

CME CASE PRESENTATION

For more information see below.

Case 1: Classification of Lower Urinary Tract Symptoms (LUTS) and Urinary Incontinence (UI)

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Disclosure record for David R. Staskin, M.D.
Last reviewed/edited this information on January 10, 2011.
Uroplasty: Consultant or Advisor; American Medical Systems:
Consultant or Advisor; Astellas: Consultant or Advisor; Pfizer:
Consultant or Advisor; Glaxo: Consultant or Advisor; Allergan:
Consultant or Advisor

LEARNING OBJECTIVES:

1. Discuss screening and identification of LUTS;
2. identify different causes of LUTS;
3. demonstrate an awareness of what can be accomplished in the PCP office in regards to evaluation;
4. specify treatment options for OAB and BPH; and
5. examine when to refer for specialist evaluation



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Case/Patient #1A:

A 62 y/o G4P4 obese female complains of urgency, frequency, and urgency incontinence. She voids 10 times/day and 2 times/night, accompanied by urgency (compelling need to void) 50% of the time and one or two episodes of urgency incontinence per day.

Case/Patient #1B:

A 42 y/o G2P2 female "weekend athlete" in otherwise excellent health complains of urinary loss with "effort". She reports bothersome urinary leakage "drops to squirt" with minimal sensation during a cough, laugh, sneeze, or during physical exertion. She reports no associated urinary urgency, frequency, or nocturia.

Case/Patient #1C:

A 79 y/o community dwelling female has recently been discharged from the hospital following THR secondary to a fall, during which time she had an indwelling foley catheter. She complained of minimal voiding symptoms prior to admission. Most bothersome is urinary frequency and urinary incontinence with minimal sensation especially at night on the way to the bathroom (bedside commode). She also complains of the sensation of incomplete emptying.

Case/Patient #1D:

A 67 y/o male complains of nocturia and recent onset of urgency incontinence. On further questioning he admits to an impaired flow and decreased emptying. He has been taking an over-the-counter cold medication for the past week.



PHYSICIAN ACCREDITATION STATEMENT

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QUESTION 1: The assessment of urinary incontinence in every patient should include:

- Establish a presumptive or condition specific diagnosis, and exclude underlying organ-specific related or unrelated conditions that would require intervention.
- Assess the level of bother and desire for intervention from information obtained from the patient or caregiver.
- Institute empiric or disease specific primary therapy based on the risk and benefit of the untreated condition, the nature of the intervention and the alternative therapies.
- Prompt the recommendation of additional more complex testing or specialist referral.
- All of the above

DISCUSSION OF QUESTION ONE

The answer is E.

Lower Urinary Tract Symptoms (LUTS) cannot be used to make a definitive diagnosis since they may also indicate pathologies other than Lower Urinary Tract Disease (LUTD). LUTS may include Overactive Bladder (OAB) a syndrome which may be associated with urgency incontinence (OAB-wet) or without incontinence (OAB-dry) and should prompt consideration and as appropriate, an evaluation for other similar symptom based pathology.

Urinary incontinence can be described by symptoms or storage and emptying function. Incontinence can be qualified by frequency, severity, precipitating factors, social impact, effect on hygiene and quality of life, the measures used to contain the leakage and whether or not the individual seeks or desires help.

Urinary incontinence should be categorized by symptoms into urgency incontinence, stress incontinence, or overflow incontinence – or mixed (combined) incontinence. Conservative (non-invasive) therapies may then be started based on this classification to treat the most troublesome component, or either component of the incontinence. More sophisticated testing (eg. urodynamics studies) is not required prior to the institution of conservative therapy.

