SECTION 7 ALTERATIONS IN RENAL AND URINARY TRACT FUNCTION

60e Dysuria, Bladder Pain, and the Interstitial Cystitis/Bladder Pain Syndrome

John W. Warren

Dysuria and bladder pain are two symptoms that commonly call attention to the lower urinary tract.

DYSURIA

Dysuria, or pain that occurs during urination, is commonly perceived as burning or stinging in the urethra and is a symptom of several syndromes. The presence or absence of *other* symptoms is often helpful in distinguishing among these conditions. Some of these syndromes differ in men and women.

WOMEN

Approximately 50% of women experience dysuria at some time in their lives; ~20% report having had dysuria within the past year. Most dysuria syndromes in women can be categorized into two broad groups: bacterial cystitis and lower genital tract infections.

Bacterial cystitis is usually caused by *Escherichia coli*; a few other gram-negative rods and *Staphylococcus saprophyticus* can also be responsible. Bacterial cystitis is acute in onset and manifests not only as dysuria but also as urinary frequency, urinary urgency, suprapubic pain, and/or hematuria.

The lower genital tract infections include vaginitis, urethritis, and ulcerative lesions; many of these infections are caused by sexually transmitted organisms and should be considered particularly in young women who have new or multiple sexual partners or whose partner(s) do not use condoms. The onset of dysuria associated with these syndromes is more gradual than in bacterial cystitis and is thought (but not proven) to result from the flow of urine over damaged epithelium. Frequency, urgency, suprapubic pain, and hematuria are reported less frequently than in bacterial cystitis. Vaginitis, caused by *Candida albicans* or *Trichomonas vaginalis*, presents as vaginal discharge or irritation. Urethritis is a consequence of infection by *Chlamydia trachomatis* or *Neisseria gonorrhoeae.* Ulcerative genital lesions may be caused by herpes simplex virus and several other specific organisms.

Among women presenting with dysuria, the probability of bacterial cystitis is ~50%. This figure rises to >90% if four criteria are fulfilled: dysuria and frequency without vaginal discharge or irritation. Present standards suggest that women meeting these four criteria, if they are otherwise healthy, are not pregnant, and have an apparently normal urinary tract, can be diagnosed with uncomplicated bacterial cystitis and treated empirically with appropriate antibiotics. Other women with dysuria should be further evaluated by urine dipstick, urine culture, and a pelvic examination.

MEN

Dysuria is less common among men. The syndromes presenting as dysuria are similar to those in women but with some important distinctions.

In the majority of men with dysuria, frequency, urgency, and/or suprapubic, penile, and/or perineal pain, the prostate is involved, either as the source of infection or as an obstruction to urine flow. Bacterial prostatitis is usually caused by *E. coli* or another gram-negative rod, with one of two presentations. *Acute bacterial prostatitis* presents with fever and chills; prostate examination should be gentle or not performed at all, as massage may result in a wave of bacteremia. *Chronic bacterial prostatitis* presents as recurrent episodes of bacterial cystitis; prostate examination with massage demonstrates prostatic bacteria and leukocytes. *Benign prostatic hyperplasia* (BPH) can obstruct urine flow, with consequent symptoms of weak stream, hesitancy, and dribbling. If a bacterial infection develops behind the obstructing prostate, dysuria and other symptoms of cystitis will occur. Men whose symptoms are consistent with bacterial cystitis should be evaluated with urinalysis and urine culture.

Several sexually transmitted infections can manifest as dysuria. Urethritis (usually without urinary frequency) presents as a urethral discharge and can be caused by *C. trachomatis*, *N. gonorrhoeae*, *Mycoplasma genitalium*, *Ureaplasma urealyticum*, or *T. vaginalis*. Herpes simplex, chancroid, and other ulcerous lesions may present as dysuria, again without urinary frequency.

For further discussion, see Chaps. 162 and 163.

EITHER WOMEN OR MEN

Other causes of dysuria may be found in patients of either sex. Some cases are acute and include lower urinary tract stones, trauma, and urethral exposure to topical chemicals. Others may be relatively chronic and attributable to lower urinary tract cancers, certain medications, Behçet's syndrome, reactive arthritis, a poorly understood entity known as *chronic urethral syndrome*, and interstitial cystitis/bladder pain syndrome (see below).

BLADDER PAIN

Studies indicate that patients perceive pain as coming from the urinary bladder if it is suprapubic in location, alters with bladder filling or emptying, and/or is associated with urinary symptoms such as urgency and frequency. Bladder pain occurring acutely (i.e., over hours or a day or two) is helpful in distinguishing bacterial cystitis from urethritis, vaginitis, and other genital infections. Chronic or recurrent bladder pain may accompany lower urinary tract stones; bladder, uterine, cervical, vaginal, urethral, or prostate cancer; urethral diverticulum; cystitis induced by radiation or certain medications; tuberculous cystitis; bladder neck obstruction; neurogenic bladder; urogenital prolapse; or BPH. In the absence of these conditions, the diagnosis of interstitial cystitis/bladder pain syndrome (IC/BPS) should be considered.

INTERSTITIAL CYSTITIS/BLADDER PAIN SYNDROME

Most clinicians with outpatient practices see undiagnosed cases of IC/BPS. This chronic condition is characterized by pain perceived to be from the urinary bladder, urinary urgency and frequency, and nocturia. The majority of cases are diagnosed in women. Symptoms wax and wane for months or years or possibly even for the rest of the patient's life. The spectrum of symptom intensity is broad. The pain can be excruciating, urgency can be distressing, frequency can be up to 60 times per 24 h, and nocturia can cause sleep deprivation. These symptoms can disrupt daily activities, work schedules, and personal relationships; patients with IC/BPS report less life satisfaction than do those with end-stage renal disease.

IC/BPS is not a new disease, having first been described in the late nineteenth century in a patient with the symptoms mentioned above and a single ulcer visible on cystoscopy (now called a *Hunner's lesion* after the urologist who first reported it). Over the ensuing decades, it became clear that many patients with similar symptoms had no ulcer. It is now appreciated that only up to 10% of patients with IC/BPS have a Hunner's lesion. The definition of IC/BPS, its diagnostic features, and even its name continue to evolve. The American Urological Association has defined IC/BPS as "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."