urine testing, a simple stress test, and possibly simple office cystometry. The treatment and management of stress urinary incontinence has seen many advances in the past decade. Non-surgical treatments should be considered first-line therapy; however, there are a number of minimally invasive, low-risk surgical procedures available to treat stress incontinence.
- **Conclusion:** Although urinary incontinence is common, many women consider it a normal part of aging and therefore do not discuss it with their physician. With multiple effective treatments now available, primary care providers should inquire about incontinence symptoms and initiate the evaluation and management of this condition.

Urinary incontinence is a common problem in women, especially as they approach menopause. Up to 50% of women are affected by some form of urinary incontinence, which can have a significant impact on their quality of life [1]. The societal cost of urinary incontinence is estimated at $26 billion annually for patients over age 65, with an annual cost of $3600 per affected patient [2].

The International Continence Society recognizes 3 major categories of urinary incontinence: stress, urge, and mixed. Two other types, overflow and functional incontinence, are less common. Together, these 5 account for the most common causes of urinary incontinence in menopausal-aged women.

Stress incontinence is the most common type of incontinence in women. The prevalence of different types of incontinence varies by age. In women less than 60 years of age, stress incontinence accounts for 55% of cases, urge incontinence for 20%, and mixed incontinence for 25%. In patients older than 60 years, stress incontinence accounts for only 30% of cases, while urge and mixed incontinence each account for 35% [3]. Becoming familiar with the evaluation and management options of urinary incontinence is important to all practitioners who care for menopausal-aged women.

**CASE STUDY**

**Initial Presentation**

A 66-year-old para 6 female presents with the primary complaint of urine leakage.

**History**

The patient has experienced progressive symptoms of urinary incontinence over the past 5 to 10 years. She indicates that her leakage occurs multiple times per week but not daily. It occurs with any valsalva maneuver (cough, sneeze, or a sudden change in position) and almost always when her bladder is full. She reports a history of voiding 8 to 10 times in the course of the day but with minimal symptoms of urgency. The few symptoms of urgency occur only at bladder capacity. Most episodes of urinary leakage occur in the absence of any urgency symptoms. The patient has been diagnosed with urogenital prolapse and is considering surgical correction. She has significant pelvic pressure and is bothered by the vaginal prolapse in the erect position. She has been in good general health, and her only medications are vitamins and intravaginal conjugated estrogens cream. Her past surgical history includes a hysterectomy a number of years ago for benign indications.

From the Department of Obstetrics and Gynecology, The Reading Hospital and Medical Center, Reading, PA.
URINARY INCONTINENCE

Table 1. Risk Factors for Stress Urinary Incontinence

<table>
<thead>
<tr>
<th>Risk Factor</th>
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<tbody>
<tr>
<td>Advancing age</td>
</tr>
<tr>
<td>Pregnancy</td>
</tr>
<tr>
<td>Parity</td>
</tr>
<tr>
<td>Prior pelvic surgery</td>
</tr>
<tr>
<td>Higher body mass index</td>
</tr>
<tr>
<td>Pulmonary conditions leading to chronic cough</td>
</tr>
<tr>
<td>Connective tissue diseases</td>
</tr>
</tbody>
</table>

- What features characterize the major types of urinary incontinence?

Distinguishing among the different types of urinary incontinence is imperative because each of the 5 major types of urinary incontinence warrants a different therapeutic approach.

