Urinary catheters: common urology problems in the community

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Urinary catheters are widely used and complications with them are common. In this article the author considers the common problems encountered when using urinary catheters and suggests what can be done about them.

The urinary catheter is said to be the most common indwelling medical device in hospitals and residential care homes. In a prospective hospital study 57% of patients with an indwelling catheter (IDC) had at least one complication in the first month after insertion and frequent complications continued at home. Urologists generally consider IDCs to be the last resort in the management of ‘bladder problems’. Despite all of this, they continue to be widely used and some urological problems would be impossible to manage without them.

Unfortunately, hospital medical teams may insert a catheter but fail to record the reason. When the principal cause for admission has been dealt with, the patient is discharged to the community with the catheter still in the urethra (or occasionally in a supra-pubic track). There is often no follow-up plan and the first that the community team may know about it is a call for an urgent consultation about a complication.

None of this is good for the patient, who may well end up back in hospital for lack of facilities in the community to deal with what should be a simple problem. At least 75% of the patients presenting to an emergency department with a catheter complication could have been managed in the community.

What should be done? In the caricature scenario described above, it is probably a bit late for communication with the hospital team that put the catheter in originally! However, in an ideal world, the hospital team should have recorded the reason for catheterisation and devised a follow-up plan for it. If the GP has not been given this information he/she should take urgent steps to obtain it.

Common scenarios and possible solutions
For the following common scenarios some thoughts about what health care professionals in the community can do for their patients are provided.

The catheter has fallen out
A. It is known that the catheter was inserted after pelvic surgery, particularly radical prostatectomy or bladder reconstruction.

No one except the hospital urologist should attempt to replace the catheter. A review in hospital should be arranged urgently. The patient should be told to take the ejected catheter with him so that it can be confirmed that no part has broken off.

B. It is known that the catheter is a long-term requirement.

Pending the arrival of the GP, the catheter should be kept so that it can
be checked for completeness. The most common cause of ejection is that the balloon has burst. It is important to confirm (and record) that nothing is missing that could have remained in the bladder. Occasionally, a catheter can come out with the balloon still inflated, usually because the patient has trodden on it. Some patients, especially when demented, can pull out a catheter despite the pain it would cause.

One attempt should be made to replace a catheter. However, long-term catheters may ulcerate the urethra and cause false passages, or the prostate may be so rigid that the lumen is obstructed. If the catheter does not ‘slip in’ it would be safer to refer the patient back to the urologist. Undue force on a urethra that has already been damaged by a long-term catheter is likely to make the problem worse.

If the catheter has been pulled out with the balloon inflated, the urethra is almost certain to have been damaged. If the man is obviously in retention, it would still be reasonable to have one attempt to re-catheterise as immediate drainage of urine will confirm a correct position. Failure would be grounds for urgent urological referral.

**The catheter is blocked**

It can be surprisingly difficult to be sure that a catheter is blocked, even when a patient says that they are in agony from retention. It is best to obtain some objective evidence. There are two important physical signs: the bladder is palpable and, after emptying the drainage bag, no further urine is seen to flow.

The catheter can usually be unblocked by first injecting about 50ml of sterile saline with a bladder syringe to blow any obstructing debris back into the bladder, and then sucking out 50ml to relieve the immediate pain of retention before re-connecting the drainage bag to collect the residual. It would be wise to protect the bed or chair with incontinence pads before starting this procedure. Once drainage is re-established, the bladder should be washed out using 150–200ml of saline for each wash, otherwise remaining debris may block the catheter again (see below section ‘Recurrent catheter blockage’).

The differential diagnosis is that the detrusor muscle of the bladder wall has contracted around the inner end of the catheter in an attempt to expel the balloon. The pain is caused by the bladder spasm that is also blocking the eyes of the catheter that are distal to the balloon. Some urine may actually leak around the catheter, increasing the illusion that the man is in retention. When the saline is injected through the catheter, little or none can be sucked back.

For the acute management of a blocked catheter, analgesia and antimuscarinics are needed but what is used will depend mainly on what the GP has available. Indometacin 100mg PR or buscopan 20mg IM are both helpful. Thereafter, oral antimuscarinics should be started.

**There is an infection**

By one month, 95% of men with an IDC will have bacteriuria. However, treatment is contraindicated unless there are symptoms; unpleasant odour, on its own, is not a symptom. Fever, bladder pain, increased spasticity in those with neuropathy and chills are indications for treatment.

