Frequency, Urgency And Burning…Oh My!

Understanding Urological Conditions Accompanied By Irritative Voiding Symptoms In Females.

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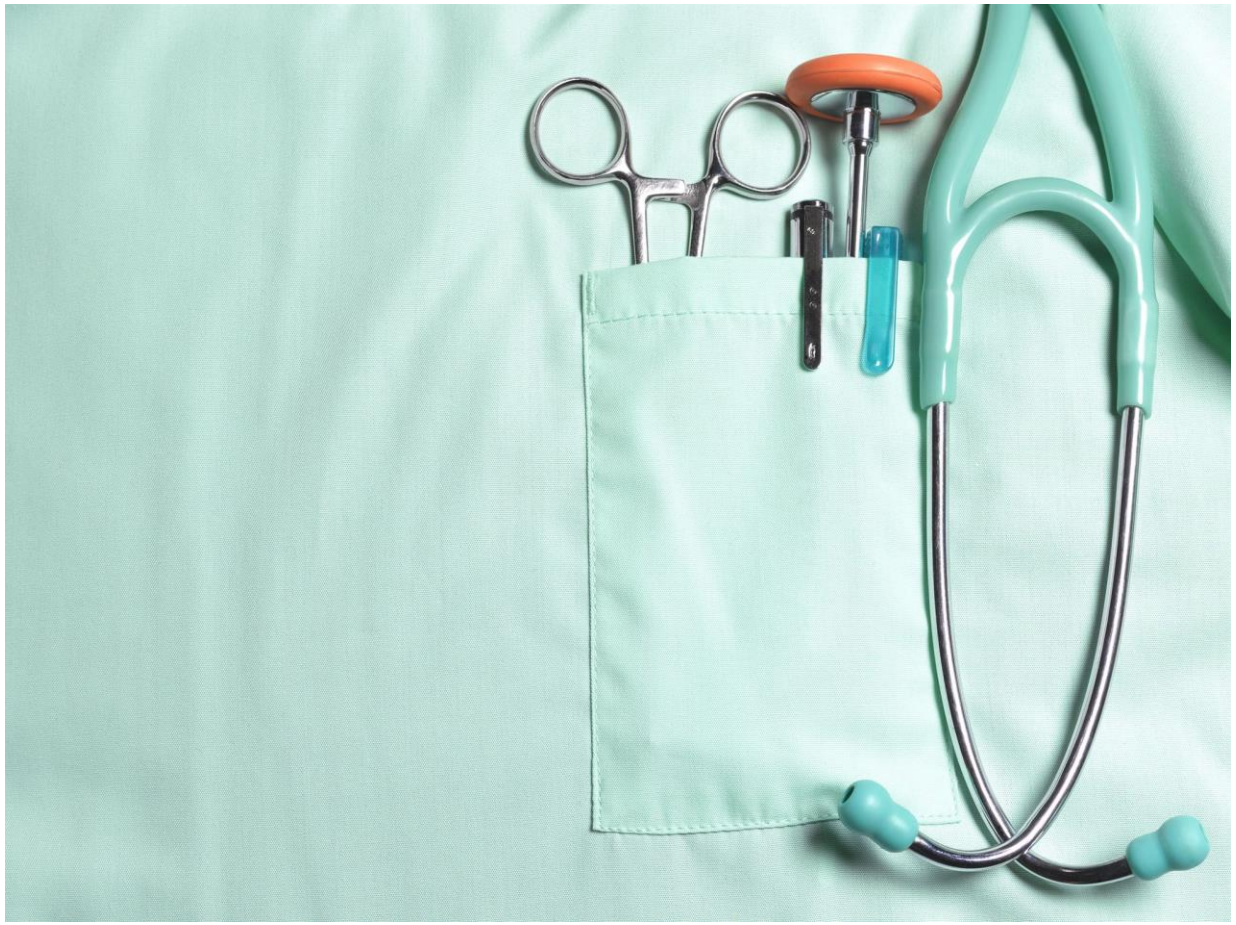
About Me

- 2011 – BSN from Creighton University
- 2018 – DNP from Creighton University
- Working in urology since 2021.
- Working in primary care since 2022.