Stress Incontinence

Stress incontinence occurs during periods of increased intra-abdominal pressure, when the urethral sphincter or pelvic floor muscles have been weakened or damaged and cannot maintain a closure pressure greater than the intra-abdominal pressure. Stress incontinence is divided into 2 subtypes: genuine anatomic stress incontinence and intrinsic sphincter deficiency. In genuine stress incontinence, the urethra becomes hypermobile, and hence the urethra fails to close and/or generate a pressure gradient which equals the intra-abdominal pressure. When conducting complex urodynamics, the leak point during a valsava maneuver is expected to be greater than 100 cm H\(_2\)O with genuine stress incontinence [4]. The second subtype of stress incontinence is intrinsic sphincter deficiency. This occurs when the muscles around the bladder neck weaken, which prohibits full closure or allows the sphincter to spontaneously open under pressure. During complex urodynamics, the point at which leakage occurs is expected to be less than 60 cm H\(_2\)O [4]. Commonly the urethra has limited mobility with intrinsic sphincter deficiency. It is important to note that the pressure at which leakage occurs is not diagnostic of the type of stress incontinence by itself and must be correlated with the other clinical factors. The primary symptom for both types of incontinence is urinary leakage that occurs when pressure is applied to a full bladder from activities such as coughing, sneezing, running, or lifting [5].

Risk factors for stress incontinence include physical changes that lead to pelvic floor muscle dysfunction (Table 1) [6]. The trauma of childbearing, therefore, is thought to contribute to stress urinary incontinence as it can damage the pelvic floor muscles and/or nerves. It has also been suggested that the likelihood of subsequent incontinence is dependent upon the fetal weight, the length of labor, maternal age, and higher parity. Not all studies, however, support this notion. In a study of 149 nuns, the rate of urinary incontinence was similar to that reported in women who underwent childbirth [7].

Other factors that may contribute to pelvic floor and/or urethral muscle weakness include age, connective tissue diseases, malnutrition, chronic coughing, obesity, heavy lifting or straining, and hypoestrogenism [8].

Urge Incontinence

Urge incontinence is the involuntary leakage of urine. It is often accompanied by a strong, sudden need to urinate thought to be due to bladder spasms or detrusor muscle contractions. These bladder spasms occur regardless of the amount of urine that is in the bladder. Other names for this phenomenon are overactive bladder and detrusor instability.

This condition can occur in both men and women and typically involves an overwhelming urge to urinate immediately. This urge frequently is followed by loss of urine before one can reach a bathroom (“key-in-the-door syndrome”). These urges may follow predictable cues such as returning home, exposure to cold, or the sound of running water [9].

Urge incontinence may also result from infection, bladder inflammation, bladder outlet obstruction, bladder stones, bladder cancer, neurological diseases, or neurological injuries. In most cases of urge incontinence, no specific cause can be identified, but people are more likely to develop the problem as they age, especially women [10].

Mixed Incontinence

Mixed incontinence can be a combination of any 2 or more types of incontinence but is most commonly a combination of stress and urge incontinence. Therefore, with mixed incontinence, typically the bladder outlet is weak and the detrusor muscle is overactive. The prevalence of this mixed disorder increases dramatically with increasing age [11].

Overflow Incontinence

Overflow incontinence occurs when one is unable to completely empty the bladder, leading to overflow of urine and leakage. Unlike the other types of incontinence, overflow incontinence is more common in men than in women due to an enlarged prostate, which impedes the flow of urine out of the bladder.

Conditions that may lead to overflow incontinence in women include postsurgical obstruction, neurogenic bladder, tumor obstruction, urinary stones, nerve damage from diabetes, alcoholism, Parkinson’s disease, multiple sclerosis, or spina bifida. Medications that affect nerve signals to the bladder, such as some anticonvulsants and antidepressants,
may also cause overflow incontinence. Common symptoms include incomplete emptying of the bladder, frequent nighttime urination, inability to void when the urge is present, and postvoid dribbling of urine [12].

**Functional Incontinence**

Functional incontinence occurs when a person recognizes the need to urinate but due to physical and mental limitations cannot make it to the bathroom in a timely manner. Causes of functional incontinence include confusion, dementia, poor eyesight, poor mobility, poor dexterity, unwillingness to toilet because of depression, anxiety or anger, drunkenness, or being in a situation in which it is impossible to reach a toilet, such as a wheelchair accessible restroom. This is the most common type of incontinence among elderly patients with ambulatory dysfunction, arthritis, Parkinson’s disease, or Alzheimer’s disease [13].

- **What is the evaluation of a woman with incontinence?**

Initial symptoms of urinary incontinence can be evaluated and managed by the primary care physician. A thorough history and physical exam should be performed, followed by some initial minimally invasive testing (Figure 1).

