

HOW TO DEAL WITH ACUTE URINARY RETENTION

Acute urinary retention refers to the sudden inability to pass urine. It will often be unexpected, is usually inconvenient and is almost always painful. The aim of this article is to enable healthcare workers to recognise the symptoms of acute urinary retention, inform them of what action can be taken and stress the importance of obtaining an accurate diagnosis from a medical practitioner.

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Acute urinary retention refers to the sudden inability to pass urine. It will often be unexpected, is usually inconvenient and is almost always painful (Emberton and Anson, 1999). Painless acute urinary retention can occur but it is rare and is usually associated with central nervous system pathology (Suleyman, 2006).

Acute urinary retention should be treated as a medical emergency and the patient needs to be catheterised to relieve the pain of retention as soon as possible.

Urinary retention may result from bladder outlet obstruction or from loss of detrusor (bladder muscle) contractility.

Symptoms of acute urinary retention can be similar to those of other diagnoses, for example, abdominal aortic aneurism. It is, therefore, of vital importance that the diagnosis of acute urinary retention is confirmed by a GP and appropriate referral made

to a community nurse or acute hospital if no local community services are available.

It is important not to confuse acute urinary retention and chronic urinary retention. Chronic urinary retention is usually painless and some urine may still be passed urethrally, although the volume will be minimal. However, chronic urinary retention, although not an emergency, should still be treated in an acute hospital as the patient may also have a degree of renal impairment that may require urgent urological assessment (Choong and Emberton, 2000).

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WHO IS LIKELY TO PRESENT WITH ACUTE URINARY RETENTION

Acute urinary retention is predominantly a male problem, due mainly to an increase in the size of the prostate gland in middle-aged and elderly males. However, females may also present with acute urinary retention, often following surgery or childbirth. This article, however,

concentrates on males as the number of females diagnosed with acute urinary retention is comparably small.

Armitage et al (2007) suggest that as many as one in 10 men aged over 70 may experience acute urinary retention requiring immediate treatment with a urinary catheter. This figure increases with age and it has been reported as high as one in three men aged over 80 (Hassouna et al, 2005).

The signs and symptoms of acute urinary retention include:

- ▶ Sudden inability to pass urine
- ▶ Severe pain around the suprapubic area (lower abdominal area)
- ▶ The ability to palpate a swollen bladder
- ▶ A high volume of urine present in the bladder on bladder scanning (usually 600mls or more).

The most common cause of acute urinary retention in men over 50 years of age is benign prostatic hyperplasia (BPH). It can also be caused by spinal cord or nerve damage, cancer of the bladder or prostate gland, or a urethral stricture. Non disease-

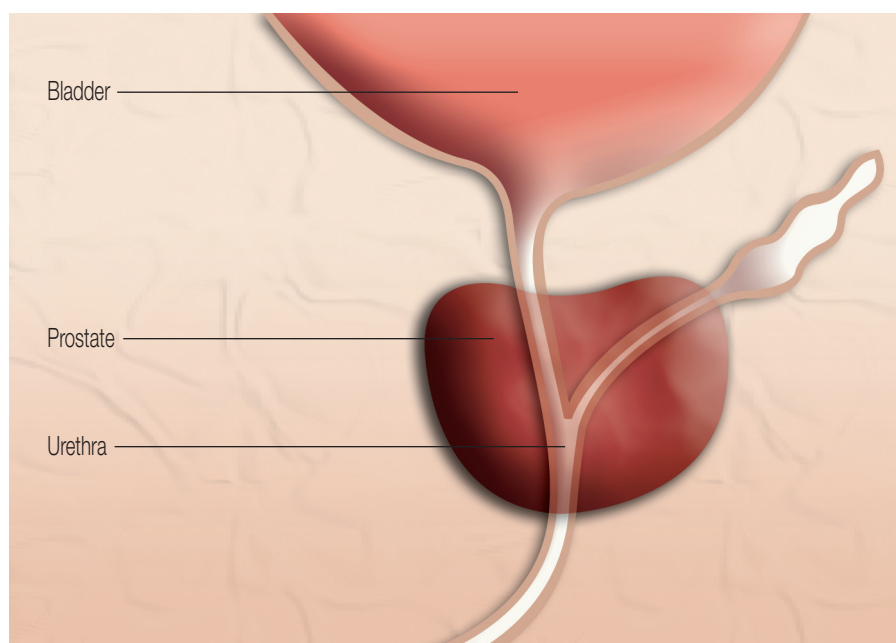


Figure 1: The position of the prostate gland.

related factors that may also precipitate the condition include:

- ▶▶ Excessive alcohol intake
- ▶▶ Cough and cold medications
- ▶▶ Constipation
- ▶▶ Immobility
- ▶▶ Anaesthesia.