Disclosures

- I work for Medtronic as a clinical proctor.
- This role involves providing clinical education and training.
- No conflicts of interest affect the content of this presentation.



Presentation Objectives

- Identify conditions associated with urinary irritative voiding symptoms in female patients.
- Formulate appropriate workup of irritative voiding symptoms to support accurate diagnosis.
- Understand treatment modalities for conditions associated with urinary irritative voiding symptoms.

Urinary Irritative Voiding Symptoms

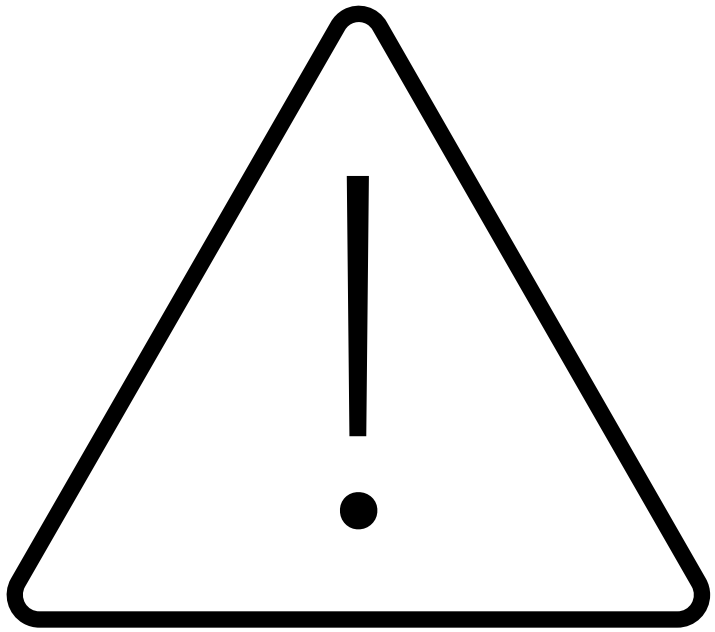
- Urgency
- Frequency
- Urethral or suprapubic burning with urination
- Urinary Incontinence
- Pelvic pain

Initial Workup

- Urinalysis
- Urine Culture
- Bladder scan
  - Caution in postmenopausal and obese patients.
- Renal Ultrasound
- CT scan abdomen and pelvis
  - Considerations for contrast vs. noncontrast

Hematuria with a negative urine culture

- Refer to urology
- Could consider ordering imaging in addition to referral.
  - Should be a CT Urogram (GU CT) unless contrast contraindicated.



Conditions Associated with Irritative Voiding Symptoms in Females.

- Incomplete bladder emptying/retention
- Urinary Tract Infection (UTI) – acute and recurrent
- Atrophic Vaginitis
- Overactive Bladder and Urge Incontinence
- Stress Incontinence
- Interstitial Cystitis
- Pelvic Floor Dysfunction

Incomplete Bladder Emptying/Urinary Retention

Incomplete Bladder Emptying/Retention

Inability to fully empty the bladder.

The exact volume is debatable with no true consensus.

>300 mL – should raise concern

Hydronephrosis or bladder stones on ultrasound/CT – concerning, urology referral

Declining GFR

•If obstruction seen on imaging

Signs/Symptoms

Urgency

Frequency

Weak Stream

Pushing or straining to urinate

Overflow incontinence

Recurrent UTIs

Commonly self-diagnosed by patients with overactive bladder (OAB).

Incomplete Bladder Emptying/Urinary Retention

- Two categories of causation:
  - Outlet obstruction
  - Poor bladder contractility

Causes of bladder outlet obstruction in females:

- Medications
  - Antipsychotics
  - Antihistamines
  - Alpha adrenergic agonists
- Non-medications
  - Urethral stricture
  - Urethral stones, tumors
  - Pelvic floor prolapse
  - Urethral diverticula
  - Prior incontinence procedures
    - Urethral bulking
    - Botox chemodenervation
    - Sling
  - Prior prolapse repair
  - Dysfunctional voiding

Causes of poor bladder contractility in females:

