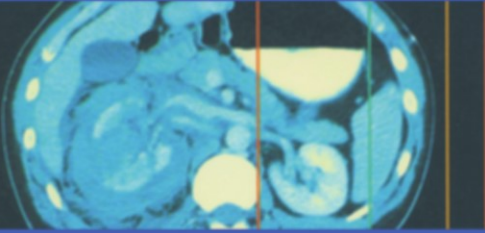


Hashim Hashim  
John Reynard  
Nigel C. Cowan



# Urological Emergencies in Clinical Practice

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**Hashim Hashim, John Reynard, and  
Nigel C. Cowan**

 Springer

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## Foreword

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The specialty of urology has evolved into a less surgical and more cognitive discipline. Indeed, most of what we do in our daily clinical practice involves nonoperative patient care. However many of our patients present with, what are perceived as, emergencies. Such 'emergencies' encompass a broad spectrum of diagnoses, ranging from the often mundane hematuria and orchalgia to the more striking renal colic, symptomatic urinary retention, Fournier's gangrene and testicular torsion, to name but a few. Frequently these emergencies require swift but prudent judgment in order to achieve a satisfactory outcome.

Despite the plethora of these daily encountered 'emergencies,' their descriptions are diluted in the voluminous urologic textbooks available. By assembling this textbook specifically on urologic emergencies, these distinguished authors have contributed a unique and valuable addition to our urologic literary armamentarium. Their objectives are to present diagnostic and treatment-oriented information that can be accessed rapidly and efficiently. These goals are accomplished without comprising thoroughness.

The book consists of 10 broad chapters divided into specific sections making the information easily retrievable. Diagrams and photographs are incorporated appropriately to highlight important points. Diagnostic and therapeutic tips of practical significance are offered throughout the book. This superb organizational format provides a clear, logical and efficient approach to urologic emergencies and should serve as a principal reference for any physician dealing with these ubiquitous problems.

I congratulate the authors and am confident that their gallant efforts will serve to better educate physicians and ultimately improve patient care.

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## Chapter I

# Presenting Symptoms of Urological Emergencies

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*Hashim Hashim and John Reynard*

### **FLANK PAIN**

Flank pain is regarded as a classic symptom of renal or ureteric pathology. Indeed, it is often immediately assumed that a patient who presents with flank pain has a stone in the ureter or kidney. However, only 50% of patients who present with flank pain have a ureteric stone confirmed on imaging studies (Smith et al. 1996, Thompson et al. 2001). The other 50% have non-stone-related disease (and more often than not nonurological disease), the differential diagnosis of which is long and dependent on the age, the side of the pain, and the sex of the patient.

The multiple causes of flank pain, to an extent, reflect the fact that the nerve roots subserving pain sensation from the kidney also subserve pain sensation from other organs. Pain sensation from the kidney primarily is transmitted via preganglionic sympathetic nerves that reach spinal cord levels T11 to L2 through the dorsal nerve roots. These same nerve roots supply pain fibres to other intraabdominal organs. Similarly, pain derived from the T10 to T12 costal nerves can also be confused with renal colic.

### **Causes**

This list of causes of flank pain is not exhaustive. Some of these alternative causes may seem bizarre, but we have seen examples of all of these conditions, which were initially referred to us as 'ureteric stone pain,' but where the final diagnosis was some other cause.

### **Pain on either side**

Urological causes: ureteric stones, renal stones, renal or ureteric tumours, renal infection (pyelonephritis, perinephric abscess, pyonephrosis), pelviureteric junction obstruction.

Medical causes of flank pain: myocardial infarction, pneumonia, rib fracture, malaria, pulmonary embolus.

Gynaecological and obstetric disease: twisted ovarian cysts, ectopic pregnancy, salpingitis.

Other nonurological causes: pancreatitis, diverticulitis, inflammatory bowel disease, peptic ulcer disease, gastritis.

Right-side flank pain

Biliary colic, cholecystitis, hepatitis, appendicitis.

When flank pain has a urological origin, it occurs as a consequence of distention of the renal capsule by inflammatory or neoplastic disease (pain of constant intensity) or as a consequence of obstruction to the kidney (pain of fluctuating intensity). In the case of ureteric obstruction by a stone, pain also arises as a consequence of obstruction to the kidney and from localised inflammation within the ureter.

