
Evaluation of the patient with incontinence

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The incontinent patient is evaluated in order to make a presumptive diagnosis so that treatment can be offered. The evaluation begins with a history and a physical examination. The history focuses on the description of the patient's incontinence. Assessing the patient's bother and determining their expectations of treatment may further guide how aggressive one needs to be both with the evaluation and the presentation of treatment options. The important parts of the physical exam are an examination of the abdomen and pelvis including a provocative stress test. A urinalysis and a post-void residual (PVR) should be performed in all incontinent patients.

Incontinence questionnaires, voiding diaries, and pad weight

tests can provide more objective data than the history alone. Upper tract imaging is indicated in the patient with a history of hematuria and in patients with suspected hydroureteronephrosis. Other imaging may be useful to further evaluate other suspected pelvic pathology. Urodynamics are performed to determine if the incontinence is due to bladder or urethral dysfunction or both, to assess if the patient has a storage or emptying problem and lastly in an effort to identify patients whose upper tracts are at risk due to high bladder storage pressures. Cystoscopy is indicated in the work up of some incontinent patients. The evaluation of the incontinent patient consists of a history, a physical, urinalysis and a post-void residual. Optional evaluative tests consist of a variety of urodynamic tests, imaging studies and cystoscopy.

Key Words: incontinence, evaluation

Introduction

Urinary incontinence is a significant problem accounting for more than 1.1 million office visits in 2000 in the United States at a cost estimated to be approximately \$19.5 billion.^{1,2} The aim of the evaluation is to establish a presumptive diagnosis so that empiric or disease specific treatment may be instituted.³

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History

The evaluation of the incontinent patient begins with a history and a physical examination. Although this seems rudimentary a careful history and physical examination in patients deemed to have failed treatment will often reveal additional problems contributing to their ongoing incontinence. The patient should be questioned regarding their incontinence with particular emphasis on the description of their incontinence. The patient is asked to describe the onset, frequency and severity of their incontinence. A variety of questionnaires or a diary

can be used to aid in this. The questions from the MESA questionnaire are helpful to distinguish stress from urge incontinence.⁴ The symptoms of stress are: do you leak with coughing, laughing, sneezing, lifting, straining, walking, bending or getting up from sitting. The urge symptoms are:

do you leak without warning, on your way to the toilet, when you are full, when you wash your hands, in cold weather or when you drink something cold.

Incontinence may be quantified by asking the patient if he or she wears a pad or other protective garment and how often it is changed.

Patients should be questioned about their intake, as well as their voiding habits. Additional urologic symptoms are also elicited especially other lower urinary tract symptoms in males. Female patients are asked about symptoms of pelvic prolapse, such as a sensation of vaginal fullness or pressure, or the observation of a bulge in the vagina. Patients should be asked about bowel function, including being asked if they need to splint with defecation. The response to previous treatments, including drugs or prior surgical procedures is noted.

Other features of the history include previous gynecologic or urologic procedures, neurological problems, past medical problems, current medications including use of over-the-counter medication, and a social and sexual history. Assessing the patient's bother and determining their expectations of treatment can help determine in the first visit how aggressive one needs to be both with the evaluation and the presentation of treatment options.

Clinician or self-administered structured condition specific questionnaires may be used to facilitate disclosure of embarrassing symptoms, ensure the symptoms are not omitted and standardize information.⁵ Although a complete history is important it is not accurate enough to define the patient's problem and it should not be the only tool used to diagnose or treat. Harvey and Versi found that the positive predictive value of the symptom of stress incontinence was 56% for the diagnosis of pure urodynamic stress incontinence and 79% for the diagnosis of urodynamic stress incontinence with other abnormalities.⁶ The positive predictive value of a history of urge has been shown to be even lower, 37%.⁷

Physical

A complete physical examination is performed with emphasis on the abdominal, pelvic and rectal examination and a brief neurological assessment. In females the health of the vaginal mucosa is assessed

during the pelvic exam. Healthy vaginal mucosa is pink, thick and well rugated as opposed to atrophic vaginal tissue that is thin, pale and lacking rugae. A pelvic examination with the patient supine is sufficient to determine if the urethra moves with straining or coughing. One of the most important parts of the physical exam is a provocative stress test to determine if the patient leaks with a cough or a Valsalva. This can be done supine or standing and ideally with the bladder comfortably full. If stress leakage is not demonstrated on exam in the patient who describes stress incontinence then it should be demonstrated in the urodynamic lab prior to embarking on treatment of stress incontinence.

