LESSON ASSIGNMENT

LESSON 4  Urinary System Diseases/Disorders

LESSON ASSIGNMENT  Paragraphs 4-1 through 4-8.

LESSON OBJECTIVES  After completing this lesson, you should be able to:

4-1. Identify the purposes of and indications for urinary catheterization.

4-2. Identify the procedures for performing a urinary catheterization.

4-3. Identify the proper procedures for maintaining surgical aseptic technique.

SUGGESTION  After completing the assignment, complete the exercises at the end of this lesson. These exercises will help you to achieve the lesson objectives.
LESSON 4

URINARY CATHETERIZATION

4-1. INTRODUCTION

Sometimes the homeostasis of the urinary system becomes upset, making the normal function of micturition impossible. There may be a need then for catheterization. Health care providers must strive to make this a safe, efficient, and non-traumatic experience for the patient.

4-2. PURPOSES OF CATHETERIZATION

There are a number of reasons why catheterization may be performed. Included are the following:

a. Obtain a sterile urine specimen.

b. Measure the amount of residual urine in the bladder.

c. Relieve a distended bladder in the patient who is unable to void.

d. Provide continuous drainage or irrigation.

e. Administer medications such as a chemotherapeutic solution.

f. Measure the urinary output.

g. Prepare a patient for a surgical procedure or obstetrical delivery (childbirth).

h. Assist the patient following surgery.

4-3. INDICATIONS FOR CATHETERIZATION

Indications for catheterization include the following:

a. The patient's bladder is severely distended.

b. Urinary output is severely decreased.

c. There is a significant outflow obstruction.

d. The patient is in shock or pre-shock status.

e. The patient has an acute spinal cord injury.
4-4. GENERAL PRECAUTIONS

Because both the bladder and the urethra are easily injured and highly susceptible to infection, it is important to remember several precautions in the performance of this procedure.

a. Aseptic Technique. Aseptic technique is essential. Each catheterization is a potential source of infection if not carried out properly. Most cases of cystitis that develop after catheterization are because of improper catheterization technique. Cystitis is difficult to cure and causes increased pain for the patient.

b. Lubricated Catheter. The catheter must be well lubricated (unless made of silicone) prior to insertion. Lubrication reduces friction and trauma to the mucous membrane lining of the urethra and the bladder.

c. Principles of Insertion. The catheter is inserted only far enough to enter the bladder. Since the adult male urethra is usually about six inches long, it is usually sufficient to insert the catheter about seven inches. The female urethra is about 1 and one half inches long, extending from the bladder to an external opening between the clitoris and the opening of the vagina. A two-inch insertion of the catheter should suffice in the adult female.

d. Skillful Handling of Equipment. A medical specialist who is skillful in handling the equipment can avoid trauma to the patient by being gentle. Use only mild pressure. Never force a catheter into place. If more than normal resistance is met, report the difficulty to the doctor. In these cases, which are unusual, dilation (expansion) of the urethra may be necessary.

4-5. CATHETERIZATION PROCEDURE

Follow this procedure.

a. Check the doctor's orders.

b. Gather equipment. Assemble this equipment:

   (1) Catheter, in the appropriate size (the size you ordered).

   (2) Drainage bag.

   (3) Sterile gloves.

   (4) Water soluble lubricant.

   (5) Cleansing agent.
(6) Cotton balls or sterile 4 inch by 4 inch pads.

**NOTE:** Cotton balls or 4 by 4-inch pads soaked in a cleansing agent can be used as antiseptic wipes.

(7) Forceps.

(8) Nonallergic tap.

(9) Sterile solution to inflate balloon.

(10) Sterile specimen container, if indicated.

(11) Sterile drapes.

(12) Collection basin.

**NOTE:** If you are using a commercially prepared catheter set, the items shown in figure 4-1 will be in the set.

![Figure 4-1. Foley catheter set up.](image-url)
c. Explain the procedure to the patient. This procedure may be embarrassing to the patient and cause him some anxiety. It is, therefore, very important to explain to the patient what you are going to do. Tell the patient that the procedure will not be painful but that he will feel pressure as the catheter is inserted.

d. Provide for the patient's privacy. Provide privacy by drawing curtains around an area or closing a hall door.

e. Wash your hands.

f. Do these pre-performance steps.