Characteristics of flank pain due to ureteric stones: this pain is typically of sudden onset, located below the costovertebral angle of the 12th rib and lateral to the sacrospinalis muscle, and it radiates anteriorly to the abdomen and inferiorly to the ipsilateral groin. The intensity may increase rapidly, reaching a peak within minutes or may increase more slowly over the course of 1 to 2 hours. The patient cannot get comfortable, and tries to move in an attempt to relieve the pain. The pain is not exacerbated by movement or posture. Associated symptoms, occurring with variable frequency include nausea, vomiting, and haematuria.

Patients with pathology that irritates the peritoneum (i.e., peritonitis) usually lie motionless. Any movement, or palpation, exacerbates the pain. Patients with renal colic try to move around to find a more comfortable position. The pain may radiate to the shoulder tip or scapula if there is irritation of the diaphragm (the sensory innervation of which is by the phrenic nerve, spinal nerve root C4). Shoulder-tip pain is not a feature of urological disease.

## **HAEMATURIA**

While haematuria is only relatively rarely an emergency (presenting as clot retention, clot colic, or anaemia), it is such an alarming symptom that it may cause a patient to present to the emergency department.

Blood in the urine may be seen with the naked eye (variously described as macroscopic, frank, or gross haematuria), or may be detected on urine dipstick (dipstick haematuria) or by microscopic examination of urine (microscopic haematuria, defined as the presence of >3 red blood cells per high power microscopic

field). Just 5 mL of blood in 1 L of urine is visible with the naked eye. Dipstick tests for blood in the urine test for haemoglobin rather than intact red blood cells. A cause for the haematuria cannot be found in a substantial proportion of patients despite investigations in the form of flexible cystoscopy, renal ultrasonography, and intravenous urography (IVU) (no cause for the haematuria is found in approximately 50% of patients with macroscopic haematuria and 60% to 70% of patients with microscopic haematuria; Khadra et al. 2000).

Haematuria has nephrological (medical) or urological (surgical) causes. Medical causes are glomerular and nonglomerular, for example, blood dyscrasias, interstitial nephritis, and renovascular disease. Glomerular haematuria results in dysmorphic erythrocytes (distorted during their passage through the glomerulus), red blood cell casts, and proteinuria, while nonglomerular haematuria (bleeding from a site in the nephron distal to the glomerulus) results in circular erythrocytes, the absence of erythrocyte casts, and the absence of proteinuria.

Surgical/urological nonglomerular causes include renal tumours, urothelial tumours (bladder, ureteric, renal collecting system), prostate cancer, bleeding from vascular benign prostatic enlargement, trauma, renal or ureteric stones, and urinary tract infection. Haematuria in these situations is usually characterised by circular erythrocytes and absence of proteinuria and casts.

Haematuria can be painless or painful. It can occur at the beginning of the urinary stream, at the end of the urinary stream, or be present throughout the stream. Haematuria at the beginning of the stream may indicate urethral or prostatic pathology. Haematuria at the end of the stream may indicate prostatic urethra or bladder neck pathology and that present throughout the stream of urine may indicate renal or bladder pathology.

Associated symptoms help determine the cause. Associated renal angle pain suggests a renal or ureteric source for the haematuria, whereas suprapubic pain suggests a bladder source. Painless frank haematuria is not infrequently due to bladder cancer.

As stated above, while patients sometimes present acutely to their family doctors or to hospital emergency departments with haematuria, it is seldom a urological emergency, unless the bleeding is so heavy that the patient has become anaemic as a consequence (this is rare), or the bladder or a ureter has become blocked by clots (in which case the patient presents with retention of urine or with ureteric colic, which may mimic that due

to a stone). We investigate all patients with haematuria, and recommend, as a bare minimum, urine culture and cytology, renal ultrasonography, and flexible cystoscopy, with more complex investigations such as an IVU or computed tomography (CT) scan in selected groups.

#### **OLIGURIA, ANURIA, AND INABILITY TO PASS URINE**

Anuria is defined as complete absence of urine production and usually indicates obstruction to the urinary tract. The level of obstruction may be at the outlet of the bladder, or at the level of the ureters bilaterally. Unrelieved bilateral urinary tract obstruction leads rapidly to acute renal failure, which may have very serious consequences (e.g., hyperkalaemia, fluid overload).

