Urinery Catheter

Catheterization

- In patients with a urologic disorder or marginal kidney function, care must be taken to ensure that urinary drainage is adequate and that kidney function is preserved.
- When urine cannot be eliminated naturally and must be drained artificially, catheters may be inserted directly into the:-

A- bladder.

B –ureter .

C -renal pelvis.

Catheters vary in :-

1-size,

2- shape,

3- length,

4-material,

5- configuration(arrangement)

The type of catheter used depends on its purpose.

catheterization

- A patient should be catheterized only if necessary, because it commonly leads to UTI.

Indwelling Catheters

- When an indwelling catheter cannot be avoided, a closed drainage system is essential. This drainage system is designed to prevent any disconnections, there by reducing the risk of contamination.

TYPES

- Triple-lumen catheters are commonly used after transurethral prostate surgery .
- This system has a triple-lumen indwelling urethral catheter attached to a closed sterile drainage system.
- With the triple-lumen catheter, urinary drainage occurs through one channel.

- The retention balloon of the catheter is inflated with water or air through the second channel, and the bladder is continuously irrigated with sterile irrigating solution through the third channel.

- The spout (or drainage port) of any urinary drainage bag can become contaminated when opened to drain the bag.
- Bacteria enter the urinary drainage bag, multiply rapidly, and then migrate to the drainage tubing, catheter, and bladder.
- By keeping the drainage bag lower than the patient's bladder and not allowing urine to flow back into the bladder, this risk is minimized.

Supra pubic catheterization

allows bladder drainage by inserting a catheter or tube into the bladder through a suprapubic (above the pubis) incision or puncture .

The catheter suprapubic drainage tube is then threaded into the bladder and secured with sutures or tape, and the area around the catheter is covered with a sterile dressing.

- The catheter is connected to a sterile closed drainage system, and the tubing is secured to prevent tension on the catheter.
- This may be a temporary measure to divert(transfer) the urine flow from the urethra as in the following case

1- when the urethral route is impassable (because of injuries, strictures, prostatic obstruction),

2- after gynecologic or other abdominal surgery (bladder dysfunction)

3- occasionally after pelvic fractures.

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- Suprapubic bladder drainage may be maintained continuously for several weeks. When the patient's ability to void is to be tested, the catheter is clamped for 4 hours, during which time the patient attempts to void. After the patient voids, the catheter is unclamped, and the residual urine is measured.

- If the amount of residual urine is less than 100 mL on two separate occasions (morning and evening), the catheter is usually removed. However, if the patient complains of pain or discomfort, the suprapubic catheter is usually left in place until the patient can void successfully.

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- Suprapubic drainage offers certain advantages. Patients can usually void sooner after surgery than those with urethral catheters, and they may be more comfortable. The catheter allows greater mobility, permits measurement of residual urine without urethral instrumentation, and presents less risk of bladder infection.

- The suprapubic catheter is removed when it is no longer required, and a sterile dressing is placed over the site.
- The patient requires liberal amounts of fluid to prevent encrustation around the catheter. Other potential problems include the formation of bladder stones, acute and chronic infections, and problems collecting urine.

- A wound care specialist/enterostomal therapist, also referred to as a wound-ostomy-continence nurse, may be consulted to assist the patient and family in selecting the most suitable urine collection system and to teach them about its use and care.

Nursing Management During Catheterization

- Assessing the Patient and the System
- For patients with indwelling catheters, the nurse assesses the drainage system to ensure that it provides adequate urinary drainage. The color, odor, and volume of urine are also monitored

- An accurate record of fluid intake and urine output provides essential information about the adequacy of renal function and urinary drainage.
- The nurse observes the catheter to make sure that it is properly anchored(rasia), to prevent pressure on the urethra at the penoscrotal junction in male patients, and to prevent tension and traction on the bladder in both male and female patients.

- Patients at high risk for UTI from catheterization need to be identified and monitored carefully. These include women; older adults; and patients who are debilitated, malnourished, chronically ill, immunosuppressed, or have diabetes. They are observed for signs and symptoms of UTI: cloudy malodorous urine, hematuria, fever, chills, anorexia, and malaise. The area around the urethral orifice is observed for drainage and excoriation(pressure). Urine cultures provide the most accurate means of assessing a patient for infection.

Preventing Infection

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- Certain principles of care are essential to prevent infection in patients with a closed urinary drainage system . The catheter is a foreign body in the urethra and produces a reaction in the urethral mucosa with some urethral discharge. Vigorous cleansing of the meatus while the catheter is in place is discouraged because the cleansing action can move the catheter back and forth, increasing the risk of infection.