- Medications:
  - Anticholinergics
  - Tricyclic antidepressants
  - Beta adrenergic agonists
  - Calcium channel blockers
  - NSAIDS
  - Opioids
  - Benzodiazepines
  - Antipsychotics
- Non-medications:
  - Long standing outlet obstruction
  - Diabetes Mellitus
  - Constipation
  - Fraility
  - Spinal cord injury
  - Neurological disorders
  - Idiopathic

Incomplete Bladder Emptying/Urinary Retention Treatment

- Subjective
- Low risk patients (no signs of hydronephrosis, hydroureter, bladder stones, recurrent UTI)
  - Surveillance recommended
  - Stop any known offenders (i.e. medications)
- High risk patients (hydronephrosis, hydroureter, bladder stones, recurrent UTI, symptomatic)
  - Intermittent or chronic catheterization recommended
  - Stop any known offenders (i.e. medications)
  - Tamsulosin/Bethanechol – weak evidence
  - Sacral neuromodulation

Urinary Tract Infections

Urinary Tract Infection

- Acute Cystitis - *A culture-proven infection of the urinary tract with a bacterial pathogen associated with acute onset symptoms such as dysuria in conjunction with variable degrees of increased urinary urgency and frequency, hematuria, and new or worsening incontinence - AUA*
  - Uncomplicated
    - Healthy patient with normal urinary tract and no predisposing factors.
  - Complicated
    - Patient with one or more predisposing conditions to UTI.
      - i.e. urinary tract abnormality, immunocompromised, multi-drug resistant bacteria

Symptoms of Urinary Tract Infection

- Pain with urination
- Urgency
- Frequency
- Hematuria
- Fever/Chills

Nonqualifying symptoms

- Odor
- Cloudiness
- Pyuria
- Bacteriuria
- Color (other than hematuria)

Urine Culture

- The only proof of infection.
  - UA is not reliable for diagnosis secondary to contamination and medications such as AZO.
- Cultures showing mixed flora should be repeated.
  - Consider catheterized specimen.
- Caution with urine cultures showing Group B Strep in females.
  - Common vaginal pathogen.
  - If symptoms are not resolved with treatment this is likely not the culprit.

Treatment

- Antibiotics
  - Should always be culture based
    - No culture, no proof

Recurrent UTI prevention

- Low dose topical estrogen
  - Post and perimenopausal patients
  - Brings back lactobacillus
- D-mannose
- Cranberry
- Methenamine
  - Caution renal function
- Chronic antibiotic therapy
  - Risks and benefits
- **very important to ensure that the bacteria is CAUSE of the patient's symptoms**

Genitourinary Syndrome of Menopause (GSM)

- Symptoms that affect the genitourinary tract secondary to menopause.
- Occurs in approximately 50% of menopausal women.
- Related to estrogen deficiency.
- Symptoms include:
  - Vaginal dryness
  - Vaginal or urethral burning and irritation
  - Dysuria
  - Urinary urgency

Table 1. Signs and Symptoms of the Genitourinary Syndrome of Menopause

Body System	Objective Signs	Subjective Symptoms
Vulvovaginal	Thinning/graying of pubic hair	Dryness
	Labial atrophy/reduced subcutaneous fat	Irritation
	Tissue appears dry and pale with petechiae and may have ulcerations and/or tears	Burning
		Itching
	Loss of vaginal rugae	Discomfort
	Decreased elasticity of the vaginal tissue	
	Recurrent vaginitis	
	Discharge	
	Elevated pH	
	Prolapse	
Urinary	Urethral caruncle	Frequency
	Frequent urinary tract infections	Urgency
	Prominent urethral meatus	Dysuria
	Incontinence	
Sexual	Vaginal stenosis	Dyspareunia
	Postcoital bleeding	Decreased lubrication
	Clitoral atrophy and phimosis of the prepuce	Decreased arousal
		Decreased libido
		Decrease in sensation

GSM Treatment

- Over the counter
  - Personal Lubricants/Moisturizers
    - World Health Organization recommends osmolality not exceed 380 mOSm/kg but 1200 mOSm/Kg is acceptable.
  - Olive Oil or Coconut Oil
  - Vitamin D (oral)
    - May aid in differentiation and proliferation of vaginal epithelium.
  - Vitamin E (vaginally inserted)
    - Increases blood circulation and moisture.
  - Probiotics
    - Efficacy is questionable.