If the level of obstruction is at the outlet of the bladder, abdominal examination will reveal a percussable and palpably distended bladder. Urine will be present in the bladder on catheterisation, and urine output will resume once a catheter has bypassed the obstruction. The commonest cause is benign prostatic enlargement and less commonly malignant enlargement of the prostate.

If the obstruction is at the level of the lower ureters or ureteric orifices, the bladder will not be palpable or percussable. Catheterisation will reveal no or a very low volume of urine in the bladder and there will be no improvement in urine output, or of renal function post-catheterisation. Causes include locally advanced prostate cancer, extensive involvement of the trigone of the bladder by bladder cancer, and locally advanced cervical or rectal cancer. Rectal or vaginal examination may reveal a cervical, prostatic, or rectal cancer and cystoscopic examination of the bladder may demonstrate a bladder cancer.

Bilateral obstruction higher up the ureters may be due to extensive lymph node metastases to the pelvic and para-aortic nodes from distant malignancy, retroperitoneal fibrosis, and rarely bilateral ureteric stones. Evidence of a malignancy elsewhere may be found on clinical examination. The diagnosis is usually made on the basis of excluding obstruction at the outlet of the bladder and in the lower ureters and by radiographic imaging (ultrasound and abdominal CT).

Oliguria is scanty urine production, and more precisely is defined as urine production of less than 400 mL/day in adults and less than 1 mL/kg of bodyweight per hour in children. The causes are prerenal (e.g., hypovolaemia, hypotension), renal (e.g., acute vasculitis, acute glomerular lesions, acute interstitial nephritis, and acute tubular necrosis from nephrotoxic drugs, toxins, or

sepsis), and postrenal causes (as for anuria, but where the degree of obstruction has not yet reached a level critical enough to stop urine production completely).

### **SUPRAPUBIC PAIN**

Suprapubic pain can be caused by overdistention of the bladder, and inflammatory, infective, and neoplastic conditions of the bladder. All such conditions may present as an emergency. Bladder overdistention may result from bladder outflow obstruction, e.g., by enlarged prostate, urethral stricture, etc. Painful inability to empty the bladder is defined as urinary retention.

Urinary tract infection is usually associated with urethral burning or scalding on voiding; frequent, low-volume voiding; and a feeling of incomplete bladder emptying with an immediate desire to void again. The urine may be offensive to smell.

Inflammatory conditions of the bladder such as interstitial cystitis can also cause suprapubic pain as can carcinoma in situ. Gynaecological causes of suprapubic pain include endometriosis, fibroids, and ovarian pathology. Gastrointestinal causes of suprapubic pain include inflammatory and neoplastic bowel disease and irritable bowel syndrome.

### **SCROTAL PAIN AND SWELLING**

Scrotal pain may arise as a consequence of pathology within the scrotum itself (e.g., torsion of the testicles or its appendages, epididymo-orchitis) or it may be referred from disease elsewhere (e.g., the pain of ureteric colic may be referred to the testis).

The classic presentation of testicular torsion is one of sudden onset of acute pain in the hemiscrotum, sometimes waking the patient from sleep. It may radiate to the groin and/or the loin. There may be a history of mild trauma to the testis in the hours before the acute onset of pain. Similar episodes may have occurred in the past, with spontaneous resolution of the pain, suggesting torsion with spontaneous detorsion. Patients will be in considerable pain. They may have a slight fever. They do not like the testis being touched and will find it difficult to walk and to get up on the examination couch, as movement exacerbates the pain. The testis is usually swollen, very tender to touch, and may appear abnormally tense (if the patient lets you squeeze it!). It may be high-riding (lying at a higher than normal position in the scrotum) and may lie horizontally due to twisting of the cord. The testis may feel hard and there may be scrotal wall erythema.

Epididymo-orchitis may present with similar symptoms. The localisation of tenderness in the epididymis and the absence of testicular tenderness may help to distinguish epididymo-orchitis from testicular torsion, but in many cases it is difficult to make a precise diagnosis on clinical grounds alone, and often testicular exploration is the only way of establishing the diagnosis with certainty.