In instances where the precipitating factors are non disease-related, the possibility of regaining normal bladder function is increased following catheterisation and a subsequent trial without catheter (TWOC). This is where a catheter that has been inserted via the urethra is removed from the bladder for a trial period to determine whether the patient is able to pass urine spontaneously.

Approximately 60% of men will resume spontaneous voiding following a TWOC. If any recurrence of the acute urinary retention occurs, it is likely to do so within the first 6–12 months after the first episode. A study by Armitage et al (2007) found that 80% of men who experience a

recurrence of urinary retention do so within a six-month time period, usually as a result of BPH.

Benign prostatic hyperplasia

BPH is a condition that involves a benign increase in the size of the prostate gland (Figure 1) in middle-aged and elderly men. The increase in size means that the prostate gland begins to constrict the urethra (Figure 2).

Acute urinary retention is an important complication of BPH and is the reason for surgery in 25–30% of patients undergoing prostatectomy (Verhamme et al, 2005).

With the advent of safe and effective medical therapies, the majority of patients with BPH are managed by their primary care physician (Rosario et al, 2005). An alpha blocker can be prescribed to relax the smooth muscles around the urethra, bladder neck and prostate. This will start to be effective within

48 hours. Some patients will also require an alpha reductase inhibitor that will reduce the size of the prostate, but this can take up to six months to be effective.

If medication fails, surgery may be required. The most common procedure is a transurethral resection of the prostate (TURP), which can be performed under general anaesthetic or by using a spinal block. The procedure takes approximately one hour.

Other surgical interventions for BPH include needle ablation, microwave therapy and laser surgery. A prostatic stent can also be inserted to keep the prostate open, although there are complications with this procedure, such as encrustation.

TREATMENT OF URINARY RETENTION

Urethral catheter

Before catheterisation, a bladder scan is used to determine the volume of urine retained in the bladder. An intermittent catheter is an alternative method of determining the volume of urine, however, this is an invasive procedure and carries a small risk of introducing infection.

A urethral catheter should be inserted as soon as possible after the diagnosis of urinary retention has been confirmed by a medical practitioner. This will enable the urine to drain from the patient's bladder, relieving the pain.

Following catheterisation, the monitoring of urinary output is vital to ensure that the bladder continues to empty and that excessive diuresis does not

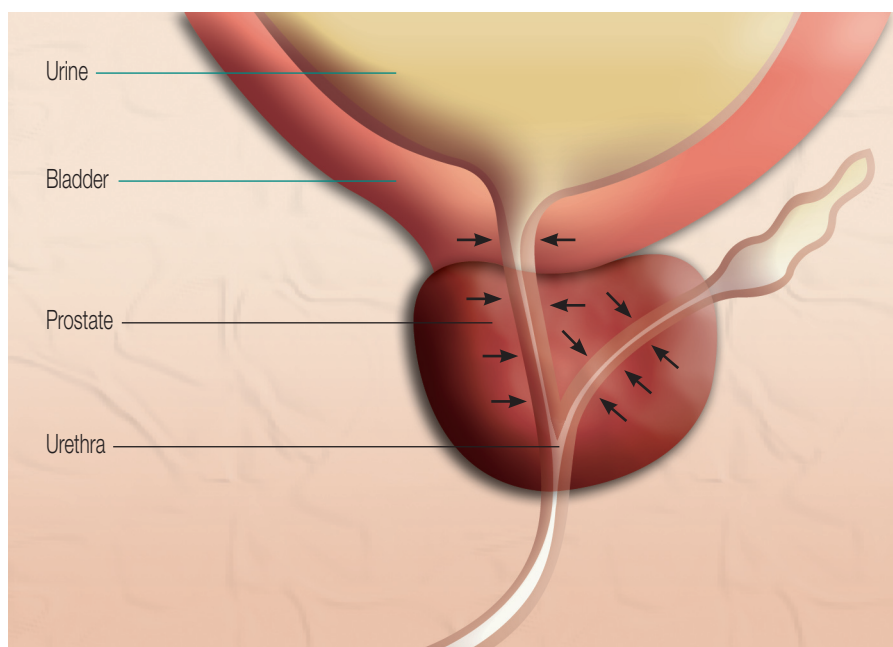


Figure 2: In BPH, and enlarged prostate gland constricts the urethra.

occur. Diuresis can lead to dehydration and may require the insertion of a venous drip to replace fluids. In this instance the patient would need to be admitted to hospital.

