Critical Urologic Skills and Procedures in the Emergency Department

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KEYWORDS

• Urologic procedures • Urethral catheterization • Manual testicular detorsion
• Dorsal penile nerve block

KEY POINTS

- Emergency physicians must be familiar with urologic emergencies; they should be dexterous performing urologic procedures to maintain function while avoiding complications.
- Among critical skills and procedures performed by emergency practitioners are urethral and suprapubic catheterization, manual testicular detorsion, dorsal penile nerve block, cavernosal aspiration, dorsal slit, and paraphimosis reduction.
- Depending on the urologic condition, emergent consultation and/or close follow-up with a urologist are highly encouraged to assure proper patient care and satisfaction.

URETHRAL CATHETERIZATION

Acute urinary retention (AUR) is a common urologic condition that often presents to an emergency department (ED) as a sudden inability to pass urine accompanying with lower abdominal pain.[1] It increases in incidence with age and most often occurs in men over the age of 60 years.[1–3] Generally, the causes of AUR can be classified into 3 categories. The first category relates to any event that increases the resistance

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to the urine flow, including, for example, benign prostatic hyperplasia (BPH), urethral stricture, or detrusor sphincter dysfunction. Second, AUR may result from an interruption of either the sensory innervation of the bladder wall or the motor supply of the detrusor muscle. It is most commonly seen in spinal cord injuries, progressive neurologic diseases, diabetic neuropathy, and cerebrovascular accidents.[1,2,4] The third mechanism relates to any situation that either permits or causes the bladder to overdistend.[1] Overdistension of the bladder is most commonly encountered by the pharmacologic use of opiates, anticholinergic administration, and the generalized increase in α-adrenergic activity that exists after surgery.[1]

The initial management of AUR of urine is prompt relief of retention and pain by catheterization of the bladder.[1,5–7] There are no uniform guidelines for bladder decompression but most urologists prefer urethral catheterization for the initial management of AUR.[8]

Box 1 summarizes the most common indications for urethral catheterization in the ED.

As in any other procedure performed in the ED, urethral catheterization has several contraindications; among them are exposure to a recent urologic surgery, pelvic or abdominal trauma, and blood in urethral meatus or perineal hematoma. Patients with mentioned conditions should not have urethral catheterization as initial procedure for bladder decompression.[8]

The equipment is available as a commercial nonreusable kit. **Box 2** lists the content of the catheterization tray.

Urethral catheterization must be done using sterile technique, always taking into consideration that male and female patients have special anatomic landmarks. After careful exposure, use an antiseptic solution soaked into cotton balls to cleanse the exposed meatus and surrounding tissues. Cleaning should be done in circular motion starting on the urethral meatus and proceeding outward.[2,9]

In uncircumcised men, total control of the penile foreskin is paramount to ensuring success. Retract the available foreskin to its fullest extent proximal to the glans penis.[2,9] The appropriately sized catheter previously lubricated with jelly should be gently passed into the urethra and upward into the bladder. An appropriate initial Foley size is a 14F to 18F Foley catheter. Inject male or female urethra with 5 mL to 7 mL of 2% viscous lidocaine or other similar anesthetic lubricant to help urethral distention and anesthesia. After passing the catheter, slowly inflate the balloon with 10 mL of tap water. Obvious resistance or patient discomfort on balloon inflation should signal potential erroneous urethral positioning and mandates re-evaluation.[4] After successful catheter passage and Foley balloon inflation, slowly withdraw the catheter until the approximation of the balloon with the bladder neck precludes further withdrawal.[1,2,9] After catheterization, reduce the penile foreskin to its normal anatomic position to

Box 1 **Indications for urethral catheterization**
AUR
Hydronephrosis
Continuous bladder irrigation
Neurogenic bladder
Bedridden patients