**History**

Diagnosis of urinary incontinence should begin with a thorough history, focusing on the features of the patient’s incontinence, how bothersome it is to the patient and how it is affecting her quality of life (Table 2). Patients should describe their symptoms in detail focusing on bladder and bowel habits and patterns of urination, along with the presence of leakage, pain, and/or discomfort. Details on all surgeries, births, illnesses and any prescriptions should be taken. It is also helpful to elicit from the history any transient causes of incontinence that may exist. The DIAPERS mnemonic is the most practical tool for identifying these causes (Table 3). Patients should be asked to complete a 3-day voiding diary. This is a written record of the patient’s fluid intake, fluid output, and any episodes of incontinence (Figure 2). This noninvasive tool will enhance the history that was given and help the physician to arrive at the correct diagnosis.

**Physical Examination**

A physical examination must include an abdominal and pelvic exam and likely a screening neurological exam. The exam should also take note of mobility and mental function, as these factors may make the incontinence more “functional” than anatomic. Clinicians should focus more on the nervous system, abdomen, and genital area than during a standard physical exam. Neurological examination should consist of reflexes, assessment of muscle strength, and tactile sensation. The abdominal examination should look for suggestions of hernias, tenderness, or any signs of tumor, infection, scarring from previous surgeries, or an impacted bowel [14].

A thorough pelvic exam should be performed to assess the mobility of the bladder neck, the strength of the pelvic floor muscles, and whether prolapse is present. Speculum examination aids in evaluating the lining of the vaginal tissue, looking for signs of atrophy or other signs of estrogen deficiency [14].

**Stress Test**

A common test for the evaluation of stress urinary incontinence is the stress test. Urinary incontinence can be assessed by asking the patient, whose bladder is full, to perform a valsala or cough while in the supine position. The exam should be repeated while the patient is in the more “natural” standing position. If urine loss appears after these provocations, it is considered a positive stress test [14].

**Q-Tip Test**

Evaluation of the urethra should be performed with the Q-tip test. A sterile, lubricated Q-tip is inserted into the urethra to the urethrovesical junction and the patient is asked to valsala. The physician observes the angle of change of the Q-tip during valsala (Figure 3). A change of greater than 30 degrees indicates poor support of the urethra and points toward a diagnosis of genuine anatomic stress incontinence [15].

**Postvoid Residual Volume**

A postvoid residual volume should be obtained in a basic evaluation of urinary incontinence. A postvoid residual is the amount of urine left in the bladder following urination. The postvoid residual may be measured by using a bladder ultrasound or by urethral catheterization. If the postvoid residual is abnormally high (> 100 mL), the bladder may not be contracting appropriately or the bladder outlet may be obstructed [6]. This study will help to identify if overflow incontinence exists or if urinary retention is occurring due to reversible causes such as fecal impaction or the side effect of a medication.

**Laboratory Studies**

A urinalysis and urine culture should be obtained to rule out conditions such as cystitis, which can produce irritative voiding symptoms and urge incontinence. In addition, a urinalysis may identify unsuspected glucosuria or hematuria that would warrant referral to a specialist. A urine cytology may also be performed. Patients with carcinoma in situ of the urinary bladder may present with symptoms of frequency and urgency. While the sensitivity of urine cytology is not ideal, the test evaluates for urethelial cell abnormalities. Finally, a chemistry
Table 2. Key Questions in Evaluating Patients for Urinary Incontinence