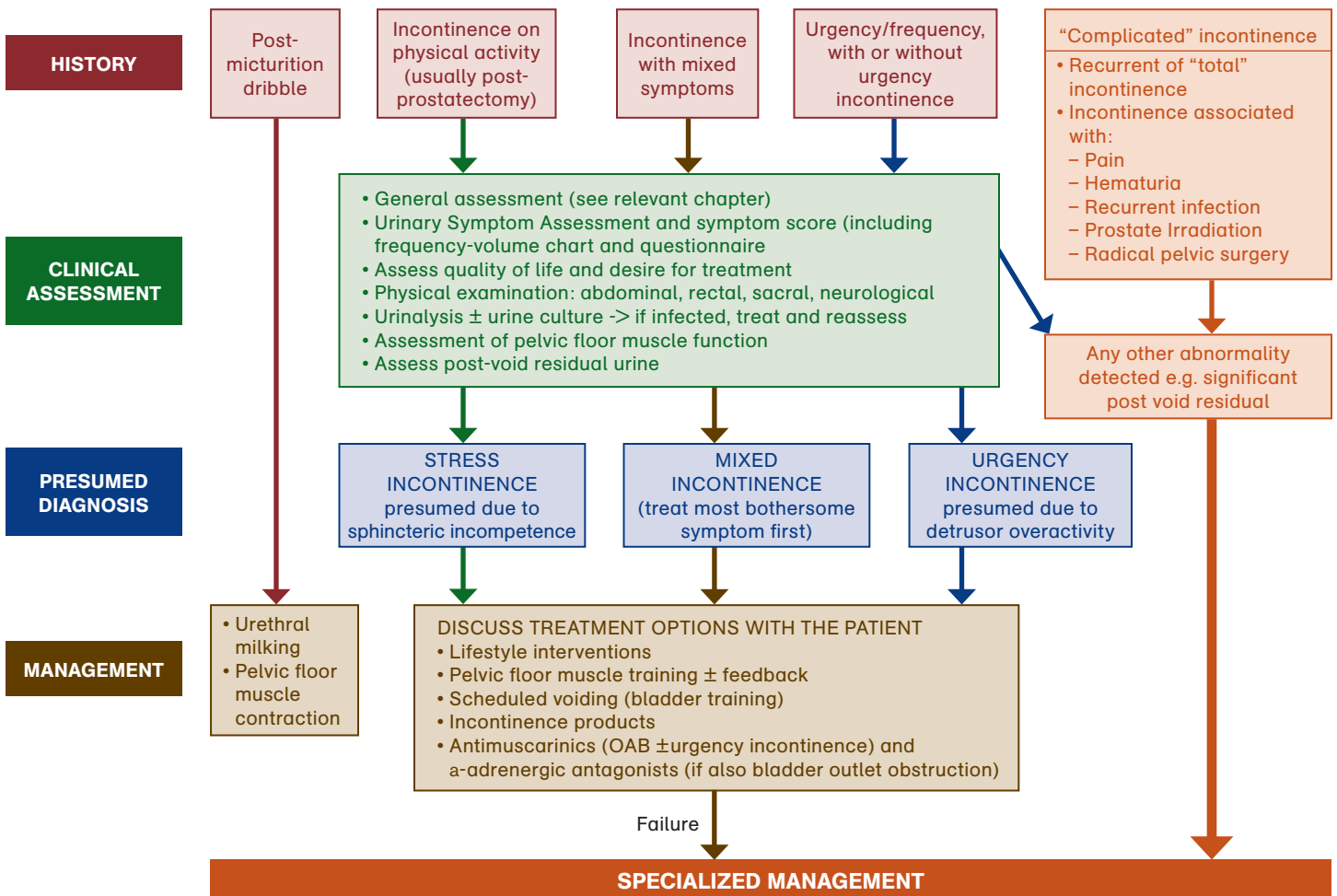
A bladder diary is helpful in order to document and communicate the frequency of voids and incontinence episodes experienced by the patient. The AUA symptom score is useful in male patients with LUTS although it does not include a specific question about urinary leakage. Additional information as appropriate may include volume of intake, voided volume, and/or symptoms such as urgency or discomfort.

Referral to a specialist is recommended for hematuria (visible or microscopic), urinary tract infection (persistent or recurrent), prolapse (symptomatic or below the introitus), obstruction or retention (symptoms or findings of palpable bladder, hydronephrosis or obstructive renal insufficiency), suspected neurological disease, mass (urethral, bladder or pelvic - benign or malignant), fistula (urinary or bowel), a history of prior pelvic surgery or radiation (incontinence, oncologic).

Specific tests (urinalysis, urine culture, post voiding residual urine):

It is considered standard to perform a urinalysis either by using a dipstick test or examining the spun sediment. If a dipstick test is used, it is recommended that a “multiproperty” strip that includes fields for hematuria, glucose, leukocyte esterase and nitrite tests be chosen. Dipstick is not as accurate as urine culture, being specific for infection

