

## **CATHETERIZATION (MALE AND FEMALE)**

### **INTRODUCTION**

Urethral catheterization is a routine medical procedure that facilitates direct drainage of the urinary bladder. Catheters may be inserted as an in-and-out procedure for immediate drainage, left in with a self-retaining device for short-term drainage (eg, during surgery), or left indwelling for long-term drainage for patients with chronic urinary retention. Patients of all ages may require urethral catheterization, but patients who are elderly or chronically ill are more likely to require indwelling catheters, which carry their own independent risks.

### **LEARNING OBJECTIVES.**

At the end of session students should know how to take consent explain the procedure, benefits, risks, complications, and alternatives of the procedure, should take care of patient privacy, should know the proper position for procedure, what would be the equipment required and should always follow the principles of procedure.

### **EQUIPMENT REQUIRED.**

Equipment includes a commercial single-use urethral catheterization tray.  
The contents of the catheterization tray are as follows:

- Povidone-iodine
- Sterile cotton balls
- Water-soluble lubrication gel
- Sterile drapes
- Sterile gloves
- Urethral catheter
- Prefilled 10-mL saline syringe
- Urinometer connected to a collection bag

### **TYPES.**

#### **Catheter sizes**

- Adults - Foley (straight tip) catheter (16-18F)
- Adult males with obstruction at the prostate - Coudé tip (18 F)
- Adults with gross hematuria - Foley catheter (20-24F) or 3-way irrigation catheter (20-30F)

- Children - Foley; to determine size, divide child's age by 2 and then add 8
- Infants younger than 6 months - Feeding tube (5F) with tape.

### Catheter materials:

- Latex
- Silastic (pure silicone or silicone-coated)
- Silver alloy
- Antibiotic-impregnated

### PROCEDURE

#### MALE:

- Explain the procedure, benefits, risks, complications, and alternatives to the patient or the patient's representative.
- Position the patient supine, in bed, and uncover the genitalia.
- Open the catheter tray and place it on the gurney in between the patient's legs; use the sterile package as an extended sterile field.
- Open the iodine/chlorhexidine preparatory solution and pour it onto the sterile cotton balls.
- Open a sterile lidocaine 2% lubricant with applicator or a 10-mL syringe and sterile 2% lidocaine gel and place them on the sterile field.
- Don the sterile gloves and use the nondominant hand to hold the penis and retract the foreskin (if present). This hand is the nonsterile hand and holds the penis throughout the procedure.
- Use the sterile hand and sterile forceps to prep the urethra and glans in circular motions with at least 3 different cotton balls.
- Use the sterile drapes that are provided with the catheter tray to create a sterile field around the penis.
- Using a syringe with no needle, instill 5-10 mL of lidocaine gel 2% into the urethra. Place a finger on the meatus to help prevent spillage of the anesthetic lubricant. Allow 2-3 minutes before proceeding with the urethral catheterization.
- Hold the catheter with the sterile hand or leave it in the sterile field to remove the cover. Apply a generous amount of the nonanesthetic lubricant that is provided with the catheter tray to the catheter.
- While holding the penis at approximately 90° to the gurney and stretching it upward to straighten out the penile urethra, slowly and gently introduce the

- catheter into the urethra. Continue to advance the catheter until the proximal Y-shaped ports are at the meatus.
- Wait for urine to drain from the larger port to ensure that the distal end of the catheter is in the urethra. The lubricant jelly-filled distal catheter openings may delay urine return. If no spontaneous return of urine occurs, try attaching a 60-mL syringe to aspirate urine. If urine return is still not visible, withdraw the catheter and reattempt the procedure (preferably after using ultrasonography to verify the presence of urine in the bladder).
  - After visualization of urine return (and while the proximal ports are at the level of the meatus), inflate the distal balloon by injecting 5-10 mL of distilled water avoid normal saline, to inflate the balloon. Inflation of the balloon inside the urethra results in severe pain, gross hematuria, and, possibly, urethral tear.
  - Gently withdraw the catheter from the urethra until resistance is met. Secure the catheter to the patient's thigh with a wide tape. Creating a gutter to elevate the catheter from the thigh may increase the patient's comfort. If the patient is uncircumcised, make sure to reduce the foreskin, as failure to do so can cause paraphimosis.

#### **FEMALE:**

- Place the patient in the supine position with the knees flexed and separated and feet flat on the bed, about 60 cm apart. If this position is uncomfortable, instruct the patient either to flex only one knee and keep the other leg flat on the bed, or to spread her legs as far apart as possible. A lateral position may also be used for elderly or disabled patients.
- With the thumb, middle and index fingers of the non-dominant hand, separate the labia majora and labia minora. Pull slightly upward to locate the urinary meatus. Maintain this position to avoid contamination during the procedure.
- With your dominant hand, cleanse the urinary meatus, using forceps and chlorhexidine soaked cotton balls. Use each cotton ball for a single downward stroke only.
- Place the drainage basin containing the catheter between the patient's thighs.
- Pick up the catheter with your dominant hand.
- Insert the lubricated tip of the catheter into the urinary meatus.
- Advance the catheter about 5-5.75 cm, until urine begins to flow then advance the catheter a further 1-2 cm.



- Note: If the catheter slips into the vagina, leave it there to assist as a landmark. With another lubricated sterile catheter, insert into the urinary meatus until you get urine back. Remove the catheter left in the vagina at this time.
- Attach the syringe with the sterile water and inflate the balloon. It is recommended to inflate the 5cc balloon with 7-10cc of sterile water, and to inflate the 30cc balloon with 30-35cc of sterile water.
- Improperly inflated balloons can cause drainage and leakage difficulties.
- Gently pull back on the catheter until the balloon engages the bladder neck.

### **INDICATIONS:**

It may be used for diagnostic purposes (to help determine the etiology of various genitourinary conditions) or therapeutically (to relieve urinary retention, instill medication, or provide irrigation).

#### **Diagnostic indications:**

- Collection of uncontaminated urine specimen
- Monitoring of urine output
- Imaging of the urinary tract

#### **Therapeutic indications:**

- Acute urinary retention (eg, benign prostatic hypertrophy, blood clots)
- Chronic obstruction that causes hydronephrosis
- Initiation of continuous bladder irrigation
- Intermittent decompression for neurogenic bladder
- Hygienic care of bedridden patients

### **Contraindications:**

Urethral catheterization is contraindicated in the presence of traumatic injury to the lower urinary tract (eg, urethral tear). This condition may be suspected in male patients with a pelvic or straddle-type injury. Signs that increase suspicion for injury are a high-riding or boggy prostate, perineal hematoma, or blood at the meatus. When any of these findings are present in the setting of possible trauma, a retrograde urethrogram should be performed to rule out a urethral tear prior to placing a catheter into the bladder.

### **Complications:**

- Infections, including urethritis, cystitis, pyelonephritis, and transient bacteremia
- Paraphimosis, caused by failure to reduce the foreskin after catheterization
- Creation of false passages
- Urethral strictures
- Urethral perforation
- Bleeding

**THE END**