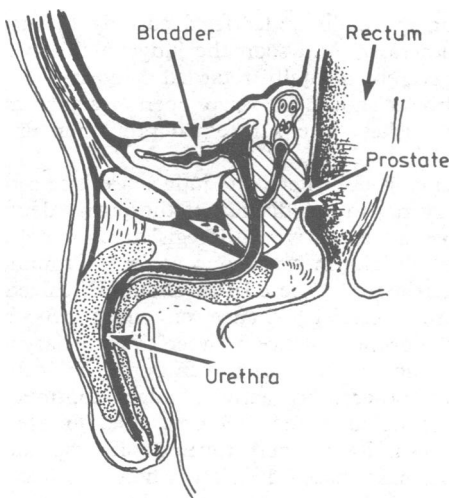


Procedures in Practice

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URETHRAL CATHETERISATION

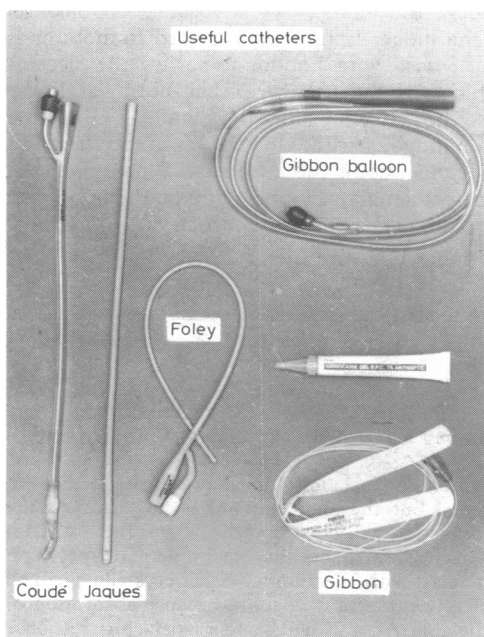


Urethral catheterisation is not to be undertaken lightly and should be performed only by staff who have been properly instructed in the necessary technique. Catheterisation may be used intermittently or continuously, each method having its own specific indications.

Intermittent catheterisation may be (a) for diagnostic purposes: either to measure residual urine or to introduce contrast media in radiography of the urinary tract; or (b) for therapeutic purposes: in the hypotonic, neurogenic, or decompensated bladder to permit adequate emptying, especially when managing chronic urinary infection.

Continuous catheterisation may be short term to relieve acute or chronic retention of urine before prostatectomy, or long term when general poor health prevents prostatectomy (rarely) or mental deterioration and urinary incontinence make a permanent indwelling catheter the most acceptable method of treatment.

Catheters

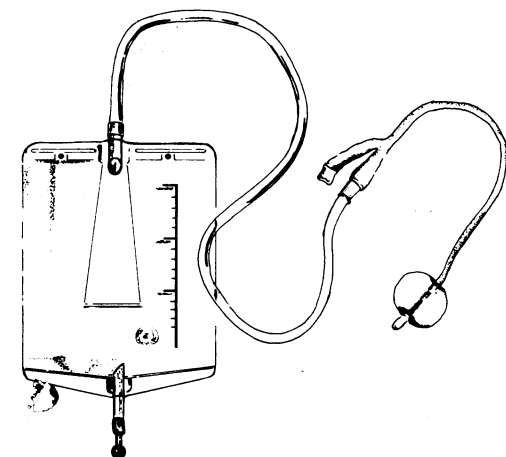
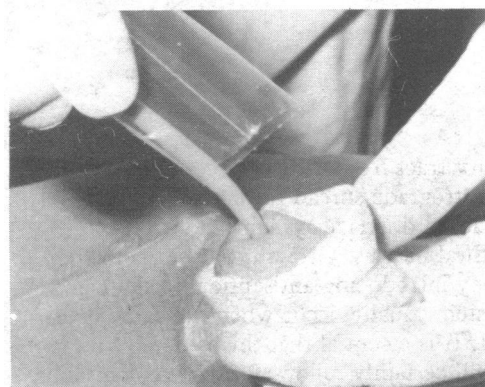
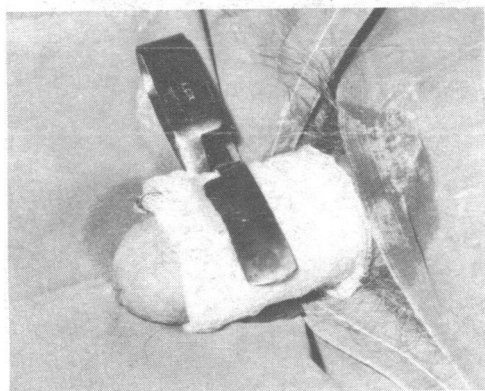
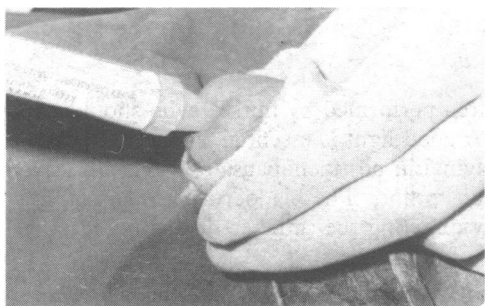


