

Chronic urinary retention

See also the separate articles [Benign Prostatic Hyperplasia](#), [Urinary Tract Obstruction](#), [Lower Urinary Tract Symptoms in Men](#), [Lower Urinary Tract Symptoms in Women](#), [Voiding Difficulties](#) and [Acute Urinary Retention](#).

What is a chronic urinary retention?

Urinary retention describes a bladder that does not empty completely or does not empty at all. ^[1]

Some patients with chronic urinary retention do not have any symptoms. Other patients with chronic urinary retention may be able to urinate but experience lower urinary tract symptoms (LUTS), related to storage and voiding difficulties. This is in contrast to [acute urinary retention](#), a medical emergency, which is painful and the patient is unable to urinate despite a full bladder.

Chronic urinary retention, whilst not immediately life-threatening, can lead to hydronephrosis and renal impairment and puts the patient at risk of acute-on-chronic retention, so requires diagnosis and treatment.

Aetiology

The most usual cause of chronic urinary retention is bladder outlet obstruction.

Important causes of bladder outlet obstruction

- [Benign prostatic hyperplasia \(BPH\)](#) is by far the most common cause and is a common sequelae of male ageing.
- [Prostatic carcinoma](#) can obstruct the urethra either by a direct mass effect (as in BPH) or by invasion of the wall.

- **Drugs** causing bladder sphincter dysfunction include:^[2]
 - Antispasmodics.
 - Antihistamines.
 - Anticholinergics.
 - Botulinum toxin (used to treat overactive bladder).^[3]
- **Iatrogenic** - eg, following colposuspension.
- **Congenital deformities:**
 - Primary bladder neck obstruction, unrelated to deformities of the urethra.
 - Secondary bladder neck obstruction due to deformity of the urethra (posterior urethral valves), leading to back pressure on voiding, and bladder neck hypertrophy.
 - Meatal stenosis is a congenital disorder in boys.
- **Urethral strictures** resulting from:
 - Infection - eg. tuberculosis, gonorrhoea.
 - Trauma - eg, fractured pelvis, iatrogenic.

How common is chronic urinary retention?

- Chronic urinary retention is largely a condition that affects men, as its most common cause is BPH; however, there is an appreciable background incidence in women.
- Experience of urinary storage or of voiding-related symptoms is very common in middle-aged to older men. However, as they increase in severity, they have a significantly negative effect on quality of life. Over 40% of men aged 50 years or more have moderate-to-severe LUTS but many do not seek medical help and simply put up with the problem. Only 18% have a diagnosis of BPH.^[4]

- The cause of urinary retention in women is unknown in about a third of cases but approximately half are due to Fowler's syndrome (typically seen in women in their 20s-30s and thought to be due to failure of the urethral sphincter to relax appropriately).^[5]

Chronic urinary retention symptoms

The symptoms, if any are present, usually come on slowly and may not be noticed due to their gradual evolution. The more common ones are listed below:

- Urinary frequency.
- Urinary urgency.
- Urinary hesitancy.
- Poor urinary stream.
- Post-micturition dribbling.
- Nocturia.
- New-onset enuresis.
- Urinary incontinence.
- A sensation of incomplete voiding after micturition.
- 'Double' or recurrent voiding of urine (returning to micturition due to a sensation of 'needing to go again').
- Symptoms consistent with urinary tract infection.
- Increasing lower abdominal discomfort (may indicate intermittent acute-on-chronic-retention).
- Acute urinary retention.
- Lethargy, pruritus, recurrent infections, hypertension due to chronic kidney disease (rare with cases of mild-to-moderate obstructive uropathy).

Signs

- Check blood pressure as a possible indicator of renal impairment.

- Abdominal and genitourinary examination:
 - Patients with long-standing significant urinary retention may have a palpable enlarged bladder, which will usually be non-tender.
 - Check for enlargement of kidneys, via bimanual palpation.
 - Digital rectal examination should be carried out to look for evidence of prostatomegaly and any signs of prostatic carcinoma.
 - Examine external genitalia in children, men and women to seek evidence of urethral abnormalities causing urinary flow obstruction - eg, urethral stricture, phimosis, meatal stenosis.
- Neurological examination should exclude cord compression and look for evidence of other relevant neurological conditions.

Differential diagnosis

A wide range of conditions can cause chronic urinary retention, most commonly via preventing bladder outflow (see above). Additional causes of impaired emptying of the bladder are due to dysfunction of the bladder muscle or its innervation.^[6]

Neurological causes

- **Spinal cord injury.**
- Pelvic surgery.
- Pelvic and sacral fracture.
- **Herniated disc.**
- Infections (eg, **AIDS, syphilis, Lyme disease**).
- **Multiple sclerosis.**
- Sensory and autonomic uropathy, most commonly with **diabetes.**

Myogenic failure

Most often due to chronic detrusor overdistension.