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>When did the incontinence start?</td>
<td></td>
</tr>
<tr>
<td>How often do you leak urine?</td>
<td></td>
</tr>
<tr>
<td>Is it worse during the day or night?</td>
<td></td>
</tr>
<tr>
<td>What brings it on? Do you have any warning?</td>
<td></td>
</tr>
<tr>
<td>What makes it worse?</td>
<td></td>
</tr>
<tr>
<td>Does anything make it better?</td>
<td></td>
</tr>
<tr>
<td>Do you generally leak a little (damp underwear), a moderate amount</td>
<td>(your underwear is soaked), or a lot (your clothing gets soaked and</td>
</tr>
<tr>
<td>and bladder comes out)?</td>
<td>all the urine in your bladder comes out)?</td>
</tr>
<tr>
<td>Do you leak urine before you get to the bathroom?</td>
<td></td>
</tr>
<tr>
<td>Do you leak urine during intercourse or with orgasm?</td>
<td></td>
</tr>
<tr>
<td>What is your typical fluid intake (including caffeinated and alcohol</td>
<td>beverages)?</td>
</tr>
<tr>
<td>How often do you go to the toilet to empty your bladder during the</td>
<td>daytime? How often when you are trying to sleep?</td>
</tr>
<tr>
<td>Do you have other problems urinating?</td>
<td></td>
</tr>
<tr>
<td>After you urinate, does your bladder still feel full?</td>
<td></td>
</tr>
<tr>
<td>Do you have trouble starting or stopping the urine flow?</td>
<td></td>
</tr>
<tr>
<td>Is the stream weak or strong?</td>
<td></td>
</tr>
<tr>
<td>Is urination ever painful?</td>
<td></td>
</tr>
<tr>
<td>Do you get frequent urinary tract infections?</td>
<td></td>
</tr>
<tr>
<td>Have you also had trouble controlling your bowel movements?</td>
<td></td>
</tr>
<tr>
<td>Have you had a back injury?</td>
<td></td>
</tr>
<tr>
<td>Do you have a medical condition such as Parkinson's or multiple</td>
<td>sclerosis that could interfere with bladder function?</td>
</tr>
<tr>
<td>What medications are you taking?</td>
<td></td>
</tr>
<tr>
<td>Are you using pads or other means to manage your incontinence?</td>
<td></td>
</tr>
<tr>
<td>Have you altered your activities because of incontinence?</td>
<td></td>
</tr>
</tbody>
</table>

profile is helpful for patients in whom poor renal function, obstructed ureters, or urinary retention is of concern [16].

**Imaging Studies**

A lateral cystogram can confirm the presence of stress incontinence, the degree of urethral motion, and the presence of cystocele. These radiographic images may also demonstrate intrinsic sphincter deficiency by showing a wide-open urethra on the resting films. Cystograms are not routinely ordered for the diagnosis of stress incontinence due to the cost and complexity of the procedure. The more relevant use of cystograms is for the identification of vesicovaginal fistulas, which are most often documented in this fashion [16].

**Cystometric Evaluation**

Simple office cystometry is the easiest and fastest way to distinguish straightforward stress incontinence from urge or mixed incontinence. It measures only the bladder pressure during filling and does not capture abdominal or detrusor pressures [6]. The bladder is filled in a retrograde fashion with sterile water using a catheter and 60-mL syringe. Bladder contractions are identified by monitoring the rise and fall of the fluid level in the syringe. This indicates pressure changes within the bladder, signifying a detrusor contraction. This test also helps to identify sensations during filling and bladder capacity [6].

Multichannel complex cystometry improves the accuracy of diagnosing particular types of urinary incontinence. It measures both bladder and abdominal pressures. This more detailed information allows for leak point pressures, involuntary detrusor contractions, and bladder compliance to be identified [6]. An electromyogram (EMG) of the striated muscles of the sphincter is often also performed at the time, allowing for assessment of the pelvic floor muscles [6].

The benefits of the complex testing should outweigh the risks prior to the test being ordered. These include time, cost, invasiveness, discomfort to the patient, and iatrogenic urinary tract infection [17]. However, if the patient has mixed incontinence symptoms, previous incontinence surgery, voiding dysfunction, neurologic symptoms, or other complicating factors, complex cystometry (urodynamic testing) is advisable prior to beginning treatment. Interestingly, clinical history (versus urodynamic tests) has been shown to have a sensitivity of 82% and a specificity of 57% for stress incontinence, a sensitivity of 69% and specificity of 60% for urge incontinence or detrusor overactivity, and a sensitivity of 51% and specificity of 66% for mixed incontinence [4].