INITIAL MANAGEMENT OF URINARY INCONTINENCE IN MEN



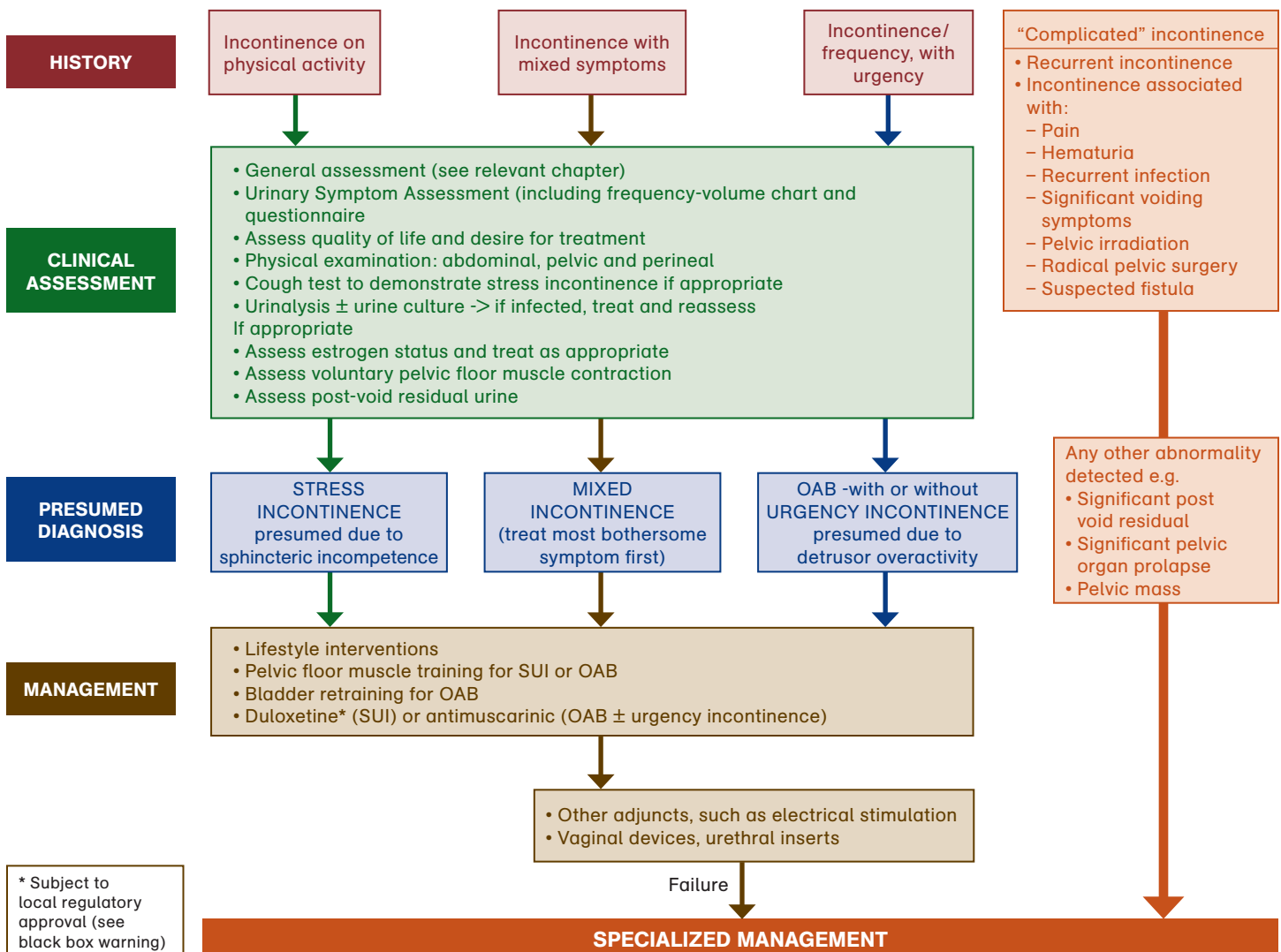
but not sensitive. Additional tests available on urine dipstick strips, such as protein, bilirubin, ketones and pH, may be helpful in the broader medical management of patients. However, they are not essential in the context of evaluation of the patient with urinary incontinence or lower urinary symptoms.

The PVR is the volume of urine remaining in the bladder following a representative void. PVR measurement can be accomplished within a few minutes of voiding either by catheterization or by calculation of bladder volume using a portable ultrasound scanner. An increased PVR alone is not necessarily a problem, but if combined with high pressures it can lead to upper tract problems. If related to UTIs, PVR may need to be treated since UTIs may not be eradicated in the presence of an infected residual. A significant PVR also decreases the functional bladder capacity and contributes to urgency/frequency, urge incontinence and nocturia. The AHCPR guidelines state that, in general, a PVR less than 50 ml is considered adequate bladder emptying and over 200 ml is considered inadequate emptying. The PVR that is "safe" for the institution of anticholinergic agents has also not been established. International Consultation on BPH defined a range of 50 to 100 ml as the lower threshold to define abnormal PVR. Female patients who present with storage specific symptoms, with normal sensation and no complaints

of decreased bladder emptying, and no anatomical, neurological, organ-specific, or co-morbid risk factors for retention may be assessed for bladder emptying by history and physical examination alone, depending on the potential morbidity of the failure to diagnose and the nature of the intended therapy. A palpable bladder on physical exam is an indication for referral to a specialist. Residual urine determination by bladder scan is preferable to catheterization due to the increased morbidity associated with instrumentation. Due to the increased possibility of bladder outlet obstruction due to prostatic obstruction is increased in the male patient, the threshold for investigating residual urine in the male is significantly lower. A PVR should be performed in patients where decreased bladder emptying is suspected, especially if treatments that decrease bladder contractility or increase outlet resistance are being considered.

