

Urology:

Is the science that deals with diseases and disorders of the male GUT and the female urinary tract. It also includes the surgical diseases of the adrenal gland.

The urological Symptoms***(1) Pain******Renal Pain***

Pain of renal origin is usually located in the costovertebral angle (CVA) just lateral to the sacrospinalis muscle and beneath the 12th rib. Pain is caused by acute distention of the renal capsule, from inflammation or obstruction. The pain may radiate across the flank anteriorly toward the upper abdomen and umbilicus and may be referred to the testis or labium.

Pain due to inflammation is usually dull and steady. The pain produced by ureteral obstruction is typically colicky in nature and fluctuates in intensity with ureteral peristalsis, at which time the pressure in the renal pelvis rises as the ureter contracts in an attempt to force urine past the point of obstruction. Pain of renal origin may be associated with gastrointestinal symptoms because of reflex stimulation of the celiac ganglion and because of the proximity of adjacent organs (liver, pancreas, duodenum, gallbladder, and colon).

Ureteral Pain

Ureteral pain is usually acute and secondary to obstruction. The pain results from acute distention of the ureter and by hyperperistalsis and spasm of the smooth muscle of the ureter as it attempts to relieve the obstruction, usually produced by a stone or blood clot. The site of ureteral obstruction can often be determined by the location of the referred pain. With obstruction of the midureter, pain on the right side is referred to the right lower quadrant of the abdomen (McBurney's point) and thus may simulate appendicitis; pain on the left side is referred over the left lower quadrant and resembles diverticulitis. Also, the pain may be referred to the scrotum in the male or the labium in the female. Lower ureteral obstruction frequently produces symptoms of vesical irritability, including frequency, urgency, and suprapubic discomfort that may radiate along the urethra in men to the tip of the penis

Vesical Pain

Vesical pain is usually produced either by overdistention of the bladder as a result of acute urinary retention or by inflammation. Constant suprapubic pain that is unrelated to urinary retention is seldom of urologic origin.

Prostatic Pain

Prostatic pain is usually secondary to inflammation with secondary edema and distention of the prostatic capsule. Pain of prostatic origin is poorly localized, and the patient may complain of lower abdominal, inguinal, perineal, lumbosacral, and/or rectal pain. Prostatic pain is frequently associated with irritative urinary symptoms such as frequency and dysuria, and, in severe cases, marked prostatic edema may produce acute urinary retention.

Penile Pain

Pain in the flaccid penis is usually secondary to inflammation in the bladder or urethra, with referred pain that is experienced maximally at the urethral meatus. Alternatively, penile pain may be produced by paraphimosis, a condition in which the uncircumcised penile foreskin is trapped behind the glans penis, resulting in venous obstruction and painful engorgement of the glans penis. Pain in the erected penis is usually due to Peyronie's disease or priapism.

Testicular Pain

Acute scrotal pain may be either primary or referred (from kidney). Primary pain arises from within the scrotum and is usually secondary to acute epididymitis or torsion of the testicle or testicular appendices.

Chronic scrotal pain is usually related to noninflammatory conditions such as a hydrocele or a varicocele, and the pain is generally characterized as a dull, heavy sensation that does not radiate.

(2) Hematuria

Hematuria is the presence of blood in the urine; greater than three red blood cells per high-power microscopic field (HPF) are significant. In adults, should be regarded as a symptom of urologic malignancy until proved otherwise.

In evaluating hematuria, several questions should always be asked:

1. Is the hematuria gross or microscopic?
2. At what time during urination does the hematuria occur (beginning or end of stream or during entire stream)?
3. Is the hematuria associated with pain?
4. Is the patient passing clots?
5. If the patient is passing clots, do the clots have a specific shape?

Macroscopic or gross hematuria when the patient has seen the blood in the urine. Microscopic or Dipstick Hematuria when the identified by microscopic or dipstick testing. The chances of identifying significant pathology increase with the degree of hematuria.

Initial hematuria usually arises from the urethra. Total hematuria is most common and indicates that the bleeding is most likely coming from the bladder or upper urinary tracts. Terminal hematuria occurs at the end of micturition and is usually secondary to inflammation in the area of the bladder neck or prostatic urethra.

Pain in association with hematuria usually results from upper urinary tract hematuria with obstruction of the ureters with clots. Painless hematuria often indicates malignancy.