(1) Move the patient to the side of the bed nearest you. Raise the bed to working height to avoid back strain while you are working. Lower the side rail, if necessary, on the side where you are working.

(2) Position the patient. Help the patient into the dorsal recumbent position (patient on his back with his lower limbs flexed and rotated outward).

(3) Insertion technique for an indwelling catheter.

(a) Remove the drainage system from the bag.

(b) Attach the bag to the bed frame.

(c) Bring the end of the drainage tubing up between the side rail and the mattress.

(d) Place the end of the drainage tubing so that it is convenient to reach and won't fall off the mattress during the procedure.

NOTE: These steps are not performed when a commercial pack is used.

(4) Open the sterile catheter tray.

(5) Don sterile gloves.

(6) Pick up the plastic-coated drape.

(7) Grasping the drape at the top (with the plastic side away from you), fold the of the drape over your gloved hands to make a cuff.

(8) Place the drape, with the plastic side down, on the bed between the patient's legs. Slip the cuffed edge under the patient's buttocks. Pull your hands out.
(9) If desired, pick up the fenestrated drape and place it over the patient's genitalia.

(10) Place a sterile tray on the sterile drape between the patient's legs.

(11) If you are obtaining a specimen, remove the lid from the specimen container and place the lid on the sterile drape.

(12) Squeeze a small amount of sterile lubricant into the catheter tray.

(13) If you are inserting an indwelling catheter, attach the filled syringe to the lumen valve of the catheter. Check the balloon patency.

(14) Prepare antiseptic cleansing solution.

(15) Cleanse the patient. Cleansing the area properly is very important in order to prevent infection. Urinary catheterization is responsible for a high percentage of nosocomial infections. (Nosocomial infection = infection acquired in a treatment facility.)

(a) Cleansing a female patient.

1. Separate the labia with your nondominant hand.

2. Place the thumb and forefinger between the labia minora.

3. Separate the labia and pull up.

4. With your dominant hand using the forceps to hand antiseptic wipes, cleanse the far labia from the clitoris toward the anus with the wipe. Discard the used wipe.

5. With another wipe, cleanse the near labia. Discard that used wipe.

6. With another wipe, cleanse down the center directly over the meatus. Discard the used wipe.

7. Throughout the procedure, keep the labia spread.

(b) Cleansing a male patient.

1. Support the penis with your nondominant hand.
2. Using forceps to handle the antiseptic wipes, cleanse the penis in a circular motion from the meatus toward the base of the penis. Discard the used wipe.

3. Repeat this process at least twice.

g. Insert a catheter in a female. See figure 4-2.

   (1) Pick up the catheter with your dominant hand. Hold the catheter about three inches from its tip.

   (2) Lubricate the tip of the catheter. Keep the remainder of the catheter coiled into the palm of your hand.

   (3) Ask the patient to breathe through her mouth.

   (4) Gently insert the catheter (downward and toward the back) about two inches or until urine begins to flow. **DO NOT** insert the catheter more than two inches.

   (5) Release the labia and hold the catheter securely with your nondominant hand.

   (6) If the vagina is inadvertently catheterized, **DO NOT** reuse the catheter. Assemble fresh equipment and attempt the procedure again.

Figure 4-2. Female catheterization.
h. Insert a catheter in a male. Catheterization of a male differs from a female primarily in positioning and cleansing. The tray and equipment are the same. The principles of aseptic technique must be maintained. The preparation of materials to be taken to the patient's bedside are the same. Follow the steps listed in paragraph 4-5a through c with these exceptions: place the patient in a supine position with his legs extended and place a moisture-proof pad across his upper thighs. See figure 4-3. Then follow this procedure.

(1) Pick up the catheter with your dominant hand about three inches from the tip. With your last three fingers, hold the distal end of the catheter in the palm of your hand.

(2) Lubricate the tip of the catheter.

(3) Draw the penis upward and forward at a 60 to 90 degree angle to the patient's legs.

(4) Have the patient breathe through his mouth.

(5) Insert the tip of the catheter into the urethra. Grasp the catheter and gently insert seven to eight inches or until resistance is met.