Staskin D, Kelleher C, et al. Initial Assessment of Urinary and Faecal Incontinence in Adult Male and Female Patients. Incontinence. 4th International Consultation on Incontinence. eds. Abrams P, Cardozo L, Khoury S, Wein A. Health Publications Ltd. Paris 2009. pg 333-340. Recommendations of the International Scientific Committee. 4th International Consultation on Incontinence. eds. Abrams P, Cardozo L, Khoury S, Wein A. Health Publications Ltd. Plymouth, 2009. pg 1781, 1785. Managing Acute and Chronic Urinary Incontinence (AHCPR Publication No. 96-0686). The Urodynamic Assessment of lower urinary tract symptoms. Benign Prostatic Hyperplasia. Eds. Chatelain C, Denis L, Foo K, et al. J. Health Publication Ltd., Plymouth, 2001, pp: 277-281.

INITIAL MANAGEMENT OF URINARY INCONTINENCE IN WOMEN



QUESTION 2A: Urinary incontinence (UI) may be the result of an:

- A. Overactive bladder (urgency urinary incontinence (UUI))
- B. Overactive outlet (urinary obstruction – overflow incontinence)
- C. Underactive bladder (urinary retention – overflow incontinence)
- D. Underactive outlet (stress urinary incontinence (SUI))
- E. All of the above

QUESTION 2B: Match the mostly likely patient to have each condition listed above with the clinical presentation:

- A. Overactive bladder
- B. Overactive outlet
- C. Underactive bladder
- D. Underactive outlet

QUESTION 2C: The most likely patient to have the above signs or symptoms as a primary symptom is:

- A. “Urgency” – urgency incontinence – overactive bladder
- B. Poor flow – obstruction – overactive outlet/bph
- C. Leakage with cough – stress incontinence – underactive outlet
- D. Palpable bladder – urinary retention – underactive bladder

DISCUSSION OF QUESTION TWO

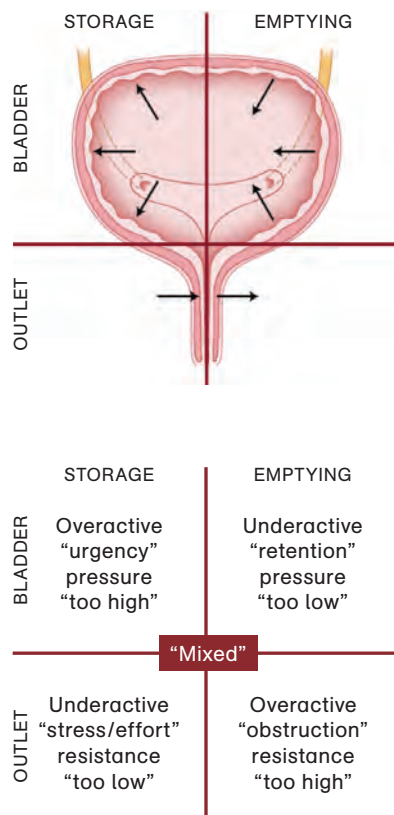
The answer to 2A is E.

The answer to 2B is: A= 1A; B=1D; C=1C; D=1B.

The answer to 2C is: A= 1A; B=1D; C=1B; D=1C.

A: Function and activity classification divides the lower urinary tract into its two anatomic areas: the bladder (detrusor) and bladder outlet (sphincter) during the physiologic functions of storage (filling on the left side of the diagram) and emptying (voiding on the right side of the diagram). The bladder or outlet activity is described as “overactive” or “underactive.” (B) In storage the bladder accommodates urine low pressure with competent outlet. In emptying the bladder contracts to completion with unobstructed outlet.

B: Patient # 1 has symptoms of urgency incontinence consistent with an overactive bladder (elevated pressure). LUTS associated with detrusor overactivity (uninhibited bladder contractions) are urgency, frequency, nocturia, and urinary urgency incontinence. Patients may present with overactive bladder dry (without urinary leakage). The treatment for overactive bladder involves behavioral intervention, pelvic floor physiotherapy, and antimuscarinic agents. Patient #2 has symptoms of “stress incontinence”. The patient loses urine with exertion due to an underactive outlet (inadequate outlet resistance). LUTS associated with poor anatomic support of the anterior vaginal wall and sphincteric mechanism in female patients or trauma to the sphincteric mechanism during prostate surgery in the male are urinary leakage with effort. Treatment for stress incontinence in the female patient is physiotherapy or “suspension” –



there are no approved medications. Treatment for the male patient is physiotherapy or an implant for sphincteric “compression”. Patient #3 has symptoms of urinary retention secondary to an underactive bladder (poor contractility). This type of urinary retention with “overflow” incontinence may be secondary to bladder overdistention, pharmacological inhibition, or a peripheral neurological lesion. Acute treatment is bladder “rest” with a foley catheter, discontinuation of anticholinergic medications, and an evaluation for acute/chronic peripheral neuropathy. In more chronic cases self intermittent catheterization may be indicated. Patient #4 has symptoms of overactive outlet (bladder outlet obstruction secondary to BPH exacerbated by an alpha-adrenergic agent). Treatment is relief of the obstruction by pharmacological or surgical means.