Within the author's Trust, nurses have a pathway for catheterising patients presenting with acute urinary retention, which is only implemented following a GP diagnosis and referral. It is also only acceptable for community nurses to catheterise if there is a local policy. Any healthcare worker wanting to undertake the procedure must be competent in the technique of male catheterisation.

In many areas, GPs directly refer patients with acute urinary retention to acute hospital. However, since the implementation of the procedure in the author's Trust, many patients have been successfully treated in their own locality,

thereby avoiding the need for admission to hospital. The incidence of infection has also been reduced in patients performing intermittent self-catheterisation (ISC) when compared to those with indwelling catheters.

If complications arise, such as the inability to drain urine after insertion of a urinary catheter, haemorrhage, excessive diuresis or abnormal anatomy, or if the GP specifically states that the patient should be admitted, then admission to an acute hospital can be arranged. In other areas, the GP will refer the patient as an emergency to an acute hospital

Within 24 hours of catheterisation, a blood sample should be taken to check the patient's renal function. This may be done locally at a phlebotomy clinic where the appropriate protocol is in place. The GP may also request a prostate specific antigen (PSA) blood test to be

carried out. PSA is a protein produced by the cells of the prostate gland and can be a predictor of cancer.

Intermittent catheterisation

A TWOC can be done at some time between 2–7 days after catheterisation, depending on local protocol. In the author's Trust, a GP prescribes an alpha blocker and the TWOC procedure is done on day seven. This trial will determine the patient's ability to pass urine.

A bladder scan is the preferred method for determining that the bladder is emptying effectively after removal of the catheter. If a bladder scanner is not available, an intermittent catheter may be inserted urethrally to determine whether there is any residual urine in the bladder. A bladder scanner is preferable as it is non-invasive.

Failure of the TWOC may necessitate the need for patients to be trained in ISC, in order that they can drain the bladder on a regular basis until the cause of the retention is discovered and treated. Depending on treatment it may be necessary to perform ISC indefinitely or have a permanent indwelling urethral catheter.

Before commencing this procedure, it is important to assess the willingness and capability of the patient to perform ISC. Some men will find the idea of regularly inserting a catheter into their penis unacceptable, either socially, culturally or psychologically. ISC requires good manual dexterity on behalf

of the patient to be able to insert the catheter and good personal hygiene is also important in order to prevent infection.

CONCLUSION

If a patient presents with symptoms that indicate acute urinary retention, a diagnosis must be confirmed by a GP if the patient is in the community, or a medical practitioner if the patient is in an acute hospital.

Once acute urinary retention is confirmed, a referral will be made for urinary catheterisation to be carried out. Performing a bladder scan will indicate the volume of urine in the bladder and catheterisation to empty the bladder should be instigated immediately.

This urinary catheterisation procedure can be carried out in the community setting if the appropriate procedures have been put in place. Healthcare workers performing the procedure in the community need to be skilled in performing bladder scanning and interpreting the results as well as male catheterisation. They also have to have access to an agreed local pathway – if no such procedure exist, the patient should be referred to an acute hospital.

A TWOC should be instigated 2–7 days after the initial catheterisation to identify if further treatment or referral to specialist services is necessary.

Tests to determine the cause of acute urinary retention

must be implemented – these may include blood tests and urinalysis as well as rectal examination by an appropriately qualified and experienced healthcare practitioner to assess the presence of any prostate abnormalities.

The prescription of any medication and referral to specialist services will be arranged by the GP or other assessing medical practitioner. A referral to a urology unit will be arranged if the pharmacotherapy fails.

Depending on the distance the patient must travel to reach an acute hospital, catheterisation for acute urinary retention can be implemented more quickly within the community, providing the healthcare worker has the relevant skills and experience. **CE**

ACKNOWLEDGEMENTS

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Key Points

- » Acute urinary retention refers to the sudden inability to pass urine.
- » It will often be unexpected, is usually inconvenient and is almost always painful.
- » Acute urinary retention should be treated as a medical emergency and the patient needs to be catheterised to relieve the pain of retention as soon as possible.
- » Catheterisation for acute urinary retention can be implemented more quickly within the community, providing the healthcare worker has the relevant skills and experience.
- » Symptoms of acute urinary retention can be similar to those of other diagnoses, for example, abdominal aortic aneurism.
- » It is, therefore, of vital importance that the diagnosis of acute urinary retention is confirmed as soon as possible.