The presence of clots usually indicates a more significant degree of hematuria, and accordingly, the probability of identifying significant urologic pathology increases.

the presence of vermiform (wormlike) clots, particularly if associated with flank pain, identifies the hematuria as coming from the upper urinary tract

Causes of hematuria: Nearly all urological pathologies may cause hematuria (inflammation, infection, stone, cancer, cystic disease and trauma) in addition to nonurological causes (coagulation disorder, anticoagulant drugs, sickle cell disease)

(C) Lower Urinary Tract Symptoms (LUTS)

A-Irritative Symptoms (Storage Symptoms)

Frequency normal adult voids 6--8 times per day, with a volume of approximately 300 mL with each void. Urinary frequency is due either to increased urinary output (polyuria) or to decreased bladder capacity

Nocturia is nocturnal frequency. Normally, adults arise no more than twice at night to void. As with frequency, nocturia may be secondary to increased urine output or decreased bladder capacity. Frequency during the day without nocturia is usually of psychogenic origin and related to anxiety. Nocturia without frequency may occur in the patient with congestive heart failure and peripheral edema in whom the intravascular volume and urine output increase when the patient is supine.

Dysuria is painful urination that is usually caused by inflammation. This pain is usually not felt over the bladder but is commonly referred to the urethral meatus. Pain occurring at the start of urination may indicate urethral pathology, whereas pain occurring at the end of micturition (strangury) is usually of bladder origin.

B-Obstructive Symptoms (Voiding Symptoms)

1-Decreased force of urination is usually secondary to bladder outlet obstruction and commonly results from benign prostatic hyperplasia (BPH) or a urethral stricture.

2-Urgency a strong desire to urinate resulted from bladder irritability due to obstruction.

3-Hesitancy refers to a delay in the start of micturition

4-Postvoid dribbling refers to the terminal release of drops of urine at the end of micturition. This is secondary to a small amount of residual urine in either the bulbar or the prostatic urethra that is normally "milked-back" into the bladder at the end of micturition

5-Straining refers to the use of abdominal musculature to urinate

6-Retention either acute or chronic

7- Sense of residual urine

8- Interruption of urinary stream

(D) Incontinence

is the involuntary loss of urine. A careful history of the incontinent patient will often determine the etiology. Urinary incontinence can be subdivided into four categories:

1-Continuous incontinence; refers to the involuntary loss of urine at all times and in all positions. Most commonly due to a urinary tract fistula that bypasses the urethral sphincter

2-Stress incontinence; Stress urinary incontinence refers to the sudden leakage of urine with coughing, sneezing, exercise, or other activities that increase intra-abdominal pressure

3-Urge incontinence; is the precipitous loss of urine preceded by a strong urge to void.

4-Overflow urinary incontinence; (paradoxical incontinence) is secondary to advanced urinary retention and high residual urine volumes. It has been termed paradoxical incontinence because it can often be cured by relief of bladder outlet obstruction.

(E)Enuresis

Enuresis refers to urinary incontinence that occurs during sleep. It occurs normally in children up to 3 years of age but persists in about 15% of children at age 5 and about 1% of children at age 15.

(F) Pneumaturia

is the passage of gas in the urine. In patients who have not recently had urinary tract instrumentation or a urethral catheter placed, this is almost always due to a fistula between the intestine and the bladder. Common causes include diverticulitis, carcinoma of the sigmoid colon, and regional enteritis (Crohn's disease). In rare instances, patients with diabetes mellitus may have gas-forming infections, with carbon dioxide formation from the fermentation of high concentrations of sugar in the urine.

(G) Sexual Symptoms

1-Loss of Libido

2-Impotence refers specifically to the inability to achieve and maintain an erection sufficient for intercourse.

3-Anejaculation may result from several causes: (1) androgen deficiency, (2) Sympathetic denervation, (3) pharmacologic agents, and (4) bladder neck and prostatic surgery.

4-Anorgasmia is failure to reach orgasm. It is usually psychogenic or caused by certain medications used to treat psychiatric diseases

5-Premature Ejaculation: is ejaculation before, on, or shortly after vaginal penetration (before sexual partner got satisfaction)

6-Hematospermia: refers to the presence of blood in the seminal fluid. It almost always results from nonspecific inflammation of the prostate and/or seminal vesicles and resolves spontaneously, usually within several weeks

7- Infertility: inability to conceive after one year of unproductive sexual intercourse.

(H) Urethral discharge

It is the most common symptom of venereal infection. A purulent discharge that is thick, profuse, and yellow to gray is typical of gonococcal urethritis; the discharge in patients with nonspecific urethritis is usually scant and watery. A bloody discharge is suggestive of carcinoma of the urethra.

(I) Systemic symptoms

Fever and chills may occur with infection anywhere in the GU tract but are most commonly observed in patients with pyelonephritis, prostatitis, or epididymitis. Associated of urinary obstruction with fever and chills is urological emergency.