Stress urinary incontinence (SUI) – Underactive Outlet

Symptom: the involuntary loss of urine on effort or exertion (lift, strain, cough, sneeze)

Activity: underactive outlet

Condition: stress incontinence the involuntary loss of urine resulting from an increase in intra-abdominal pressure that overcomes the resistance of the bladder outlet in the absence of a true bladder contraction. The decrease in bladder outlet or urethral resistance may result from poor anatomic support of the bladder neck (urethral hypermobility/SUI-A or a loss of urethral function (intrinsic sphincter deficiency [ISD] [SUI-ISD]) or commonly a mixture.

Etiology: stress urinary incontinence is a condition of the bladder outlet. The most common cause in the female patient is disruption of anatomic supports or innervations to the urethral sphincter secondary to childbirth. The most common cause in the male patient is iatrogenic damage to the urinary sphincter during prostate surgery.

Clinical confusion: the patient describes the symptom of urinary loss with “activity” but the etiology of involuntary leakage is actually an uninhibited bladder contraction. SUI should have urinary loss synchronous with “effort”; similarly, many patients will describe SUI as a sensation, which is confused with “urgency”; finally, stress and urgency incontinence may coexist.

Urgency urinary incontinence (UUI) – Overactive Bladder

Symptom: the loss of urine with the sensation of urgency, voiding before the ability to toilet. Idiopathic Detrusor Overactivity, defined as overactivity when there is no clear cause. Neurogenic Detrusor Overactivity is defined as overactivity due to a relevant neurological condition. Neurogenic detrusor overactivity may be associated with decreased or absent sensation.

Activity: overactive bladder (OAB wet) – detrusor overactivity

Condition: UUI – the involuntary loss of urine resulting from an increase in bladder pressure secondary to detrusor overactivity (an uninhibited bladder contraction).

Etiology: detrusor overactivity is primarily idiopathic. Patients may demonstrate other symptoms associated with “urgency” (frequency, urgency, nocturia) without urinary loss (OAB dry). Obstruction (overactive outlet) may precipitate overactive bladder and is associated with obstruction secondary to benign prostatic enlargement. Neurogenic bladder is the result of a suprasacral spinal or intracranial neurological lesion that results in uncontrolled reflex contractions (detrusor hyperreflexia).

Clinical confusion: the patient has decreased sensation and loses urine from motor activity of the detrusor without the feeling of “urgency.” OAB is a syndrome consisting of the symptoms “urgency, with or without urgency incontinence, usually with frequency and nocturia,” suggestive of bladder overactivity but inclusive of “urgency and frequency without incontinence” OAB dry (see below)

Mixed urinary incontinence (MUI) – Overactive Bladder and Underactive Outlet

Symptom: mixed symptoms of UUI and SUI, urinary loss with effort and with urgency

Activity: OAB wet detrusor overactivity and underactive sphincter
Condition: a mixture of the conditions described above as SUI and UUI
Etiology: a mixture of the conditions noted for UUI and SUI
Clinical confusion: urinary loss may be from SUI or UUI but the predominance and bother resulting from one condition or the other may not be discernable from the history and physical examination alone, thus creating difficulty in choosing treatment for the “primary” symptom.

Urgency and frequency without incontinence – Overactive Bladder

Symptom: urgency and frequency without urinary loss
Activity: detrusor overactivity with compensatory sphincter activity or no bladder activity or abnormal afferent activity or processing (sensory)
Condition: Urgency is the complaint of a sudden compelling desire to pass urine that is difficult to defer and frequency is the complaint by the patient who considers that she voids too often by day or at night (going to bed and arising), whereas nocturia is waking at night one or more times to void preceded by and followed by sleep. “Sensory urgency” is a term that has been removed from the International Continence Society (ICS) lexicon and was used to describe the sensation of urinary urgency without a detectable rise in bladder pressure.
Clinical confusion: the classification of a moderate or strong “desire to void” without true “urgency” is unresolved. Sensory disorders of the bladder with frequency and specifically with dysuria should be evaluated as a urinary tract infection. Urgency, frequency and chronic pelvic pain (without incontinence) should be evaluated as chronic pelvic pain syndrome (see below)