Other scrotal pathology may present as acute scrotal swelling leading to emergency presentation. Rarely testicular tumours present as an emergency with rapid onset (days) of scrotal swelling. Very rarely they present with advanced metastatic disease (see Chapter 9).

### **PRIAPISM**

Priapism is a painful persistent prolonged erection not related to sexual stimulation. Its causes are summarised in Chapter 6. Knowledge of these causes allows appropriate questions to be asked during history taking. The two broad categories of priapism are low flow (most common) and high flow. Low-flow priapism is essentially due to haematological disease, malignant infiltration of the corpora cavernosa with malignant disease, or drugs. High-flow priapism is due to perineal trauma, which creates an arteriovenous fistula. It is painless, unlike low priapism where ischaemia of the erectile tissue causes pain.

The diagnosis of priapism is usually obvious from the history and examination of the erect, tender penis (in low-flow priapism). Characteristically the corpora cavernosa are rigid and the glans is flaccid. Examine the abdomen for evidence of malignant disease and perform a digital rectal examination to examine the prostate and check anal tone.

### **BACK PAIN AND UROLOGICAL SYMPTOMS**

Occasionally, patients with urological disease present with associated back pain. In some cases this may be the very first symptom of urological disease and it may be so severe that the patient may present acutely to the emergency department. In broad terms, there are two broad categories of disease that may present with back pain and urological symptoms: neurological conditions, and malignant conditions of urological or nonurological origin.

#### **Neurological Disease**

Patients with neurological disease may present with both back pain and disturbed lower urinary tract, disturbed bowel, and dis-

turbed sexual function. Such conditions include spinal cord and cauda equina tumours and prolapsed intervertebral discs. In all of these conditions back pain is the most common early presenting symptom. It is usual gradual in onset and progresses slowly, but relentlessly. Associated symptoms suggestive of a neurological cause for the pain include pins and needles in the hands or feet, weakness in the arms (cervical cord) or legs (lumbosacral spine), urinary symptoms such as hesitancy and a poor urinary flow, constipation, loss of erections and seemingly bizarre symptoms such as loss of sensation of orgasm or absent ejaculation. From time to time the patient may present in urinary retention. It is all too easy to assume that this is due to prostatic obstruction if a focused neurological history is not sought and a focused neurological examination is not performed.

### **Malignant Disease**

Malignant tumours may metastasize to the vertebral column, where they may compress the spinal cord (spinal cord compression) or the nerve roots that comprise the cauda equina. Examples include urological malignancies such as prostate cancer, and nonurological malignancies such as lung cancer. In so doing they may cause both back pain and disturbed urinary, bowel, and sexual function. The pain of vertebral metastases may be localised to the area of the involved vertebra, but may also involve adjacent spinal nerve roots, causing radicular pain. Interscapular pain that wakes the patient at night is characteristic of a metastatic deposit in the thoracic spine.

The physical sign of spinal cord compression is a sensory level, but this tends to occur late in the day in the course of the condition. Remember, however, that a normal neurological examination does not exclude a diagnosis of cord compression. If, on the basis of the patient's symptoms, you suspect cord compression, arrange for a magnetic resonance imaging (MRI) scan without delay.

Malignant infiltration of retroperitoneal lymph nodes by, for example, testicular cancers or lymphoma can also cause back pain.

As a general rule, if a patient presents with bizarre symptoms that are difficult to explain, consider the possibility of a neurological cause.

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## Chapter 2

# Lower Urinary Tract Emergencies

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John Reynard

### ACUTE URINARY RETENTION

#### Definition

Painful inability to void, with relief of pain following drainage of the bladder by catheterisation.

The combination of reduced or absent urine output with lower abdominal pain is not in itself enough to make a diagnosis of acute retention. Many acute surgical conditions cause abdominal pain and fluid depletion, the latter leading to reduced urine output, and this reduced urine output can give the erroneous impression that the patient is in retention, when in fact they are not. Thus, central to the diagnosis is the presence of a *large* volume of urine, which when drained by catheterisation, leads to resolution of the pain. What represents 'large' has not been strictly defined, but volumes of 500 to 800 mL are typical. Volumes <500 mL should lead one to question the diagnosis. Volumes >800 mL are defined as acute-on-chronic retention (see *Is It Acute or Chronic Retention?* below).