Other tests to consider prior to initiation of treatment include cysto/urethroscopy and/or pelvic ultrasound if the history or physical examination warrant.

Table 3. Common Causes of Transient Urinary Incontinence

<table>
<thead>
<tr>
<th>Tool</th>
<th>Impaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>elirium</td>
</tr>
<tr>
<td>N</td>
<td>infection (urinary tract)</td>
</tr>
<tr>
<td>A</td>
<td>trophic urethritis or vaginitis</td>
</tr>
<tr>
<td>P</td>
<td>pharmaceuticals (eg, diuretics, anticholinergics)</td>
</tr>
<tr>
<td>P</td>
<td>psychological disorders (eg, depression)</td>
</tr>
<tr>
<td>E</td>
<td>ndocrine disorders (eg, diabetes)</td>
</tr>
<tr>
<td>R</td>
<td>stricted mobility</td>
</tr>
<tr>
<td>S</td>
<td>tool Impaction</td>
</tr>
</tbody>
</table>


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**Case Continued**

Physical examination revealed the patient’s external genitalia were normal. Her Q-tip test was positive with an excursion > 60 degrees with valsalva. Her postvoid residual urine volume was 80 mL after a voided volume of 505 mL. Her urinalysis revealed no leukocyte...
**Voiding Diary**

Please complete the voiding diary below for the 3 days prior to your bladder testing.

<table>
<thead>
<tr>
<th>Fluids</th>
<th>Urinations</th>
<th>Accidents</th>
</tr>
</thead>
<tbody>
<tr>
<td>What did you drink?</td>
<td>How many times?</td>
<td>How much on average?</td>
</tr>
<tr>
<td>S = small</td>
<td>M = moderate</td>
<td>L = large</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sample</th>
<th>Morning</th>
<th>Afternoon</th>
<th>Evening</th>
<th>Nighttime/ sleeping</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1</td>
<td>Morning</td>
<td>S M L</td>
<td>Yes No</td>
<td>Yes No</td>
</tr>
<tr>
<td></td>
<td>S M L</td>
<td>Yes No</td>
<td>Yes No</td>
<td>Yes No</td>
</tr>
<tr>
<td></td>
<td>S M L</td>
<td>Yes No</td>
<td>Yes No</td>
<td>Yes No</td>
</tr>
<tr>
<td></td>
<td>S M L</td>
<td>Yes No</td>
<td>Yes No</td>
<td>Yes No</td>
</tr>
<tr>
<td></td>
<td>S M L</td>
<td>Yes No</td>
<td>Yes No</td>
<td>Yes No</td>
</tr>
<tr>
<td>Day 2</td>
<td>Morning</td>
<td>S M L</td>
<td>Yes No</td>
<td>Yes No</td>
</tr>
<tr>
<td></td>
<td>S M L</td>
<td>Yes No</td>
<td>Yes No</td>
<td>Yes No</td>
</tr>
<tr>
<td></td>
<td>S M L</td>
<td>Yes No</td>
<td>Yes No</td>
<td>Yes No</td>
</tr>
<tr>
<td></td>
<td>S M L</td>
<td>Yes No</td>
<td>Yes No</td>
<td>Yes No</td>
</tr>
<tr>
<td></td>
<td>S M L</td>
<td>Yes No</td>
<td>Yes No</td>
<td>Yes No</td>
</tr>
<tr>
<td>Day 3</td>
<td>Morning</td>
<td>S M L</td>
<td>Yes No</td>
<td>Yes No</td>
</tr>
<tr>
<td></td>
<td>S M L</td>
<td>Yes No</td>
<td>Yes No</td>
<td>Yes No</td>
</tr>
<tr>
<td></td>
<td>S M L</td>
<td>Yes No</td>
<td>Yes No</td>
<td>Yes No</td>
</tr>
<tr>
<td></td>
<td>S M L</td>
<td>Yes No</td>
<td>Yes No</td>
<td>Yes No</td>
</tr>
</tbody>
</table>

**Figure 2. Voiding diary.**
esterase, nitrites, glucosuria or hematuria and urine culture revealed no bacterial growth.

Pelvic examination was consistent with a significant stage II anterior wall prolapse (cystocele). The patient also had evidence of a stage II mid rectocele noted on the posterior wall. In addition, there was a suggestion of an apical support defect, as the vaginal cuff approached the hymeneal ring with valsalva.