Overflow incontinence – Overactive Outlet and/or Underactive bladder

Symptom: the involuntary loss of urine resulting from urinary retention with bladder overdistention. The retention (failure to empty) may result from inadequate bladder contractility or outlet obstruction (or both).
Activity: underactive bladder (retention) and/or overactive outlet (obstruction)
Condition: Urinary loss occurs when the intravesical pressure overcomes the urethral resistance as a result of bladder contractility and/or increases in intra-abdominal pressure and/or urethral relaxation.
Etiology: The most common cause of urinary retention in the male patient is outlet obstruction (overactive outlet secondary to benign prostatic hyperplasia (BPH) causing benign prostatic obstruction (BPO) from benign prostatic enlargement (BPE). The most common cause of retention in the female patient is surgery for incontinence. Poor bladder contractility is associated with peripheral neuropathies (autonomic).
Clinical confusion: the symptoms that are described may present as and mimic a mixture of stress (SUI) and urgency (OAB) complaints.

Altered bladder sensation and pain – Overactive Sensation (Pain)

Symptom: frequent voiding with or without pain; conversely, a loss of sensation. Bladder pain syndrome is defined as an unpleasant sensation (pain, pressure, discomfort) perceived to be related to the urinary bladder, associated with lower urinary tract symptom(s) of more than 6 weeks duration, in the absence of infection or other identifiable causes.
Activity: no detrusor contraction but an alteration in afferent input or processing. Sensory overactivity may be a function of up-regulation of afferents.
Condition: Bladder pain, discomfort, and pressure can be characterized by type, frequency, duration, location, and precipitating and relieving factors. Bladder sensation can be described as increased, normal, reduced, absent, or nonspecific (neurologic). Increased or decreased voiding may be correlated with the sensation.
Etiology: Urgency frequency syndrome or chronic cystitis (inflammatory/interstitial) are associated with sensory overactivity. Decreased afferent activity may result from peripheral autonomic neuropathies.
Clinical confusion: Urinary urgency and frequency without incontinence may be a product of abnormal sensation or bladder contractile activity.

The source of pelvic pain may not be the lower urinary tract. Interstitial cystitis or chronic urethritis remain diagnoses of exclusion.

Functional incontinence (Impairment of Cognition and/or Ambulation)

Symptom: the involuntary loss of urine resulting from a deficit in the ability to perform toileting functions secondary to physical or mental limitations
Activity: abnormal lower urinary tract function usually coexists with functional issues.
Etiology: Conditions which affect cognition or mobility. The patient’s primary “functional” issue may be dementia, delirium, or other forms of altered cognition; physical disability may prevent easy and rapid toilet access. These conditions often exist alone or in combination with lower urinary tract dysfunction
Clinical confusion: the underlying pathophysiology of stress, urge, or overflow incontinence may coexist, as well as difficulty in eliciting an accurate history.

Staskin D. Classification of Lower Urinary Tract Dysfunction in the Female Patient. Atlas of Bladder Disease. Ed. Staskin D. Springer Science. New York, 2010. pp 1-10.
Wein AJ. Pathophysiology and classification. Campbell-Walsh Urology, 9th ed. eds. Wein AJ, Kavoussi LR, Novick AC, et.al., Elsevier Science (Saunders). 2007: 1973-1985.
Staskin D, Wein AJ. Classification of Lower Urinary Tract Dysfunction in the Female Patient. Textbook of Female Urology and Urogynecology 3rd Edition. Eds. Cardozo L, Staskin D. Informa Healthcare. London 2010. pp 227-234.

● **QUESTION 3:** The most useful way to differentiate urgency urinary incontinence (UUI) from stress urinary incontinence (SUI) in a patient with incontinence is:

- A. History of urinary loss with effort versus urinary loss with “urgency”
- B. Assess the urinary flow by observation
- C. Provocative “cough” test
- D. Palpation of the abdomen for bladder distention
- E. A and C

● DISCUSSION OF QUESTION THREE

The answer is E.

Determining whether urine is involuntarily lost with effort or exertion, or on coughing or sneezing, is commonly used to help identify stress incontinence. For example, a patient can be asked, “Do you lose urine during sudden physical exertion, lifting, coughing, or sneezing?” To help diagnose urge incontinence, the patient is asked about the association between involuntary urinary leakage and feelings of urinary urgency. An example of such a question is “Do you experience such a strong and sudden urge to void that you leak before reaching the toilet?” A number of questionnaires exist to help differentiate these conditions in a more standardized way. Urgency incontinence is also more likely to be associated with large volume urine loss, while the volume of urine lost with episodes of stress incontinence tends to be small. However, the amount of urine lost during an incontinence episode of any type can depend on the amount of urine present in the bladder at that time. It is unusual for a male patient to have urinary loss secondary to an underactive sphincter (sphincter insufficiency or “stress incontinence”) without a prior history of prostatic surgery (radical prostatectomy or surgical treatment for benign enlargement with obstruction). When evaluating a woman with urinary incontinence, a systematic approach that includes a history, physical examination, and stress test increases the likelihood of correctly classifying the type of incontinence (for stress). The most helpful component of the assessment for determining the presence of urge incontinence is a history of urine loss associated with urinary urgency

Physical Examination.