Urine should be sent for culture but a ‘best-guess’ antibiotic can be started pending a result. If the symptoms resolve, it need only be continued for 24 hours longer than the symptoms. If there is no improvement, another antibiotic can be used based on the urine culture result.

**Maintenance and prophylaxis**

*Is the catheter needed?* This question should always be asked when a man first appears in the community with an IDC. In a community study it was found that it was inappropriate in 51% of patients. There are several alternatives beyond the scope of this article and urological consultation may be necessary. If a catheter is essential, it should be of the smallest calibre that will drain the urine, usually 16fg or even 14fg.

*Is a drainage bag needed?* If the catheter is needed for retention that cannot be managed in any other way then it is better to use a

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**Box 1. Recommendations for the management of patients with long-term indwelling catheters in the community**

- Every man with long-term indwelling catheter should have the following equipment at home:
  - Standard catheterisation pack
  - Disinfectant and sterile gloves (if not in the pack)
  - Spare self-inflating Foley catheter of his chosen size
  - 50ml bladder syringe
  - 1 litre bottle of sterile saline
  - Sterile bowel
  - Several incontinence pads
  - Copy of this article

Items can be used and replaced at each catheter change. This should allow home management of the majority of catheter problems. If the problem requires anything more sophisticated, hospital referral would be wise.
‘flip/flow’ valve instead of a drainage bag. This is a simple tap that can be opened intermittently to empty the bladder into the lavatory or a bottle. Its use is dependent on the man (or carers) being willing and competent to open and close it. When it is practical, it is more comfortable than a dangling bag and allows greater social freedom.

**Self-care:** a good many of the catheter problems may be avoided by educating the man or his carers. The genital area needs to be kept socially clean and dry. An IDC is not a contraindication to bathing or showering. There is usually a small serosanguinous discharge, which may encrust on the meatus. It is not a sign of infection and can be wiped off. The penis and perineum should be inspected at least weekly for local ulceration, which may progress to urethral destruction, especially in men with an insensitive perineum.

**Social activities:** for most men, the limitations on social activity are more related to comorbidity than to the presence of a catheter. Walking, cycling, driving and other ‘normal’ activities are safe providing that common sense is applied to avoid traction on the catheter. Swimming is also safe if the man can use a ‘flip/flow’ valve and does not leak around the catheter. For sexual intercourse, the catheter can be folded back alongside the penis and covered with a condom.

**Infection:** a systematic literature review has concluded that there is no effective prophylaxis for urinary tract infection in patients with an IDC. In particular, prophylactic antibiotics are contraindicated. They are likely to cause infection with a more resistant organism than the original. The use of a flip/flow valve instead of a bag allows filling and natural flushing of the bladder, which may reduce the risk.

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**Key points**

- Confirm that a long-term catheter is appropriate
- If a long-term catheter falls out, attempt to replace it
- Blocked catheters should be unblocked by washing-out
- Symptomatic infections should be treated but antibiotic prophylaxis is ineffective
- Patients should be taught self-care
- Equipment to deal with complications should be kept at home

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**Recurrent catheter blockage:** increased fluid intake to give a 24-hour urine output of at least 2.5 litres is the mainstay of management. There is weak evidence that increasing the urinary citrate (a stone inhibitor) with lemon drinks may be helpful. Twice weekly vigorous washout with saline may clear calcific debris.

**Bladder spasm and catheter bypass:** antimuscarinic drugs such as oxybutynin or the slower acting solifenacin are the best hope. Passing a larger catheter with a bigger balloon usually causes more spasm and urethral damage.

The catheter should be changed every six weeks using an aseptic technique. Pure silastic catheters may last as long as three months. In the long-term it may become apparent that more frequent changes in individual patients reduce the complication rate.

**Special situations**

**Clean intermittent catheterisation:** see Karen Logan’s excellent article in this journal.

**Supra-pubic catheters (SPC):** There are several reasons why an SPC is used instead of a standard IDC but the management is the same. It would be wise to have the first catheter change done by the urology team, but thereafter it can be done in the community. The track is mature at three months and a catheter change is actually easier than that through the urethra. The bladder should be emptied before the change is completed, otherwise there will be a good deal of spillage when the old catheter is removed.

**Conclusion**

The majority of patients with long-term catheters should be managed in the community. Much of the work can be done by appropriately trained nurses with GP supervision.

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**References**