Which catheter you put in depends on what you expect to get out. When you expect the urine to be clear and do not have to leave the catheter in afterwards you should use the softest, narrowest, and cheapest catheter available. The disposable Jaques catheter is quite suitable for this purpose. Indwelling catheters are usually retained by a balloon and should be biologically inert to prevent urethral irritation. Latex is usually well tolerated, and the newer polyvinylchloride catheters are said to be non-irritant.

When blood clot or debris has to be washed out use a plastic or armoured latex catheter, as this will not collapse when suction is applied. If irrigation of the bladder is required a three-channel catheter should be used, but remember that the third channel narrows the lumen of the catheter.

In retention a small Foley catheter of 12-14 French gauge will usually be suitable, but in men with a large prostate or prominent bladder neck a smaller (8-10 French gauge) Gibbon catheter, which is more resilient, will often go in more easily. For long-term drainage a larger catheter (18-20 French gauge) made of silicone rubber should be used. These catheters are said to be more comfortable and require less frequent changing as fewer encrustations develop.

Procedure in men



Absolute asepsis in technique, adequate light, and the utmost care in passing the catheter are essential. The patient should be resting comfortably on his back on a table or bed, with his legs separated slightly to accommodate the sterile receptacle for the urine collection. Explain to the patient what you are about to do and reassure him. Use sedation if necessary. Gloves and mask should be worn: this will remind everyone that it is an aseptic procedure and will keep it so should you have to change catheters or use an introducer.

The prepuce (if present) is fully retracted and, together with the glans and separated meatus, is thoroughly cleansed with an antiseptic solution—for example, 0.5% aqueous chlorhexidine. Sterile drapes are placed around the penis, which is wrapped in a sterile gauze swab soaked in the antiseptic solution. This makes the penis easier to hold and keeps the foreskin retracted during the procedure.

A gel (15 ml) containing 1% lignocaine and 0.5% chlorhexidine is introduced into the urethra and retained for five minutes by using a sterile penile clamp. The lignocaine anaesthetises the urethra and lubricates it for passage of the catheter. Chlorhexidine inhibits the growth of any bacteria carried into the urethra and bladder by the catheter. (*Note:* lignocaine is absorbed through the mucosa and should not be used in quantities of more than 15 ml or strengths greater than 1%.)

It is useful at this point to check that you have all that you require on the catheter trolley. The time spent doing this will allow the lignocaine to work and ensure a smooth catheterisation.

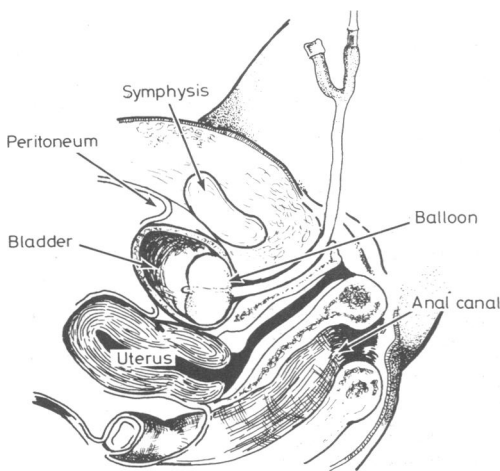
The catheter may be handled by the gloved hand, or advanced in a no-touch technique by using the inner polyethylene sheath in which the catheter is packed or two pairs of forceps. The penis should be slightly stretched with the opposite hand to straighten out mucosal folds. No force should be used at any time.