GSM Treatment

- Vaginal Estrogen
  - Systemic estrogen recommended if vasomotor symptoms in addition to GSM symptoms.
  - If the patient has only GSM symptoms vaginal estrogen is preferred.
    - Cream, Ring, Suppositories – no difference in efficacy
  - Symptoms should improve within a few weeks but can take up to 12 weeks for full effect.
  - Safety profile
    - Very low risk

Overactive Bladder and Urge Incontinence

- Overactive bladder
  - “urinary urgency, usually accompanied by frequency and nocturia, with or without urgency urinary incontinence (UUI), in the absence of urinary tract infection (UTI) or other obvious pathology.” – Cameron et. al
- Urge Incontinence
  - Urinary incontinence typically accompanied by precipitating urgency.

Treatment

- First line
  - Dietary measures
  - Timed voiding, bladder training
  - Pelvic floor therapy

Second line therapy

- Medications
  - Antimuscarinic (i.e. oxybutynin, solifenacin, tolterodine, trospium)
    - BEERS criteria
    - Potential for anticholinergic side effects
    - Typically most cost effective
  - Beta 3 agonists (i.e. mirabegron, vibegron)
    - Takes up to 4 weeks for full effect.
    - Potential for HTN with mirabegron.
    - Typically more expensive.
    - Less side effects and better tolerated.

Advanced Therapies

- Botulinum Toxin injections.
- Sacral neuromodulation.
- Tibial nerve stimulation.

Stress incontinence

- Urinary incontinence typically associated with actions that put stress on the pelvic floor (i.e. coughing, sneezing, laughing, bending, standing).

Initial evaluation of stress incontinence

- Rule out issues with emptying
  - Post void PVR
  - Ultrasound
- Pelvic exam to rule out pelvic organ prolapse
- Urodynamic studies

First line therapy

- Pelvic floor therapy
- Pessary

Second line therapy

- Surgical evaluation/referral
  - Urethral bulking
  - Sling
  - Pelvic organ prolapse repair

Interstitial Cystitis/Bladder Pain Syndrome (IC/BPS)

- "An unpleasant sensation (pain, pressure, discomfort) perceived to be related to the urinary bladder, associated with lower urinary tract symptoms of more than six weeks duration, in the absence of infection or other identifiable causes."
- Unknown whether this is a primary or secondary disorder.
- Thought to be associated with systemic pain syndromes.

Subgroups of IC/BPS

- Bladder-centric phenotypes
  - Hunner lesions
  - Small bladder capacity
  - Pain improved with instillations
- Pelvic floor phenotype
  - Pelvic floor tenderness on examination
- Systematic Symptoms
  - Widespread pain outside the pelvis
  - Chronic overlapping pain conditions
  - Widespread psychosocial difficulties
  - Widespread somatic symptoms across multiple organ systems

Psychosocial impact of IC/BPS

- Significant impact to both physical and mental health
  - Increased rate of anxiety and depression among these patients.
  - Common victims to UTI misdiagnosis/treatment.