Investigations

- Urinalysis – look for evidence of glycosuria, infection, proteinuria or haematuria.
- MSU for urine microscopy and culture.
- Blood tests:
 - U&Es/creatinine to seek evidence of chronic kidney disease. They can be normal even in significant renal impairment, so consider using estimated GFR calculator (abbreviated MDRD calculation – MDRD = Modification of Diet in Renal Disease Study) or checking creatinine clearance by 24-hour urinary collection.
 - FBC to exclude anaemia of chronic kidney disease or raised white cell count due to infection.
 - Blood glucose should be checked if diabetes may be causing an osmotic diuresis and thus leading to LUTS.
 - Prostate specific antigen (PSA): information, advice and time to decide if they wish to have PSA testing should be provided if:^[7]
 - LUTS are suggestive of bladder outlet obstruction secondary to benign prostatic enlargement; or
 - The prostate gland feels abnormal on digital rectal examination; or
 - The man is concerned about prostate cancer.
- Voiding diaries.

- Many further investigations may be used in secondary care to investigate the severity of urinary flow disruption and to establish the underlying cause. These include:
 - Urinary tract ultrasound (including prostatic ultrasound performed transrectally ± prostatic biopsy).^[7]
 - MRI or CT imaging of the urinary tract.
 - Post-voiding residual volume determination through catheterisation (the definition of significant post-void residual urine remains debatable).^[8]
 - [Urodynamic studies](#) (uroflowmetry, cystometry).
 - Intravenous pyelography ± post-voiding imaging of residual urine volume.
 - Renal radionuclide scanning.

Staging

- A useful way of classifying the severity of patient symptoms (and deciding on the degree of intervention necessary to improve them) is use of the [International Prostate Symptom Score \(IPSS\)](#).
- It is a well-validated measure of symptom severity but does not necessarily correlate with the severity of the causative pathology (particularly for BPH).^[9]
- Response to the quality-of-life question in the IPSS ('If you were to spend the rest of your life with your urinary condition the way it is now, how would you feel about that?') is a strong predictor for determining if interventions are indicated.^[4]

Chronic urinary retention treatment^[7]

Treatment includes treatment of any specific underlying cause with consideration of catheterisation and/or surgery if required.

The National Institute for Health and Care Excellence (NICE) recommends the following for men with chronic urinary retention:

- Consider offering self- or carer-administered intermittent urethral catheterisation before offering indwelling catheterisation for men with chronic urinary retention.
- Carry out a serum creatinine test and imaging of the upper urinary tract in men with chronic urinary retention (residual volume greater than one litre or presence of a palpable/percussible bladder).
- Catheterise men who have impaired renal function or hydronephrosis secondary to chronic urinary retention.
- Consider offering intermittent or indwelling catheterisation before offering surgery in men with chronic urinary retention.
- Consider offering surgery on the bladder outlet without prior catheterisation to men who have chronic urinary retention and other bothersome LUTS but no impairment of renal function or upper renal tract abnormality.
- Consider offering intermittent self- or carer-administered catheterisation instead of surgery in men with chronic retention who you suspect have markedly impaired bladder function.
- Continue or start long-term catheterisation in men with chronic retention for whom surgery is unsuitable.
- Provide active surveillance (post-void residual volume measurement, upper tract imaging and serum creatinine testing) to men with non-bothersome LUTS secondary to chronic retention who have not had their bladder drained.

Other measures

- Stop any precipitating/aggravating medication.
- General lifestyle advice such as:
 - Regulating fluid intake and avoiding evening drinking.
 - Reducing alcohol intake.
 - Reducing tea and coffee intake.
 - Preparation enabling access to toileting facilities.

- Use of bladder retraining and regular voiding. Bladder training is less effective than surgery for bladder outlet obstruction.
- Drug therapy: may provide symptom improvement until more definitive measures can be undertaken (if this a possibility):^[10]
 - BPA is treated either surgically or medically with alpha-blockers.
 - Dutasteride and finasteride are alternatives to alpha-blockers, particularly in men with a significantly enlarged prostate.
 - Tadalafil (a phosphodiesterase-5-inhibitor) may also be used in the management of BPH.
 - NICE recommends that phosphodiesterase-5 inhibitors should not be used solely for treating LUTS in men.
- Surgery: indications for surgery and the type of surgical intervention will depend on the underlying cause of urinary retention, the effectiveness of any non-surgical interventions and the patient's management choice following discussion of the potential benefits and limitations of each option.

Complications

- [Acute retention of urine](#).
- Hypertrophy of detrusor muscle and formation of bladder diverticula.
- Hydronephrosis due to chronic back pressure on kidneys, ultimately resulting in [acute kidney injury](#) or [chronic kidney disease](#).
- [Urinary incontinence](#) due to overflow.

Prognosis

This is highly variable depending on the underlying cause.

In BPH, the general trend is for symptoms to worsen over time. However, this is not true in all patients. In the placebo arm of the MTOPS (the Medical Therapy of Prostatic Symptoms) study, the rate of overall clinical progression (as measured by such factors as incidence of acute urinary retention, urinary incontinence, renal insufficiency or recurrent urinary tract infection) was 17.4% over the four-year duration of the study.^[11]

Further reading

- [Selius BA, Subedi R](#); Urinary retention in adults: diagnosis and initial management. Am Fam Physician. 2008 Mar 1;77(5):643-50.
- [Sacral nerve stimulation for idiopathic chronic non-obstructive urinary retention](#); NICE Interventional Procedure Guidance, November 2015

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