

Urologic Emergencies

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KEYWORDS

- Urologic emergencies • Acute urinary retention • Infected nephrolithiasis
- Paraphimosis • Penile fracture • Priapism • Fournier gangrene • Testicular torsion

KEY POINTS

- When evaluating a potential urologic emergency, the internist should have a high level of suspicion for a serious underlying illness or injury.
- Diagnosis often relies heavily on clinical history and physical examination, with imaging playing an increasingly vital role.
- Urologic consultation should be requested early if surgical intervention is thought to be necessary.

ACUTE URINARY RETENTION

Acute urinary retention (AUR) will be encountered by most health care professionals, and it should be distinguished from chronic urinary retention, which is usually due to the same cause but is less emergent because it develops over time.

Clinical Presentation

AUR can be secondary to obstructive causes or a dysfunctional (atonic) bladder. When obstructive, it presents an overwhelming majority of the time in men rather than in women. Most commonly, this is due to the presence of a large, obstructing prostate secondary to benign prostatic hyperplasia (BPH). Less common obstructive causes include narrowing of the urethra due to urethral strictures or bladder neck contractures, which are usually consequences of prior urologic surgery, prior Foley catheterization, straddle injuries or other trauma, sexually transmitted infections, or congenital causes such as hypospadias.

When AUR is due to a dysfunctional bladder, an inciting factor is usually present. This factor tends to be a side effect of a medication, especially an anticholinergic or opioid, or a side effect of general/locoregional anesthesia.¹ Although this cause is most common in women presenting with AUR, such medications in men can

Disclosure Statement: No disclosures for either author.

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Med Clin N Am ■ (2017) ■-■

<https://doi.org/10.1016/j.mcna.2017.10.013>

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exacerbate an already existing obstructive condition such as BPH. A typical example would be postoperative urinary retention after surgery.

Therefore, typical presenting symptoms of AUR include a history of difficulty with urination or prior urinary retention episodes, a lack of urination for several hours or longer, frequent urination of small amounts, overflow incontinence, abdominal or suprapubic pain, and a suprapubic mass on palpation caused by the distended bladder.

It is important to separate this from patients experiencing gross hematuria who can develop clots, which may be passed painfully in the urine. Clots accumulating in the bladder can obstruct the outlet and prevent passage of any urine leading to retention as well.

Last, neurologic illnesses can be responsible for retention via inability of the bladder to sufficiently contract. A thorough history and physical examination should always be performed to rule out spinal cord injury, compression, multiple sclerosis, Parkinson disease, or cauda equina syndrome as the cause of AUR.

Diagnosis

The diagnosis of AUR relies heavily on history-taking and the physical examination. Additional diagnostic tools, such as ultrasonic bladder scan, to determine urine volume can be used. It should be noted that the presence of ascites would lead to a false-positive reading by the bladder scanner because it will simply detect this intra-abdominal fluid. A bedside bladder ultrasound can also be performed to visualize the distended bladder and, if present, blood clots.

Treatment

Primary management of AUR involves emergent bladder drainage with insertion of a Foley catheter. The type of Foley used should be based on the clinical situation as detailed in later discussion (**Fig. 1**). In all cases, an α 1-blocker such as tamsulosin should be started and continued for a minimum of 3 days before Foley removal because this has been demonstrated to increase the chances of a successful voiding trial.²⁻⁴ In practice, however, a period of 1 to 2 weeks appears to be associated with a higher rate of successful decatheterizations.

In an uncomplicated case of AUR, a standard 16-French Foley catheter should be inserted under sterile technique. If resistance is met and the patient is an older man with BPH, increasing the Foley size to 18 or 20 French may be more successful because increased rigidity allows better passage of the enlarged prostate. A Coudé catheter with its curved tip also facilitates placement because the tip is designed to align itself with the curve in the bulbar urethra, making it more likely to pass between obstructing prostatic lobes. If resistance is consistently encountered, further attempts should be abandoned because a false urethral passage may form. Urology consultation should follow, because a flexible bedside cystoscopy may be necessary to place a guidewire into the bladder over which a Foley catheter can be advanced.

In a younger patient in whom BPH is unlikely and a urethral stricture is suspected (typically a history of congenital hypospadias, pelvic trauma, or radiation), decreasing the Foley size to 12- or 14 French often allows placement. Again, if resistance is consistently encountered, flexible cystoscopy by urology should be performed at the bedside to allow for immediate dilation of the stricture.

If gross hematuria or clots are present, placement of a larger 22- or 24-French 3-way Foley catheter for continuous bladder irrigation is recommended. Initially, irrigation by hand should be attempted with a 60-mL syringe to remove clots. If the irrigation fluid

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