

Long-term catheter care in the community

Increasing numbers of people in the community have long-term urinary catheters, but catheterisation is not a risk free option and it can be associated with increased morbidity¹. It is an invasive procedure that is sometimes unjustified and can be neglected when in place². When used appropriately though, it can add to a patient's quality of life. In this article, **Linda Nazarko** discusses the risks of catheterisation and looks at how these risks can be reduced.

All long-term urinary catheterisation carries risks. In fact, 75 per cent of patients who have a long-term catheter suffer from one or more recurrent problem³. The problems associated with indwelling catheters include:

- > Tissue damage
- > Bladder damage
- > Infection
- > Catheter encrustation
- > Blockage.

Tissue damage

Tissue damage as a result of an indwelling urinary catheter occurs because of either an inflammatory reaction or trauma to the urethra or bladder.

Inflammation is triggered because the catheter is a foreign body, and this inflammation may be mild or severe. A mild response includes mild oedema, whereas a severe response includes haemorrhage and damage to the urethral and bladder mucosa. The risk of such reactions can be reduced in susceptible individuals by choosing between the different types of catheters – pure silicone, silicone coated latex or hydrogel coated latex⁴.

Catheters can also cause pressure necrosis when the tip of the catheter presses on one area of

the bladder wall leading to a pressure sore. However, the risks of sores can be reduced by changing the catheter at planned intervals.

Heavy overfull drainage bags, or inadequately supported drainage bags, can also cause pressure damage on the bladder wall. It is therefore important to ensure that catheter bags are emptied before they become overfull.

Bladder damage

The bladder is designed to fill and empty. Using a catheter and a drainage bag means that the bladder doesn't carry out this function; and as a result, its capacity is reduced and it can become misshapen.

However, the use of catheter valves allows the bladder to fill normally and to be drained when full. This mimicking of normal function can help reduce the risk of damage^{5,6} and people with catheters should be offered this option⁷.

Infection

People who have catheters will develop bacteriuria as catheters are a portal of entry for infection. Bacteria can enter the bladder during catheter insertion, through the catheter lumen and along the catheter urethral interface⁸. Bacteria also

colonises the surface of the catheter and drainage equipment. This colonisation is known as a biofilm and this makes infections more difficult to treat because it protects bacteria from antibiotics⁹. In acute settings the bladder becomes colonised within seven days of catheter insertion whereas in a community setting it becomes colonised within 28 days of catheter insertion. As a result, an estimated two to six per cent of people with catheters will develop a Urinary Tract Infection (UTI)¹⁰.

Cranberry juice is often recommended to people with long-term catheters as way of preventing infection¹¹. It works by stopping bacteria from sticking to the bladder wall^{12,13}. However, in 2003 there was a report of a patient who had died of a haemorrhage after taking warfarin and drinking cranberry juice (and who had eaten virtually nothing for six weeks)¹⁴. The Committee on the Safety of Medicines (CSM) reported four cases where warfarin and cranberry juice had interacted and issued a safety warning. It stated that people on warfarin should not drink more than one glass of cranberry juice a day¹⁵, but some doctors consider this to be an overreaction. However, it may be wise to advise people who are on warfarin to avoid cranberry juice.

To minimise the risk of infection, catheters should only be inserted when clinically indicated and urinary catheterisation should be avoided whenever possible in patients who are faecal incontinent as contamination of the catheter with faeces may predispose the patient to an UTI. The epic project guidelines recommend four interventions related to reducing urinary catheter-associated infection. These are:

- > Assessing the need for catheterisation
- > Selecting the catheter type
- > Aseptic catheter insertion
- > Catheter maintenance¹⁶.

Encrustation and blockage problems

Around 50 per cent of people who have long-term catheters suffer from encrustation. This can cause repeated blockage of the catheter and leakage. Urine is normally acid; however certain bacteria known as urease producers cause urine to become alkaline. When the urine is alkaline, substances such as struvite and calcium phosphates are leaked, which can cause stones in the bladder. They can also stick to the tip and interior of

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the catheter.