A physical examination is an important component of the assessment, because it may detect modifiable factors or associated conditions and help determine the type of urinary incontinence. The American College of Obstetricians and Gynecologists practice guidelines (consensus and

expert opinion) and suggest that every woman presenting with symptoms of incontinence undergo a general examination during assessment for incontinence that includes a gynecological, an abdominal, a rectal, and a neurological examination. The gynecological examination includes examination of the external genitalia, vagina, and perineum to assess for excoriations, masses, prolapse, and abnormal perineal sensation. Urinary incontinence and pelvic organ prolapse are separate clinical entities that often coexist. Pelvic organ prolapse can obstruct voiding and women may have to reduce their prolapse to void. Women with pelvic organ prolapse and large postvoid residual urine volumes should be evaluated for voiding dysfunction. The rectal examination assesses for fecal impaction and rectal tone. The neurological examination focuses on the sacral nerves and lower body. Pelvic floor muscle strength can be determined by asking the patient to contract their pelvic floor muscles while the examiner performs a digital vaginal examination. Because many women do not know how to consciously contract their pelvic floor muscles, they can be instructed to contract the muscles they would use to keep from passing gas or to stop themselves from voiding.

In the male patient examination for bladder distention, a rectal exam, and a focused neurological exam may reveal retention or neuropathy. A history of prostatic surgery is more revealing than a prostate exam, unless the prostate is absent from radical surgery. The loss of urine immediately associated with effort suggests sphincteric incontinence in distinction to a larger volume non-synchronous loss of urine with effort which suggests an unsuppressed bladder contraction (urgency incontinence).

Staskin D, Kelleher C, et.al. Initial Assessment of Urinary and Faecal Incontinence in Adult Male and Female Patients. Incontinence. 4th International Consultation on Incontinence. eds. Abrams P, Cardozo L, Khoury S, Wein A. Health Publications Ltd. Paris 2009. pg 333-340.

QUESTION 4: The most useful way to differentiate disorders of urinary emptying from disorders of urinary storage is:

- Post voiding residual urine measurement
- Urinary flow rate measurement during voiding
- Bladder pressure measurement during filling
- Combined bladder pressure – urinary flow rate measurement during emptying

DISCUSSION OF QUESTION FOUR

The answer is A.

A determination of post voiding residual urine identifies the patient who does not emptying his/her bladder completely. A normal “ejection fraction” of the bladder is greater than 90% (55-70 percent for the heart!). The importance of diagnosing “good bladder emptying is that it shifts the diagnostic differential into the etiologies of incontinence associated with “poor urinary storage”. Of note, some patients may have more than one etiology for their symptoms which can be associated with bladder or outlet dysfunction. For instance, a female patient with “mixed symptoms” of overactive bladder (urgency incontinence) and underactive outlet (stress incontinence) has more than one dysfunction potentially responsible for urinary loss, but can be treated with anticholinergic medication for the component of overactive bladder if the residual urine as would be expected is low. A male patient with overactive outlet (benign prostatic obstruction) and overactive bladder (urgency, frequency, nocturia) should be treated for significant bladder outlet obstruction if present, which will be reflected in an elevated residual urine, before considering treatment for persistent bladder symptoms.

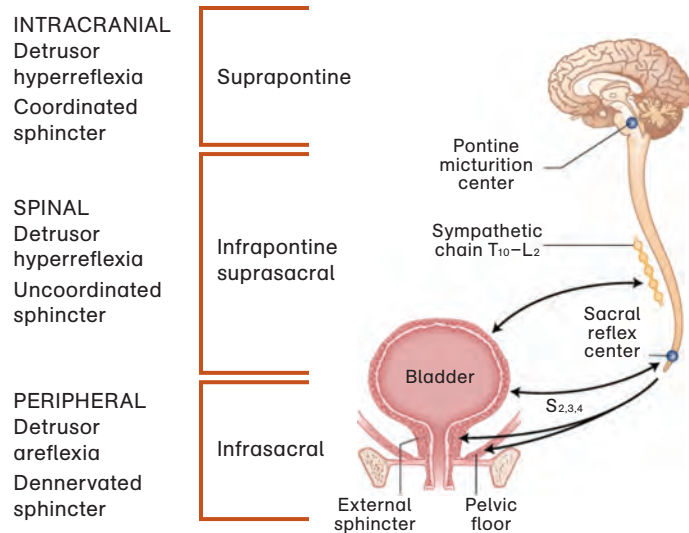
Urodynamic studies (objective laboratory measurements of bladder and outlet function) may employ flow and pressure studies during urethral catheterization to characterize bladder and bladder outlet behaviors. A measurement of urinary flow demonstrating an impaired or intermittent flow may suggest poor emptying but is not as definitive as a post-voiding residual measurement. A pressure-flow study is an excellent assessment for outflow obstruction is a high pressure-low flow dynamic is demonstrated.