Due to the patient’s mixed incontinence, she was evaluated using complex cystometry (urodynamic studies): the patient experienced her first sensation at 160 mL, her first urge at 280 mL and reached capacity at 530 mL. She had normal bladder compliance. With multiple episodes of coughing and valsalva during the filling phase, there was demonstrable urinary leakage. The average pressure at which valsalva produced leakage was 111 cm H$_2$O. The patient demonstrated reactive detrusor overactivity with both cough and valsalva, but no spontaneous detrusor overactivity was noted. With each of these episodes of detrusor overactivity, no demonstrable leakage was noted during the filling phase.

EMG revealed normal recruitment during the filling phase. There was no evidence of pelvic floor dysfunction. The patient had no evidence of obstruction based on her pressure flow study.

Following completion of urodynamic testing, a stress test was performed using indigo carmine–stained sterile water. This is an objective test that is done to determine if the fluid lost is indeed urine. The bladder was filled to a capacity of 650 mL with indigo carmine–stained sterile water. At this capacity, with the patient supine in the urodynamic chair, a cough produced prompt and copious urinary leakage without temporal delay. She was then placed in the erect position and put through a number of provocative maneuvers. Both jumping and coughing produced prompt urinary leakage without temporal delay.

**Physician’s Impression from Workup and Testing**

1. Genuine stress incontinence with urethral hypermobility: valsalva leak point pressures averaged 111 cm H$_2$O which is not indicative of intrinsic sphincter deficiency
2. Mild reactive detrusor overactivity: noted on complex cystometric testing in response to coughing and valsalva without spontaneous detrusor overactivity
3. Urogenital symptomatic prolapse: both an anterior and a posterior stage II prolapse

* How is stress urinary incontinence treated?

The past decade has seen many advances in the treatment of stress urinary incontinence. Although nonsurgical options for treatment should be considered first-line therapy, there are a number of minimally invasive, low-risk surgical procedures available to treat stress incontinence.

**Behavioral and Physical Therapy, Pessaries**

Conservative treatment with pelvic floor muscle training (Kegel exercises) should be offered to all women as first-line management [18]. This therapy is effective for both stress and urge incontinence. Brief verbal instruction on pelvic floor muscle training is usually inadequate to properly initiate this exercise program [19]. Many experts suggest use of performance feedback in order to properly isolate the muscle function desired. This feedback can be accomplished
with the aid of an experienced pelvic floor physical therapist and use of biofeedback as needed.

In addition, management of fluid intake and scheduled voiding (bladder retraining) can be utilized as treatment. This treatment can be helpful in establishing bladder control in adults and even retraining the bladder to accommodate larger volumes [20]. A recent systematic review of 96 randomized controlled trials on nonsurgical treatments of urinary incontinence noted the greatest resolution/improvement of incontinence using a combination of pelvic floor muscle training, biofeedback, and bladder retraining (pooled risk difference, 0.13) [21].

Pessaries are helpful for some patients, but only about 50% of patients who try a pessary will continue to use it for 2 years or beyond [20].

Pharmacologic Treatments

Pharmacologic treatment, such as estrogens, alpha agonists, and some antidepressants, have been used to treat stress incontinence. However, no pharmacologic therapy is currently approved for this indication [20].

Oral estrogens have been shown to have a similar effect to placebo with improvement in urinary incontinence symptoms. A randomized blinded study of 1525 menopausal women found that 21% of women receiving hormonal therapy (estrogen and/or progestin) reported improvement in incontinence symptoms, while the placebo group saw a 26% improvement in incontinence symptoms [22]. It was also identified that 39% of the women receiving estrogen/progestin reported a worsening in incontinence symptoms [22]. Treatment with vaginal estrogens has produced inconsistent improvement in urinary incontinence [21].