- To remove obvious encrustations(crust) from the external catheter surface, the area can be washed gently with soap during the daily bath. The catheter is anchored as securely as possible to prevent it from moving in the urethra. Encrustations arising from urinary salts may serve as a nucleus for stone formation; however, using silicone catheters results in significantly less crust formation.

- A liberal fluid intake, within the limits of the patient's cardiac and renal reserve, and an increased urine output must be ensured to flush the catheter and to dilute urinary substances that might form encrustations.
- Urine cultures are obtained as prescribed or indicated when monitoring the patient for infection; many catheters have an aspiration (puncture) port from which a specimen can be obtained.

- Bacteriuria is considered inevitable in patients with indwelling catheters; therefore, controversy(difference) remains about the usefulness of taking cultures and treating asymptomatic bacteriuria, because overtreatment may lead to resistant strains of bacteria. Continual observation for fever, chills and other signs and symptoms of systemic infection is necessary; these symptoms are generally treated

Minimizing Trauma

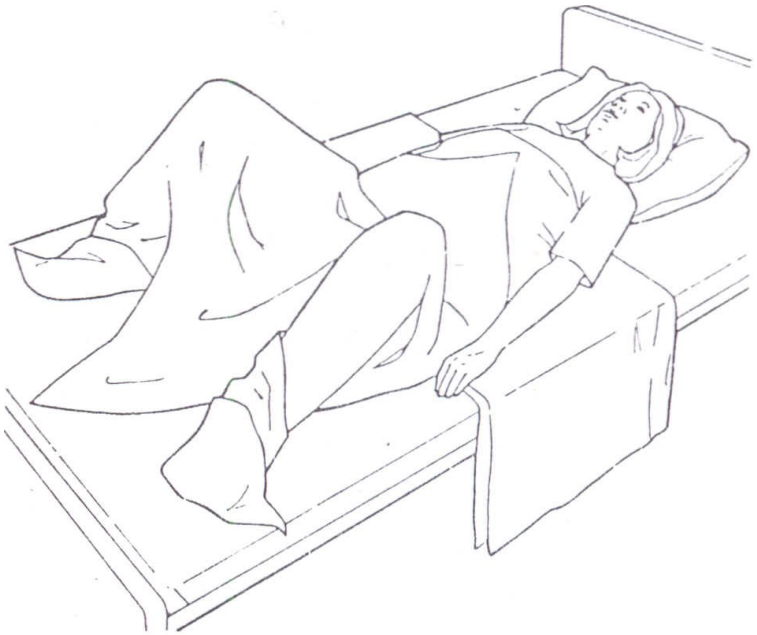
- Trauma to the urethra can be minimized by:
- Using an appropriate-sized catheter
- Lubricating the catheter adequately with a water-soluble lubricant during insertion
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- Inserting the catheter far enough into the bladder to prevent trauma to the urethral tissues when the retention balloon of the catheter is inflated
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- Manipulation of the catheter is the most common cause of trauma to the bladder mucosa in the catheterized patient. Infection then inevitably occurs when urine invades the damaged mucosa.

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- Special care should be taken to ensure that any patient who is confused does not remove the catheter with the retention balloon still inflated, because this could cause bleeding and considerable injury to the urethra.

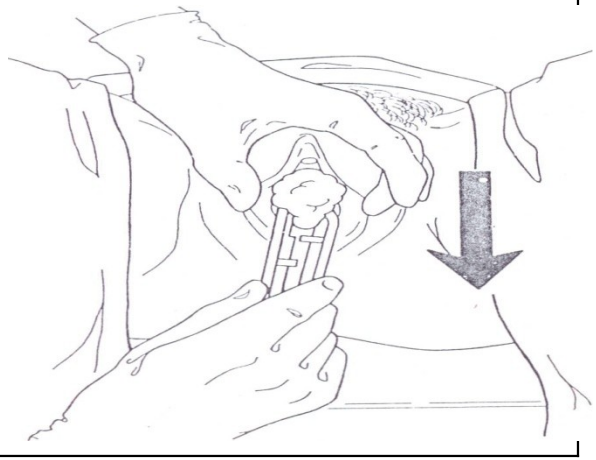
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- When teaching the patient how to perform self-catheterization, the nurse must use aseptic technique to minimize the risk of cross-contamination. However, the patient may use a “clean” (nonsterile) technique at home, where the risk of cross-contamination is reduced. Either antibacterial liquid soap or povidone-iodine (Betadine) solution is recommended for cleaning urinary catheters at home. The catheter is thoroughly rinsed with tap water