The presence of associated pelvic organ prolapse is also noted. If the patient has symptoms of a prolapse and it is not demonstrated when the patient is supine then they are reexamined standing. Pelvic organ prolapse may contribute to the patient's voiding problems and may have an impact on diagnosis and treatment. When assessing prolapse support of the anterior and posterior vaginal wall and the apex are assessed. The presence and grade of the prolapse is determined. One of the more objective methods of grading pelvic organ prolapse is with the POP-Q exam.⁸ Measurements, from a variety of points on the vagina at rest and with maximal strain, are made relative to the hymen. The genital hiatus, the perineal body and the total vaginal length are measured. The integrity of the muscular components of the pelvic floor is also assessed during a pelvic exam. A determination is made as to the patient's ability to contract her pelvic floor muscles and the strength of her contraction.

The rectal exam includes the evaluation of sphincter tone and perineal sensation. The presence or absence of a rectocele and an enterocele are also assessed with the rectal. The integrity of the external anal sphincter is assessed by examining for a defect noted either visually or on rectal exam.

In men a digital rectal exam is performed to assess the size, symmetry and consistency of the prostate gland.

Urinalysis

A urinalysis is performed in all incontinent patients to determine if there is any evidence of hematuria, pyuria, glucosuria, proteinuria, leukocyte esterase or nitrates. A positive dipstick urinalysis should prompt a urine microscopy. A urine specimen is sent for cytology if there is hematuria and/or irritative voiding symptoms. The urine is cultured if there is leukocyte esterase, nitrates, pyuria or bacteriuria. Infection should be treated prior to further investigations or interventions.

Post-void residual urine

A post-void residual (PVR) is measured either with pelvic ultrasound or directly with a catheter. PVR is variable and may need to be measured on more than one occasion. The Agency for Health Care Policy and Research (AHCPR) guidelines described a normal PVR of under 50 ml and a PVR in excess of 200 ml as abnormal.⁹

A significant PVR urine may reflect either bladder outlet obstruction or poor bladder contractility. The only way to distinguish outlet obstruction from poor contractility is with urodynamic testing.

Ancillary tests

There are a number of validated questionnaires that assess symptoms and quality of life. Use of these questionnaires during the initial evaluation can provide further insight into a patient's symptoms and the impact of their symptoms on their quality of life. Repeated use of the questionnaires with treatment assesses the results of treatment. The third International Consultation on Incontinence has highly recommended and given a Grade A to several questionnaires for use in incontinent patients.¹⁰ The questionnaire highly recommended to evaluate symptoms and quality of life impact of urinary incontinence in men and women is the ICIQ.¹¹ Other questionnaires that received a Grade A are the I-QOL,¹² SEAPI QMM Quality of Life Index,¹³ Bristol Female LUTS (BFLUTS)¹⁴ and BFLUTS- short form SF,¹⁵ ICS male¹⁶ and ICSmaleSF,¹⁷ Kings Health Questionnaire,¹⁸ Urogenital Distress Inventory (UDI)¹⁹ and UDI-6,²⁰ Incontinence Impact Questionnaire (IIQ)²¹ and IIQ-7,²⁰ Incontinence Severity Index (ISI),²² Stress and Urge Incontinence and Quality of life Questionnaire (SUIQQ),²³ Urinary Incontinence Severity Score (UISS),²⁴ CONTILIFE,²⁵ Overactive Bladder Symptom and Health-related Quality of life (OAB-q)²⁶ and DAN-PSS.²⁷ As these questionnaires have been designed to assess symptoms and or quality of life impact of incontinence alone or in the presence of lower urinary tract symptoms, including overactive bladder in men, women or both, clinicians should use the questionnaire that is most relevant and practical to their patients.

Voiding diaries, which include intake, urinary frequency, voided volume and incontinence episodes, are helpful in the initial evaluation particularly if the information is not obtained by the history. A voiding diary may also be used to detect a change in symptoms with treatment.

A pad weight test is a more objective measure than a pad count of how incontinent the patient actually is.