Antidepressants, such as duloxetine, and their effect on stress urinary incontinence have been examined. A double-blind randomized, placebo-controlled study of 553 women showed a 54% to 64% improvement in urinary incontinence symptoms for women taking duloxetine compared with a 41% improvement in women taking the placebo [23]. While antidepressants may help for mild cases, data show they are only slightly more effective than placebo, resulting in improvement in symptoms, and are not curative [23]. Alpha-agonists, such as norephedrine, have been studied in small trials and have shown modest effects. Due to the small sample size (n = 23), the significance of these effects cannot be determined [24].

Surgery

The trend towards minimally invasive procedures, such as placement of a midurethral sling through retropubic, supra-pubic, and obturator approaches, has been propelled largely by the ample evidence that suggests that these are effective, low-risk procedures for women with stress urinary incontinence. It has been proposed that midurethral slings provide continence by stabilizing the urethra during periods of increased intra-abdominal pressure. As opposed to the traditional retropubic colposuspension incontinence surgeries, midurethral slings are “tension-free” and therefore are associated with less postoperative voiding dysfunction.

The advent of the original retropubic tension-free vaginal tape sling in 1996 marked a major shift in the surgical treatment of stress incontinence [25]. In this original procedure, 2 needles are placed vaginally, brought through the retropubic space, and exit through 2 small suprarectal skin incisions. A major advantage is that no suspension sutures or major dissection is required. A suprapubic, or “top down” approach soon followed, though there is some concern that success may be lower with this procedure than the original “bottom up” technique [26]. Case series have reported success rates following the retropubic midurethral sling ranging from 84% to 94% at 5 years [27]. The latest approach to this technique is the transobturator sling, developed in 2001, by which the needles are passed through the upper inside corner of the obturator foramen. This approach avoids the retropubic space and thereby limits potential injury to bladder, bowel, and the major vessels of the pelvis. Initial case series reported similar success rates to the traditional retropubic midurethral slings; however, more recent data has suggested that there may be certain patient characteristics which contribute to a decreased success rate [28].

While surgical intervention has a reported cure rate of about 84% to 94%, it has a higher complication rate [27]. Complications include bladder perforation, urinary retention, worsening detrusor instability, and implantation of permanent material. For these reasons, conservative approaches should be the first line of action.

Injection of transurethral bulking agents is another possible treatment for stress urinary incontinence. Bulking agents such as collagen or porcine have shown curative rates of 51.5% to 60% for women with stress urinary incontinence [21]. It is important to note that these treatments have poor durability and permanency and the patient may require several transurethral injections throughout their lifetime.

Case Continued

Based on the evaluation and physical examination, Q-tip test, urodynamics testing and stress test, the patient has anatomic stress incontinence. This is demonstrated when she is at a bladder capacity of approximately 530 mL to 650 mL. Her urethral hypermobility along with her positive stress test suggest that she may benefit from concomitant incontinence surgery, such as tension-free vaginal tape, during surgical repair of her urogenital prolapse. Due to the severity of her symptoms and her concomitant urogenital prolapse repair, the patient undergoes a retropubic tension-free vaginal tape.
tape sling procedure for the management of her genuine anatomic stress incontinence. In addition, an anterior and posterior repair was done for her urogenital prolapse. The patient tolerated the procedure well and is doing well postoperatively without complications, or residual symptoms.

CONCLUSION

Urinary incontinence is a common problem that is less “benign” than we often consider. It can result in an increased risk for skin infections, depression, sleep disturbance, falls, and fractures. Although urinary incontinence is very common, many women consider it a normal part of aging and do not mention it to their primary care physician. With many effective treatments now available, primary care physicians should inquire about incontinence symptoms and begin the initial evaluation and treatment. The severity of the incontinence symptoms will influence treatment decisions, and referral to a specialist may be necessary.

References