QUESTION 5: Urinary incontinence (UI) associated with which one of the following neurologic lesions is associated with the greatest potential for concomitant renal damage:

- Cerebrovascular accident
- Normal pressure hydrocephalus
- Parkinson’s disease
- C6-7 spinal cord injury
- None of the above

DISCUSSION OF QUESTION 5

The answer is D.



It is best to approach neural control from the sacral area “up” to the cortical area. The bladder contracts by “reflex” after filling under control of the sacral reflex center (SRC) at S2-S4. A peripheral lesion is a non-contractile bladder. If the SRC is intact and there is spinal cord lesion above S2-S4 there will be reflex emptying without cerebral control and with a lack of coordination of the external sphincter at the level of the pontine micturition center (PMC). Intracranial (cerebral) lesions precipitate bladder overactivity by failing to inhibit reflex bladder contractions during filling but preserve PMC function and sphincter coordination. The lack of sphincter coordination during emptying results in chronic obstruction, bladder wall thickening, elevated residual urine and the potential for decreasing upper tract emptying (hydronephrosis). The presence of a lesion above the sympathetic chain outflow predisposes to autonomic dysreflexia (commonly seen in quadriplegics). NOTE: Patients with intracranial lesions will be incontinent with preserved sphincter coordination. Quadriplegics with complete lesions are at high risk for both upper tract changes and autonomic dysreflexia. Paraplegics with complete lesions are at high risk, while those with incomplete lesions and sphincter coordination are at a comparative low risk for upper tract disease. Patients with peripheral neuropathy may have a non-contractile bladder and are at risk for retention. Treatment for all groups is based on the principle of low pressure urinary storage (increasing bladder capacity surgically or pharmacologically) and intermittent self catheterization for bladder emptying. In some circumstances (self or provider cath is not available) a suprapubic tube (or urethral cath) or a procedure on the bladder outlet (sphincterotomy) is recommended.

Staskin D. Classification of Lower Urinary Tract Dysfunction in the Female Patient. Atlas of Bladder Disease. Ed. Staskin D. Springer Science. New York, 2010. pp 1-10.

Wein AJ. Pathophysiology and classification. Campbell-Walsh Urology, 9th ed. eds. Wein AJ, Kavoussi LR, Novick AC, et.al., Elsevier Science (Saunders). 2007: 1973-1985.

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ACTIVITY TITLE:	Classification of Lower Urinary Tract Symptoms (LUTS) and Urinary Incontinence (UI)
DATES VALID:	August 17, 2011 – August 17, 2012
CREDITS AVAILABLE:	1 Category 2B, AOA; 1 Category 1 <i>AMA PRA</i> ™

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QUESTION RESPONSES					
Q#	A	B	C	D	E
1	(A)	(B)	(C)	(D)	(E)
2A	(A)	(B)	(C)	(D)	(E)
2B	(A)	(B)	(C)	(D)	
2C	(A)	(B)	(C)	(D)	
3	(A)	(B)	(C)	(D)	(E)
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PROGRAM EVALUATION					
Scale:	P=Poor	F=Fair	G=Good	VG=Very Good	E=Excellent
LEARNING OBJECTIVES					P F G VG E
1	Discuss screening and identification of LUTS.				(1) (2) (3) (4) (5)
2	Identify different causes of LUTS.				(1) (2) (3) (4) (5)
3	Demonstrate an awareness of what can be accomplished in the PCP office in regards to evaluation.				(1) (2) (3) (4) (5)
4	Specify treatment options for OAB and BPH.				(1) (2) (3) (4) (5)
5	Examine when to refer for specialist evaluation.				(1) (2) (3) (4) (5)
CONTENT					P F G VG E
6	To what extent this activity is fair and balanced.				(1) (2) (3) (4) (5)
7	Likelihood that you will implement change in your practice based on information from this activity.				(1) (2) (3) (4) (5)
8	Your OVERALL rating of this activity.				(1) (2) (3) (4) (5)
PRACTICE					P F G VG E
9	How will you use the information presented to improve the care of your patients?				

SIGNATURE

DATE