Pad weight tests are particularly useful in male patients with stress incontinence as there is good correlation between a low pad weight test (less than 148 gm of urine loss per day) and a successful outcome with a bone anchored sling.²⁸

Radiologic imaging

Upper tract imaging is indicated in the patient with a history of hematuria, the patient with suspected hydronephrosis due to high bladder storage pressures or severe uterine prolapse, or in patients with a suspected ectopic ureter or ureterovaginal fistula.²⁹

A transvaginal ultrasound is useful to further evaluate suspected periurethral pathology or if there is a concern about adnexal or uterine pathology. An endoanal ultrasound is useful to evaluate the patient with a defect in the external anal sphincter on exam or in the patient with fecal incontinence.

An MRI is not indicated in the routine evaluation of prolapse but may be used in certain clinical or experimental situations. MRI does have a role in the evaluation of periurethral pathology, particularly in the patient with a presumed urethral diverticula.

Defecatory proctography and rectal manometry are useful in some patients with bowel issues.

Urodynamics

Urodynamics is used in the incontinent patient to determine if the incontinence is due to bladder or urethral dysfunction or both, to assess if the patient has a storage or emptying problem and lastly in an effort to identify patients whose upper tracts are at risk due to high bladder storage pressures.

A cystometrogram assesses bladder behavior during filling. Normally, bladder pressure remains flat during filling. If bladder pressure rises incrementally during filling, a diagnosis of poor compliance is made. As the bladder pressure rises and eventually exceeds the urethral resistance, incontinence results. Poor bladder compliance in a female patient or in a patient with a neurogenic disorder makes the assessment of bladder neck and urethral function difficult, since the rise in bladder pressure may mimic stress incontinence. Poor compliance and poor urethral function may coexist.

The most common abnormality of bladder function is detrusor over activity that causes urge incontinence. Obstruction should be ruled out as the cause of urge incontinence in the female patient who has had prior incontinence procedures or in the male patient. A cystometrogram may fail to demonstrate any

detrusor overactivity in the patient with urge incontinence and detrusor overactivity may be seen in the patient without symptoms of urge.

The method to diagnosis stress incontinence remains debatable. Tests commonly performed are the measurement of the abdominal (ALPP) or the urethral pressure profile. The ALPP which is the amount of abdominal pressure required to induce urinary loss may also be called the Valsalva leak point pressure. ALPP is used to diagnose stress incontinence, since it is abdominal pressure that is the expulsive force in stress incontinence. In theory measuring the ALPP allows for quantification of the degree of urethral dysfunction. A normal urethra will not leak at any pressure, a mobile urethra will leak at high abdominal pressures and a poorly functioning intrinsic sphincter will leak at low pressures.³⁰ When measuring ALPP in patients with prolapse the prolapse should be reduced during the test to prevent the increase in abdominal pressure being absorbed by the prolapse. Prolapse can be reduced digitally, with a sponge forceps, a pessary, a vaginal pack, or a syringe cover from a 60 cc syringe.

Obstruction is diagnosed on urodynamics with a pressure-flow study when there is a high detrusor pressure during attempted voiding and a corresponding low flow. Simultaneous fluoroscopy may be helpful to diagnose the site of obstruction, particularly in men.

EMG may be used to assess the tone of the striated muscle of the external urethral or anal sphincter or the perineal floor muscles, with patch, plug, or needle electrodes. Normally relaxation of the external urethral sphincter occurs with a detrusor contraction. In a patient who fails to relax there is either a neurogenic problem or the patient is a dysfunctional voider. Failure of relaxation of the external sphincter with voiding may also be diagnosed with fluoroscopy.

Cystoscopy

Cystoscopy is indicated in the work up of the incontinent patient if there is concern for a diverticula, a fistula, or a foreign body such as sling material. In men with post-prostatectomy incontinence cystoscopy is indicated to evaluate the caliber of the bladder neck.

Summary

In summary, the evaluation of the incontinent patient consists of a history, a physical, urinalysis and a post-void residual. In women concomitant prolapse symptoms should be elucidated and the patient should be assessed for prolapse. In men the presence

of additional lower urinary tract symptoms should be ascertained and the possibility of obstruction should be considered. The impact of incontinence on the patient's quality of life is important and can be measured objectively with questionnaires.

Optional evaluative tests consist of a variety of urodynamic tests, imaging studies and cystoscopy.

Disclosure

None.



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