Catheter patients fall into two groups – blockers and non-blockers. Non-blockers do not suffer from encrustation, but blockers do and the life of their catheter is reduced. Blockers are more likely to be female. There are a range of methods for dealing with blockage. Using silver alloy coated catheters, which reduce the risks of bacterial adherence, may help to reduce both infection and blockage¹⁷. This can also be achieved with monitoring blockages and introducing a planned programme of catheter change¹⁸. However if the person tends to block within a few days or weeks of catheter change, this strategy of planned changed may be counter productive.

Bladder washouts can also help prevent blockages. But because they involve breaking the seal between the bag and the catheter, they increase the risks of infection. Washouts can also damage the bladder mucosa. If bladder washouts are required, catheter maintenance solutions can be used. A product like Suby G should be used no more than twice weekly; and product like Solution R can be used if a catheter is blocked, but this is not for routine use because it is very acidic.

The specific risks of urethral catheterisation

With urethral catheterisation, heavy overfull drainage bags or inadequately supported drainage bags can cause the urethral meatus to split in men¹⁹. In addition, people who have a urethral catheter often have a discharge and so it is important to ensure that the urethral area is properly cleaned with mild soap and water daily. Removal of the catheter can also cause urethral trauma especially if the tip of the catheter has become encrusted.

The specific risks of suprapubic catheterisation

Suprapubic catheterisation has advantages with certain groups of patients; however, it is not superior to urethral catheterisation. It is important to assess the patient before considering a

Table 1. Clinical indications for catheterisation in primary care

- > Acute or chronic urinary retention
- > Drainage of hypotonic bladder
- > To enable chemotherapy to be administered
- > To enable cytotoxic therapy to be administered
- > To manage urinary incontinence when other methods have failed
- > As a comfort measure in palliative care in the last stages of life.

suprapubic catheter. The advantages of suprapubic catheterisation are:

- > The risk of urethral trauma is eliminated
- > It is more comfortable for people who are not mobile
- > The person with a suprapubic catheter can continue to enjoy sex
- > Many people with catheters find them easier to manage.

Suprapubic catheters are not suitable for people who are very obese or those who have a weak pelvic floor. Patients with a weak pelvic floor will often continue to leak urine urethrally and will need a pad therefore they would be better managed with a urethral catheter or pads. This type of catheter is also not suitable for people who are confused and who pull or tug at the catheter, as this can cause tissue damage.

Assessing the need for long-term catheterisation

Urinary catheterisation increases morbidity by a factor of three²⁰. Infection can be difficult to detect in older people because of the impaired immune response associated with ageing; and also drug therapies like analgesia, steroids and non steroidal anti-inflammatory medications can mask the cardinal signs of infection²¹.

Catheterised people who live in nursing homes are three times more likely to receive antibiotics and require hospitalisation than those who are not catheterised. They are also three times more likely

to die within a year²². It is essential to ensure that indwelling urinary catheters are only used when clinically indicated.

When a person is discharged from hospital with an indwelling catheter it can sometimes be difficult to ascertain the reasons why the person remains catheterised. In such circumstances you should consider a trial without a catheter. In community hospitals and nursing homes, it is good practice to remove catheters at midnight rather than first thing in the morning. This enables clinicians to make decisions regarding management during normal working hours. In primary care the continence adviser may run clinics that offer 'trial without a catheter' services. The need for continued catheterisation should be reviewed regularly.

Conclusion

Catheters when used appropriately can contribute to quality of life and it is the clinician's responsibility to balance the risks of long-term catheterisation against other factors. When the person has capacity he or she should be given sufficient information to enable informed consent. If the person lacks capacity, the clinician can treat in the person's best interest²³. Catheters like all interventions have costs as well as benefits. Effective management ensures that there is a clinical need for catheterisation and uses evidence based practice to reduce risks of complications ■ GM

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Key points

- > Long-term catheterisation is associated with increased morbidity.
- > Catheterisation should only be carried out when clinically indicated.
- > The catheterised person is at risk of tissue damage, bladder damage, infection, encrustation and blockage.
- > The need for continued catheterisation should be reviewed regularly.
- > The person with a catheter must give informed consent whenever capacity is present.
- > If the person lacks capacity the clinician must act in the person's best interests.