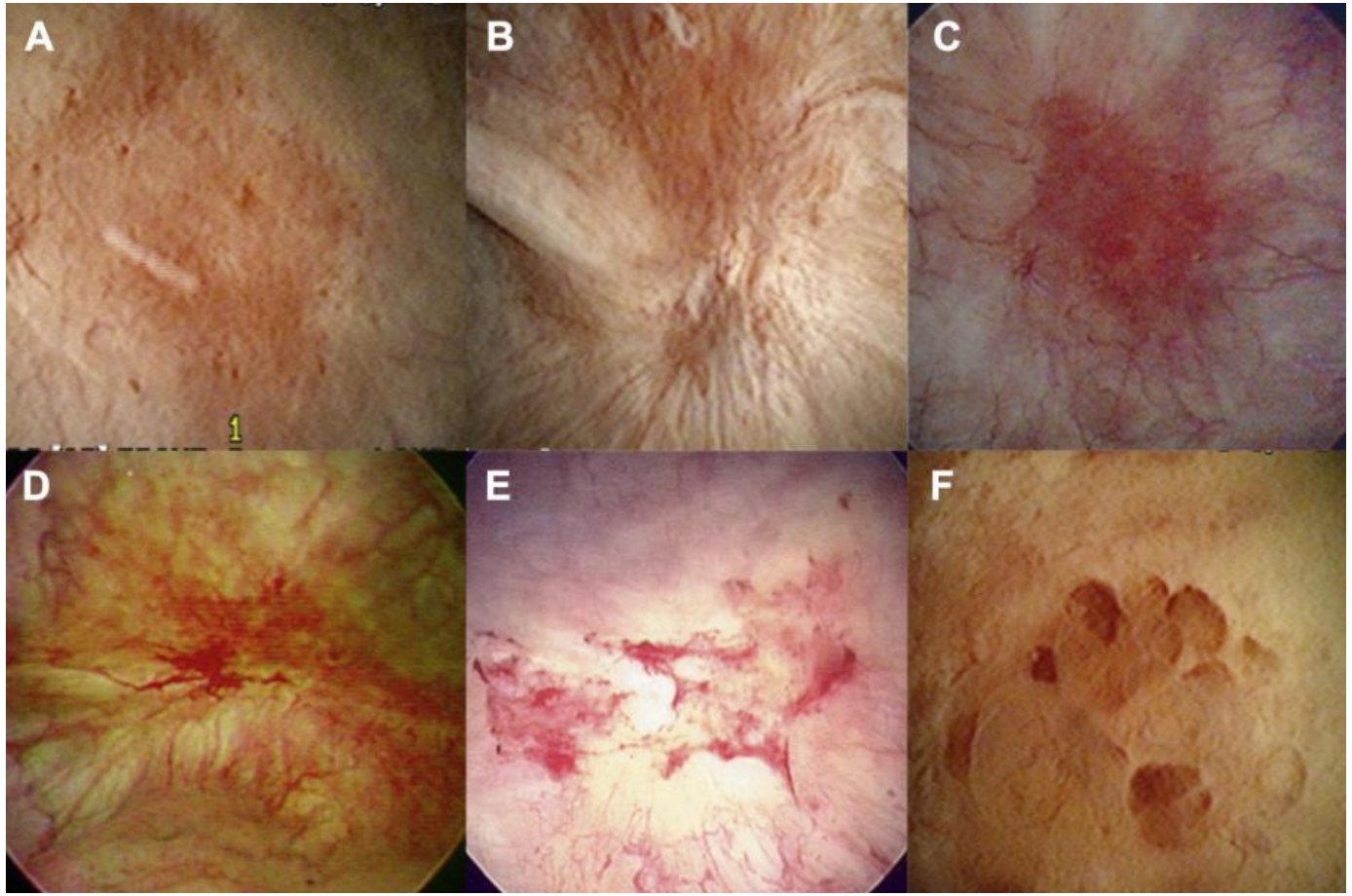
Symptoms

- Hallmark symptom: sensation of pain and pressure
  - Typically occurs with bladder filling
  - Pain or pressure is located often at the bladder and/or pelvis
  - Can also report pain in the urethra, vulva, vagina, rectum, lower abdomen and back
  - Discomfort is often worsened with certain foods and drinks.
  - Discomfort can be improved with bladder emptying.
  - Urinary urgency and frequency are common in these patients but are also symptoms of other urological conditions.
  - Historically more common in men than in women but research is limited.

Diagnosis

- IC/BPS is often a diagnosis of exclusion

Hunners Ulcerations



Treatment - nonpharmacologic

- Diet Modification
  - Avoiding bladder irritants: acidic foods, spicy foods, caffeine, carbonated beverages, tea etc.
  - Adequate hydration
  - Elimination diets have been helpful in some patients
  - Bladder/food diary to identify potential triggers.
- Stress management
- Pelvic floor therapy – especially helpful in patients with pelvic pain

Treatment- pharmacologic