#### Pathophysiology

There are three broad mechanisms:

- increased urethral *resistance*, i.e., bladder outlet obstruction (BOO)
- low bladder *pressure*, i.e., impaired bladder contractility
- interruption of sensory or motor innervation of the bladder

#### Causes in Men

The commonest cause is benign prostatic enlargement (BPE) due to benign prostatic hyperplasia (BPH) leading to BOO; less common causes include malignant enlargement of the prostate, urethral stricture, and, rarely, prostatic abscess.

Urinary retention in men is either *spontaneous* or *precipitated by an event*. Precipitated retention is less likely to recur once the event that caused it has been removed. Spontaneous retention is more likely to recur after a trial of catheter removal, and therefore is more likely to require definitive treatment, e.g., transurethral resection of the prostate (TURP). Precipitating events include anaesthetics and other drugs (anticholinergics, sympathomimetic agents such as ephedrine in nasal decongestants); nonprostatic abdominal or perineal surgery; and immobility following surgical procedures, e.g., total hip replacement.

#### **Causes in Women**

There are more possible causes in women, but acute urinary retention is less common than it is in men. The causes include pelvic prolapse (cystocele, rectocele, uterine), the prolapsing organ directly compressing the urethra; urethral stricture; urethral diverticulum; postsurgery for 'stress' incontinence; Fowler's syndrome (impaired relaxation of external sphincter occurring in premenopausal women, often in association with polycystic ovaries); and pelvic masses (e.g., ovarian masses) (Fowler 2003).

#### **Causes in Either Sex**

A wide variety of pathologies can cause urinary retention in both men and women: haematuria leading to clot retention; drugs (as above); pain (adrenergic stimulation of the bladder neck); postoperative retention; sacral (S2–S4) nerve compression or damage—so-called cauda equina compression (due to prolapsed L2–L3 disc or L3–L4 intervertebral disc, trauma to the vertebrae, benign or metastatic tumours); radical pelvic surgery damaging the parasympathetic plexus (radical hysterectomy, abdominoperineal resection); pelvic fracture rupturing the urethra (more likely in men than women); neurotropic viruses involving the sensory dorsal root ganglia of S2–S4 (herpes simplex or zoster); multiple sclerosis; transverse myelitis; diabetic cystopathy; damage to dorsal columns of spinal cord causing loss of bladder sensation (tabes dorsalis, pernicious anaemia).

#### **Neurological Causes of Retention—A Word of Warning!**

It is all too easy to assume that urinary retention in a man is due to BPH. Of course this is by far the commonest cause in elderly men, but in the younger man (below the age of 60, but even in some men older than 60), spend a few moments considering whether there might be some other cause. Similarly, in women,

where retention is much less common than in men, think *why* the patient went into retention.

Be wary of the patient with a history of constipation and be particularly wary where there is associated back pain. We all get back pain from time to time, but pain of neurological origin, such as that due to a spinal tumour or due to cauda equina compression from a prolapsed intervertebral disc (pressing on S2–S4 nerve roots, thereby impairing bladder contraction) may be severe, relentless, and progressive. The patient may say that the pain has become severe in the weeks before the episode of retention. Nighttime back pain and sciatica (pain shooting down the back of the thigh and legs), which are relieved by sitting in a chair or by pacing around the bedroom at night, are typical of the pain caused by a neurofibroma or ependymoma affecting the cauda equina. Interscapular back pain is typically caused by tumours that have metastasized to the thoracic spine.

Altered sensation due to a cauda equina compression can manifest as the inability to tell whether the bladder is full, inability to feel urine passing down their urethra while voiding, and difficulty in knowing whether one is going to pass faeces or flatus.

Male patients with a neurological cause for their retention (such as spinal tumour) may report symptoms of sexual dysfunction that may appear bizarre (and may therefore be dismissed). They might have lost the ability to get an erection or have lost the sensation of orgasm. They might complain of odd burning or tingling sensations in the perineum or penis.

