Urinary catheterisation involves the insertion of a tube into the bladder using aseptic technique (Dougherty and Lister, 2015). The procedure is carried out for a variety of reasons, including to:

- Address acute or chronic urinary retention;
- Empty the bladder, for example before pelvic surgery;
- Accurately measure urinary output in patients who are acutely ill;
- Irrigate the bladder, for example following surgery;
- Bypass an obstruction such as a urethral stricture;
- Administer drugs directly into the bladder;
- Carry out bladder function tests;
- Improve comfort for patients receiving end-of-life care;
- Relieve incontinence and maintain skin integrity when all other conservative continence management strategies have been attempted (Dougherty and Lister, 2015; Royal College of Nursing, 2012).

**Complications associated with catheterisation**

Catheterisation is associated with a number of complications including:

- Catheter-associated urinary tract infection (CAUTI);
- Tissue damage;
- Bypassing and blockage.

The risk of complications means catheters should only be used after considering other continence management options, and should be removed as soon as clinically appropriate (Loveday et al, 2014).

**Preparation**

A thorough risk assessment should be carried out before inserting a catheter. As with all procedures, where possible the patient’s informed consent should be obtained and documented following a discussion of the benefits and risks of catheterisation, and its effects on lifestyle and sexual relationships (Prinjha and Chapple, 2013; RCN, 2012).

**Female catheterisation**

Female urethral catheterisation is a skilled procedure (RCN, 2012) and before carrying it out you should be aware of the following:

- National and local policies relating to catheterisation;
- The anatomy and physiology of the female lower urinary tract and continence issues, including normal micturition and voiding dysfunction;
- Care and support of the patient including informed consent, respect, privacy and dignity, and use of a chaperone where required;
- Indications for female urethral catheterisation, the procedure and possible complications;
- Materials and equipment required, including types of catheters, drainage systems, lubrication gels;

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**Box 1. Anaesthetic and lubricating gels in female patients**

The use of anaesthetic gels for catheterisation is well recognised in male patients but there is controversy over their use in female patients. EPIC (Loveday et al, 2014) and Royal College of Nursing (2012) guidance do not differentiate between male and female patients. Loveday et al (2014) recommend that an “appropriate lubricant from a sterile single-use container” is used for catheterisation. Many practitioners use lubricant gels with a topical anaesthetic (lidocaine 2%), but local policies should be followed.

**Aesthetic gels and female patients**

There is evidence to suggest that:

- Pain is reduced in females when an anaesthetic gel is used before catheterisation (Yates, 2015);
- Use of an anaesthetic dilates the urethral folds, making catheter insertion easier (Dougherty and Lister, 2015);
- Trauma can occur during catheterisation, which increases the risk of infection, but using single-use lubrication gels with or without anaesthetic can reduce these risks (Loveday et al, 2014).

**Using anaesthetic gels**

Anaesthetic gels should be:

- Instilled directly into the patient’s urethra at least five minutes before catheterisation to have an anaesthetic effect (Dougherty and Lister, 2015); if a plain aqueous gel is used the catheter can be inserted immediately;
- Used with caution in older people and those who have cardiac dysrhythmias (Yates, 2015).

Lidocaine is a topical drug and local medicines administration policy should be followed. As with any drug, it is essential to check for allergies before use (Dougherty and Lister, 2015).
Catheter selection
Indwelling catheterisation should be undertaken using Foley urethral catheters; these have a self-retaining balloon that, when filled with water or solution provided by the manufacturer, remains in the bladder.

The correct catheter for individual patients depends on factors such as the likely duration of use, and the catheter material type, diameter, length and balloon size.

For short-term use (less than 28 days) an uncoated latex, PVC, polytetrafluoroethylene (PTFE), or silver alloy catheter should be used; if a latex-based catheter is being considered, the patient should be checked for latex allergy. For longer-term use all-silicone, silicone elastomer or hydrogel-coated catheters should be used.

Female-length catheters should be used routinely for female patients who are mobile. These are more discreet than standard-length catheters and are less likely to cause trauma or infections in female patients as movement in and out of the urethra is reduced (Dougherty and Lister, 2015). In these cases, a longer standard-length catheter can become caught between the thighs in patients who are obese, confined to bed or wheelchair users, and this can lead to soreness (Dougherty and Lister, 2015). In these cases, a longer standard-length catheter can be used to avoid skin damage and improve patient comfort.

For routine drainage a 10ml balloon size should be used; this is usually inflated with 10ml of sterile water. Some catheters are supplied with a pre-filled syringe of glycerine solution or a pre-filled 10ml balloon of sterile water.

The health professional undertaking catheterisation is responsible for selecting a suitable catheter and using it in accordance with the manufacturer’s instructions (RCN, 2012).