(6) Gently advance the catheter until urine flows.

(7) Lower the penis and hold the catheter securely with your non-dominant hand. Rest your hand on the patient's pubis for support.

(8) Place the other end of the catheter in the collection basin.

Figure 4-3. Male catheterization.
4-6. **OBTAIN A SPECIMEN**

If ordered to obtain a specimen, follow this procedure:

a. Place the specimen container in the collection basin.

b. Pinch the catheter with your nondominant hand.

c. Pick up the drainage end of the catheter and hold it over the specimen container.

d. Unclamp your fingers and allow approximately 30 cc of urine to drain into the container.

e. Re-pinch the catheter and place the drainage end into the collection basin.

f. Allow the urine flow to resume.

g. Place the specimen container on the table and replace the lid.

4-7. **INDWELLING CATHETER**

An indwelling (retention) catheter is ordered to permit continued drainage of the urinary bladder without repeated catheterization. The catheter commonly used is a self-retaining urethral catheter (Foley type). This catheter has a double lumen, with one opening for drainage and the other for inflation of the retention device (a small balloon at the tip of the catheter). After insertion of an indwelling catheter, perform these steps:

a. Inflate the balloon with the proper amount of solution from the syringe.

b. Tug gently on the catheter to make sure the balloon is inflated sufficiently to retain the catheter in place.

c. Attach drainage tubing from the collection system to the catheter without contaminating either. (With a commercially prepared catheterization set, the catheter comes connected to the collection system.)

d. The patient's facial expression is a good indication of whether or not balloon was inflated within the urethra.
4-8. CONCLUDING STEPS OF CATHETERIZATION

a. Remove your gloves.

b. Tape the catheter to the patient. For a female, tape the catheter to the inner aspect of the thigh. For a male, tape the catheter to the abdomen if ordered by the doctor or tape it to the inner thigh.

c. Clean the genital area.

d. Reposition the patient. Be sure the patient is safe and comfortable.

e. Report and record the procedure.

Continue with Exercises

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EXERCISES, LESSON 4

INSTRUCTIONS. Answer the following exercises by writing the answer in the space provided.

After you have completed all of these exercises, turn to "Solutions to Exercises" at the end of the lesson and check your answers. For each exercise answered incorrectly, reread the material referenced with the solution.

1. List four purposes of catheterization.

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

2. Reducing friction and trauma to the mucous membrane lining of the urethra and the bladder are two reasons to____________________________________ a catheter before insertion.

3. You meet more than normal resistance when inserting a catheter.

What should you do?

________________________________________________________________________
4. When you are explaining the catheterization process to a patient, tell him that inserting the catheter will not be ________________________, but he will feel ________________________________ as the catheter is inserted.

5. The first four steps in the catheterization procedure are to:
   a. Check ____________________________________________________.
   b. Gather ____________________________________________________.
   c. Explain ___________________________________________________.
   d. Provide ____________________________________________________.

6. Catheterization of a male differs from catheterization of a female primarily in two ways. They are ____________________________________________.
   and ________________________________________________________.

7. After inserting a Foley catheter (an indwelling catheter), you inflate the ________________________________ to keep the catheter in place.

   Check Your Answers on Next Page
SOLUTIONS TO EXERCISES, LESSON 4

1. You are correct if you listed any four of the following:
   - Obtain a sterile urine specimen.
   - Measure the amount of residual urine in the bladder.
   - Relieve a distended bladder in the patient who cannot void.
   - Provide continuous drainage or irrigation.
   - Administer medications.
   - Measure urinary output.
   - Prepare a patient for surgery or childbirth.
   - Help a patient after surgery.  (para 4-2a through h).

2. Lubricate catheter.  (para 4-4b)

3. **DO NOT** force the catheter in place.  Report the difficulty to a doctor.  
   (para 4-4d)

4. Painful.
   Pressure as the catheter is inserted.  (para 4-5c)

5. a. Check the doctor's orders.
   b. Gather equipment.
   c. Explain the procedure to the patient.
   d. Provide for the patient's privacy.  (para 4-5a through d)

6. Positioning.
   Cleansing.  (para 4-5h)

7. Balloon.  (para 4-7)