It doesn't take more than a minute or two to ask a few relevant questions (Are you constipated? Have you had back pain? Do your legs feel funny or weak?), to establish whether the patient has a sensory-level sign (the cardinal sign of a cord compression) and other neurological signs and to test the integrity of the sacral nerve roots that subserve bladder function—S2 to S4. In the male patient, this can be done by squeezing the glans of the penis while performing a digital rectal examination (DRE). Contraction of the anus, felt by the physician's palpating finger, indicates that the afferent and efferent sacral nerves and the sacral cord are intact. This is the bulbocavernosus reflex (BCR). In women, once catheterised, the 'same' reflex can be elicited by gently tugging the catheter onto the bladder neck, again while doing a DRE. Again, contraction of the anus indicates that the afferent and efferent sacral nerves and the sacral cord are intact.

If you don't know about these rare causes of retention, you won't think to ask the relevant questions. Missing the diagnosis

in such cases can have profound implications for the patient (and for you!). One should have a low threshold for arranging an urgent magnetic resonance imaging (MRI) scan of the thoracic, lumbar, and sacral cord, and of the cauda equina in patients who present in urinary retention with these additional symptoms or signs.

#### **Risk Factors for Postoperative Retention**

Postoperative retention may be precipitated by instrumentation of the lower urinary tract; surgery to the perineum or anorectum; gynaecological surgery; bladder overdistention; reduced sensation of bladder fullness; preexisting prostatic obstruction; and epidural anaesthesia. Postpartum urinary retention is not uncommon, particularly with epidural anaesthesia and instrumental delivery.

#### **Urinary Retention: Initial Management**

Urethral catheterisation is the mainstay of initial management of urinary retention. This relieves the pain of the overdistended bladder. If it is not possible to pass a catheter urethrally, then a suprapubic catheter will be required. Record the volume drained—this confirms the diagnosis, determines subsequent management, and provides prognostic information with regard to outcome from this treatment.

#### **IS IT ACUTE OR CHRONIC RETENTION?**

There is a group of elderly men who are in urinary retention, but who are not aware of it. This is so-called high-pressure chronic retention. Mitchell (1984) defined high-pressure chronic retention of urine as maintenance of voiding, with a bladder volume of >800 mL and an intravesical pressure above 30 cm H<sub>2</sub>O, often accompanied by hydronephrosis (Abrams et al. 1978, George et al. 1983). Over time this leads to renal failure. The patient continues to void spontaneously and will often have no sensation of incomplete emptying. His bladder seems to be insensitive to the gross distention. Often the first presenting symptom is bed-wetting. This is such an unpleasant and disruptive symptom that it will cause most people to visit their doctor. In such cases inspection of the abdomen will show gross distention of the bladder, which may be confirmed by palpation and percussion of the tense bladder.

Sometimes the patient with high-pressure chronic retention is suddenly unable to pass urine, and in this situation so-called acute-on-chronic high-pressure retention of urine has developed.

On catheterisation, a large volume of urine is drained from the bladder (often in the order of 1 to 2L and sometimes much greater) The serum creatinine will be elevated and an ultrasound will show hydronephrosis (Fig. 2.1) with a grossly distended bladder.

Recording the volume of urine obtained following catheterisation can help define two groups of patients, those with acute retention of urine (retention volume <800mls) and those with acute-on-chronic retention (retention volume >800mls). Prior to catheterisation, if the patient reports recent bedwetting you may suspect that you are dealing with a case of high-pressure acute-on-chronic retention. The retention volume will confirm the diagnosis.

Where the patient has a high retention volume (more than a couple of litres), the serum creatinine is elevated, and a renal ultrasound shows hydronephrosis, anticipate that a post-obstructive diuresis is going to occur. This can be very marked and is due to a number of factors:

- Reduction in urine flow through the loop of Henle removes the 'driving force' behind development of the corticomedullary concentration gradient. In addition, continued perfusion of the kidney effectively also 'washes out' this gradient, which is