The procedure
1. Discuss the procedure with the patient, explaining any associated risks or benefits, to gain valid informed consent. Document this in the patient’s notes. Check for allergies to the lubricating or anaesthetic gel (Yates, 2015) (Box 1). Screen the bed to ensure privacy and maintain dignity.

2. Wash your hands and clean a trolley for the procedure, according to local policy.

3. Obtain the equipment needed to perform the female catheterisation procedure (Fig 1a), following aseptic non-touch technique (ANTT) guidance (www.antt.org). This equipment should include:

- Sterile pack suitable for catheterisation (receiver, low-linting swabs, gallipots, disposable towels);
- Sterile gloves;
- Cleansing fluid;
- Syringe and sterile water for non-prefilled catheters;
- Sterile individual antiseptic/lubricating gel;
- Disposable apron;
- Appropriate catheter;
- Drainage system/catheter valve.

Assemble the equipment on the trolley and take it to the patient’s bedside.

4. Help the patient remove relevant clothing (ie underwear and/or pyjama bottoms) as necessary. Ensure she is not unnecessarily exposed by covering her thighs and genital area with a towel until you are ready to begin the procedure. Use a protective covering for bed linen to keep the bed dry.

5. Help the patient into a supine position with her legs bent and knees apart (Fig 1b).

6. Wash and dry your hands. Put on a plastic apron and open the catheterisation pack using ANTT.

7. Open additional equipment using ANTT. Leave the urinary catheter in its inner sterile plastic protective wrapping until the time of insertion, to protect it from potential physical and environmental contamination. Remove the towel covering the patient’s genital area.
8. Wash your hands and put on sterile gloves. Place a sterile towel under the patient's buttocks and across the thighs; this creates a sterile field (Dougherty and Lister, 2015).

9. Using low-linting swabs, separate the labia with your non-dominant hand so you can see the urethral meatus.

10. Hold the labia open and, with your dominant hand, clean the urethral meatus with 0.9% sterile sodium chloride (Loveday et al, 2014) in downward movements towards the anus, using single strokes (Fig 1c). This reduces the risk of CAUTI.

11. Remove the cap from the lubricating/anaesthetic gel and insert the nozzle into the urethra (Fig id). Squeeze the gel into the urethra, remove the nozzle and discard. If you are using an anaesthetic gel, leave it for approximately five minutes, or according to the manufacturer's instructions, to take effect. Box 1 outlines further relevant information. If you are using a plain aqueous lubricating gel without anaesthetic you can continue with the procedure immediately.

12. When the anaesthetic gel has taken effect, wipe away any excess, dispose of the gloves, wash and dry your hands and put on new sterile gloves.

13. Place a receiver containing the catheter on the sterile towel between the patient's legs and open the catheter but leave it in the sterile packaging to reduce the risk of contamination. Hold the labia open.

14. Holding the catheter in your dominant hand, introduce the tip into the urethral orifice in a slightly upward and backward direction, feeding it out of the sterile packaging (this adds a further layer of physical protection for the duration of the insertion procedure). Insert the catheter approximately 5-6cm (Fig 1e). The direction and length of catheter inserted relates to the anatomy of the female genitourinary tract (Fig 2) (Dougherty and Lister, 2015). If the patient experiences any pain or discomfort, stop the procedure and seek medical advice.

15. Once urine starts to drain, insert the catheter slightly to ensure the catheter is in the bladder and is secure (Dougherty and Lister, 2015).

16. Gently inflate the balloon with 10ml of sterile water or solution, according to the manufacturer's directions (Fig 1f). For pre-filled balloons remove the clip and gently squeeze the reservoir of sterile water. Observe the patient for any signs of discomfort as inflation should be pain-free.

17. Once the balloon is inflated, withdraw the catheter slightly to ensure the catheter is in the bladder and is secure (Dougherty and Lister, 2015).

18. If the catheter is not already attached to a drainage bag, attach it to either a drainage system or catheter valve as required (see Parts 3 and 4 of this catheter series).

19. Make the patient comfortable. Help her get dressed if required and ensure the bed is clean and dry.

20. Dispose of equipment in a clinical waste bag according to local policy. Wash your hands.

21. Fully document the procedure including:
   - Reason for insertion;
   - Date and time of catheterisation;
   - Catheter type;
   - Length;
   - Balloon size and volume of water inserted;
   - Batch/lot number;
   - Manufacturer;
   - Expiry date;
   - Meatal cleansing solution;
   - Lubricant;
   - Name and signature of health professional and any problems encountered on insertion;
   - Date of removal/change.

If it is the patient's first catheterisation, the urine output should be measured and recorded on insertion to help monitor renal function and fluid balance. The volume also provides important information about bladder capacity in patients who have urinary retention (Dougherty and Lister, 2015).

22. Check the patient is comfortable and give her information on the maintenance and care of the catheter and drainage system.

Professional responsibilities
This procedure should be undertaken only after approved training, supervised practice and competency assessment, and in accordance with local policies/protocols. NT

References