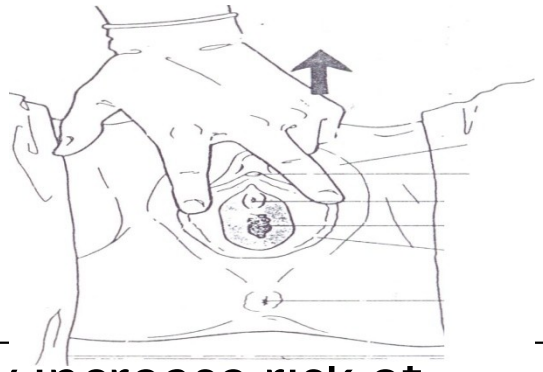
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- After removal, the catheter is cleaned, rinsed, and wrapped in a paper towel or placed in a plastic bag or case. Patients who follow this routine should consult a primary health care provider at regular intervals to assess urinary function and to detect complications.
- If the patient cannot perform intermittent self-catheterization, a family member may be taught to carry out the procedure at regular intervals during the day.

1. Assist the client to a supine position with knees flexed and thighs externally rotated. Pillows can be used to support the knees and elevate the buttocks.	Raising the pelvis gives the nurse a better view of the urinary meatus
2. place water proof or bed pan under the clients buttocks	To avoid contamination of the bed linens

1. Drape the client. Use a bath blanket to cover the chest and abdomen. Pull the client's gown up over her hips. Cover her legs and feet with the bed sheet or another blanket. Place it diagonally on the client with a corner around	To maintain privacy with exposing preneum 
2. Put hands on sterile gloves	To maintain sterility.

1. At the bedside, open the sterile kit and the catheter, if it is packaged separately, and don the sterile gloves the kit will be placed between the client's thighs.	To decrease risk of contamination
2. Drape the client with the sterile drapes.	To attain complete sterile field
3. Lubricate the insertion tip of the catheter .	Water-soluble lubricant facilitates insertion of the catheter by reducing friction.

1. Separate the labia majora with the thumb and index or other finger of one hand and clean the labia minora on each side using forceps and cotton balls soaked in antiseptic	The hand that touches the client· becomes contaminated. It remains in position exposing the urinary meatus, while the other hand remains sterile holding the sterile forceps. Cleaning from anterior to posterior cleans from the area least contamination to the area of greatest contamination. 

1. Expose the urinary meatus adequately by retracting the tissue of the labia minora in an upward (anterior) direction.	Keeping the labia a part prevents the risk of contaminating the urinary meatus. 
2. Inspect the tissues for excoriation around the urinary meatus, swelling of the urinary meatus, or the presence of discharge around the urinary meatus	As they may increase risk of complication

Gently insert the catheter into the urinary meatus about 5 cm (2 in.) for an adult, 2.5 cm (1 in.) for a small child, or until urine flows. Insert the catheter in the direction of the urethra. If the catheter meets resistance during insertion, do not force it. Ask the client to take deep breaths. If this does not relieve the resistance, discontinue the procedure, and report the problem .	Forceful pressure exerted against the urethra can produce trauma. Deep breaths by the client may relax the external sphincter.

When the urine flows. Clamp the catheter and connect the urine bag.	To avoid leakage of urine

Fixed the catheter by using 15-30 ml sterile solution

Clean side working.

Wash hand

Record finding

Complications of catheter:

1- Injury to the urethra caused by rough insertion of the catheter.

2-Urinary tract infection.

3- Injury to the bladder caused by incorrect insertion of the catheter.

REMOVAL OF RETENTION CATHETER

Purpose

- Follow common steps
- Identify patient
- Explain procedures
- Collect equipment
- Wash hands
- Provide privacy
- Stand at right side
- Elevate level of bed
- Put side rail down at working area

cont

Start bladder training program

2-Clamp catheter until patient have diseur to urinate

3-Release clamp to empty bladder

4- Collect the equipments

-clean gloves

-clamp

-paper tissues

-syringe size 20 ml

-cleansing set

5. Provide privacy

6.*Elevate bed level and put down side rail

Cont

7-Put patient in dorsal recumbent position

8- Drape patient

9- Clamp catheter at balloon end

10- Place paper towel between patient thigh to receive catheter when it being remove

11- Demonstrate correct techniques of removal

-Insert needle into balloon port correctly

Withdraw fluid from balloon

Cont

-Pull gently catheter to ensure balloon is deflated completely

-Continuous pull catheter and allow it to fall into paper towel

12-Measure urinary output into collection bag

13- Wash perineum

14- Follow after care

- Cover patient
- Put side rail up
- Put bed level down
- Wash hands

15-Record

Final assessment