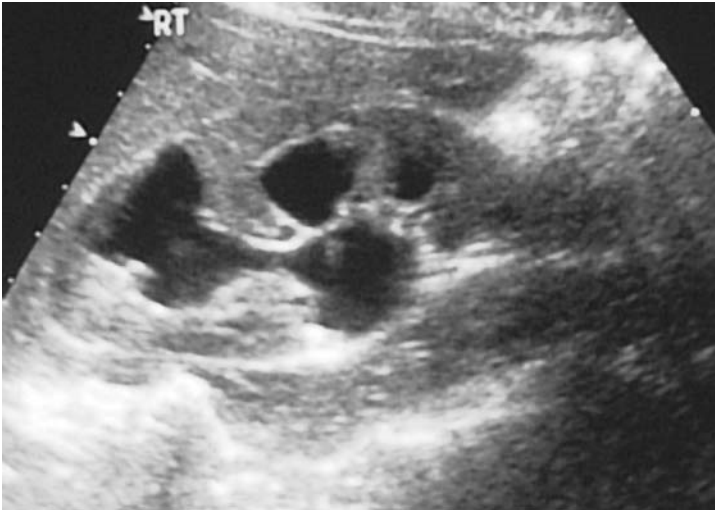


FIGURE 2.1. Hydronephrosis in a case of high-pressure chronic retention.

essential for allowing the kidney to concentrate urine. Once normal flow through the nephron has recommenced following emptying of the bladder and removal of the back pressure on the kidney, it takes a few days for this corticomedullary concentration gradient to be re-established. During this period, the kidney cannot concentrate the urine and a diuresis occurs until the corticomedullary concentration gradient is re-established.

- The elevated serum urea acts as an osmotic diuretic.
- Excessive salt and water, laid down during the period of retention, is appropriately excreted by the kidney.

Usually the patient comes to no harm from this diuresis, even when several litres of urine are excreted per 24 hours. However, occasionally the intravascular volume may fall and postural hypotension may develop. One good way of anticipating this is to record lying and standing blood pressure. If there is a large discrepancy between the two, consider intravenous fluid replacement with normal saline.

#### **WHAT TO DO NEXT FOR THE MAN WITH ACUTE RETENTION**

Precipitated retention often does not recur. Spontaneous retention often does.

Precipitated urinary retention should be managed by a trial of catheter removal. In spontaneous retention, many urologists will try to avoid proceeding straight to TURP after just one episode of retention, instead recommending a trial of catheter removal, with or without an alpha blocker, in the hope that the patient will void spontaneously and avoid the need for operation. A trial without catheter is clearly not appropriate in cases where there is back pressure on the kidneys—high-pressure retention. About a quarter of men with acute retention will void successfully after a trial without catheter (Djavan et al. 1997, Hastie et al. 1990). Of those who pass urine successfully after an initial episode of retention, about 50% will go back into retention within a week, 60% within a month, and 70% after a year. This means that after 1 year, only about one in 5 to 10 men originally presenting with urinary retention will not have gone back into retention. Recurrent retention is more likely in those with a flow rate <5 mL/s or average voided volumes of <150 mL. An alpha blocker started 24 hours before a trial of catheter removal increases the chances of voiding successfully (30% taking placebo voiding successfully, and 50% taking an alpha doing so; McNeill et al. 1999). However,

whether continued use of an alpha blocker after an episode of acute retention reduces the risk of a further episode of retention (McNeill et al. 2001) isn't yet known.

So, a trial of an alpha blocker is reasonable, but a substantial number of men with spontaneous acute retention of urine will end up going back into retention and will therefore eventually come under the care of a urologist for TURP.

#### **RETENTION IN PATIENTS WITH A CATHETERISABLE STOMA**

An increasing number of patients have undergone reconstructive surgery involving the formation of a catheterisable stoma, such as a Mitrofanoff stoma.

Patients with a Mitrofanoff catheterisable stoma are sometimes unable to pass a catheter into their stoma. This not infrequently occurs after spinal or other surgery. The spinal surgery may change the 'angle' of the stoma or their bladder may become overfull in the post-operative period which again may distort the stoma to the extent that it is difficult to pass a catheter. In this situation, attempting to pass the catheter yourself, using plenty of lubrication, is reasonable. If you fail, try to pass a floppy guidewire through the stoma (preferably under radiological control if this is available). This may pass into the bladder where the catheter will not. A catheter, with the tip cut off, can then be passed over the guidewire and into the bladder. If this fails, pass a suprapubic catheter, empty the bladder, and then usually the patient will be able to pass their catheter without any problems.

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