Usually there is a little resistance to the catheter when its tip meets the external sphincter. It may help if the patient takes a deep breath, for as he breathes out the catheter can usually be gently pushed through the sphincter. Occasionally a prominent middle lobe of prostate or bladder neck will obstruct the catheter, and a curved catheter (coudé) or introducer may be necessary to get over the hump. Introducers should be used only by medical staff properly trained in urethral instrumentation, as great damage to the urethra may result from inexpert manipulation with one. It is important to lubricate the introducer before inserting it into the catheter, and to check that the tip is well engaged in the blunt tip of the catheter.

The balloon of the catheter is inflated with the appropriate volume of sterile water, and a specimen of urine is collected in a sterile container for bacteriological studies. Finally, the catheter is connected to a closed drainage system, thereby reducing the chance of subsequent infection. Remember to advance the foreskin at the end of the procedure to prevent the development of a paraphimosis.

Failure may be due to the presence of a urethral stricture or spasm of the external sphincter. If a small Gibbon catheter cannot be easily passed, more expert help should be sought.

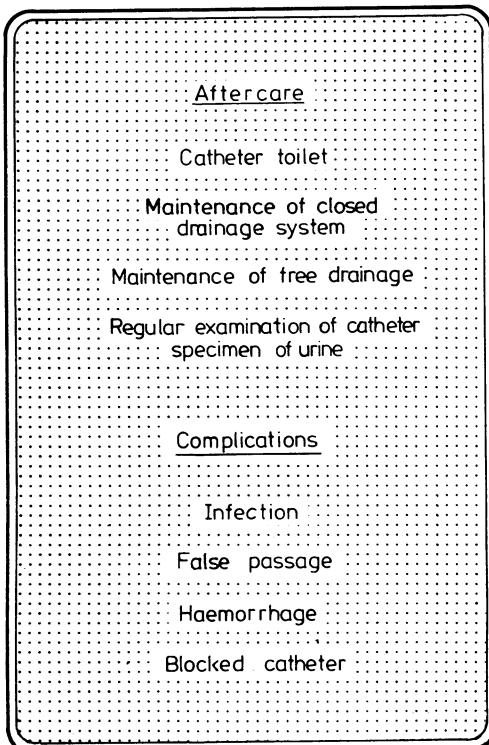
Procedure in women and children



In women catheterisation is often performed by nurses, who should be taught the necessary technique. A good light is essential, as the urethral meatus tends to become more vaginal in postmenopausal, sexually inactive women and is occasionally difficult to find. The bladder neck is sometimes prominent and may be passed by directing the catheter tip slightly anteriorly.

Children require careful handling and may be helped by sedation. A small Gibbon catheter or infant feeding tube is often the most useful. Balloon catheters tend to produce bladder spasm and are not always well tolerated.

Aftercare and complications



Organisms can enter the urinary tract from three sources once a catheter has been left indwelling: (a) by retrograde spread from urine in the reservoir; (b) by a break in the closed drainage system; and (c) from bacterial colonisation of the urethral meatus. Growth of bacteria in the reservoir bag may be prevented by introducing antiseptic into the bag. Breaks in the closed drainage system usually occur when the catheter is irrigated because of blood clot. It is essential that this is done aseptically, otherwise infection will certainly follow. Bacterial colonisation of the urethral meatus may be reduced by regular catheter toilet—that is, by cleansing the glans and adjacent catheter with antiseptic.

Traumatic catheterisation with rupture of the urethra and the catheter tip placed outside the urethra or bladder will result in extravasation of urine with tissue necrosis and gangrene if unrecognised. This is a surgical emergency and requires expert surgical help. The complications of infection and bacteraemia are difficult to eliminate, but good aseptic techniques and careful monitoring of ward infections will help to reduce their incidence.