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A guide to waterworks for men

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Seeing a urologist often involves discussing things that men may have been bothered by for some time, but have managed to ignore. Conditions such as weakening of erections and slowing of the urinary stream are often thought to be part of the ageing process. They can, however, cause significant disruption to a man's life. Waking multiple times a night to void, or losing the ability to have intercourse with your partner, take away critically important activities — sleep and sex. These issues can often be improved by a visit to the urologist. At times they may need no treatment, just reassurance that all is okay; and for other patients, more active interventions are needed.

As urologists, we find some topics are difficult to give a clearcut answer to — such as the benefit or risks of 'PSA testing', which we discuss later in this chapter. Other issues are red flags that should not be left on the backburner, and need urgent attention, such as when a patient notices blood in the urine. This chapter will discuss the above topics, with the goal of helping men to understand what can be done to improve symptoms that bother them, to help them decide when they need to see a urologist, and to assist them to understand the PSA blood test and the (often dreaded) rectal examination that should go with it.

Erectile dysfunction

Erectile dysfunction (ED) is defined as the persistent inability to attain and maintain an erection sufficient to permit satisfactory sexual performance.¹ Although a man may consider weakening erections to be a benign condition, it can be both stressful and dramatically impact on the quality of life of the man and his partner.

Additionally, as erections are a product of the interactions between nerves, vessels, and the tissues of the penis, there is an evolving body of information that suggests ED may in fact be an early sign of vascular disease. This may also involve coronary or peripheral vessels, and so ED may suggest a man is at risk of similar problems in other vessels — in the heart muscle, brain, and legs.

The likelihood of suffering from ED increases with age, and is common. In one large study looking at men aged 40–70 years, half of them had some degree of erectile dysfunction.²

There are many similarities in the risk factors for ED and cardiovascular disease that put men at risk of heart attack and stroke (see the chapter in this book titled ‘Young at Heart’). These include obesity, diabetes, hypertension, smoking, and high cholesterol. The upside to this is that many of these conditions can be treated, and men who start exercising even in midlife have a significantly lower risk of ED than counterparts who lead a sedentary lifestyle. More than that, there can be improvement in erectile function with lifestyle modifications to manage these problems (now there’s real motivation for an evening stroll!).

Notably, men who have had prostate cancer treatment (surgery, external beam radiotherapy, or seed brachytherapy) are at risk of suffering from erectile dysfunction. The literature quotes a broad range for men who may be affected³ (25–75%), and once their cancer has been treated, this is definitely a significant concern for many men. For patients who have surgery, the factors that are important in predicting the likelihood of post-operative

potency include pre-operative erectile function, the patient's age, and the ability to surgically spare the nerves involved in potency — one side or both sides (generally influenced by the nature of the cancer).

What to expect when you go to the urologist

Like most consultations with a doctor, there will be a discussion about the problem, an examination, a few tests, and management plan and treatment. Thereafter, men will return for review to determine if they are suffering any side effects of the treatment, whether the treatment is working, and whether they are happy with the results. These consultations may, and often should, involve a man's partner, but this is of course an individual choice.

The discussion about erections will enquire about the duration of the problem, how rapidly it came on, the nature of the problem — specifically, is it just the ability to obtain and sustain an erection, or issues with arousal, ejaculation, and orgasm. There may be a simple questionnaire for you to fill out, to help work out what exactly the issue is.

The specialist may also ask you about depression, not because you necessarily seem depressed, but because depression is so common in society and is a common cause for problems with libido and erections. Treatment of depression may improve a man's interest in sex and his ability to perform. Oftentimes, the specialist may also ask you about your relationship with your partner, as relationship problems are often accompanied by sexual dysfunction.

After you have been examined, there will be a few simple tests. They may include a blood test to check your testosterone levels, and other hormone levels to ensure they are within the normal range. Occasionally, other conditions such as thyroid disease, or rarely tumours of the pituitary gland, may be the cause of failing erections. It is important to determine if this is the case so that these conditions can be treated. This will hopefully

improve the erectile dysfunction and prevent other sequelae of the underlying problem. However, in our experience, the majority of men with ED do not have an underlying condition that needs treatment.

Now for the important association: as mentioned earlier, healthy erections are a great proxy measure of healthy blood vessels. If the erections are failing, this may often be a result of disease in the blood vessels. Conditions that affect penile vessels often affect all other vessels too. This means that the vessels in your heart, brain or legs may also be involved. You will often get asked questions about diabetes, blood pressure, cholesterol and, of course, smoking. A trip to the urologist may even result in a visit to the cardiologist. This is a good thing! Why? Because you may have discovered that you have some disease in your vessels that can be improved with a change in lifestyle, *before* you have suffered an adverse event like a heart attack. In this case, being proactive about erections may give a man the chance to reduce his risk of other serious health problems by cessation of smoking, increased exercise, and improved diabetic or blood pressure control. All of that said, the majority of men who are seen by a urologist will not need this work-up. If you are well, exercise, and have no significant history of heart disease, odds are you have a low risk of needing further investigation.

Treatment

Okay, the (awkward) questions are out of the way, the examination is done with, you have been found to be fit and otherwise healthy (hopefully): ‘What are we going to do about this problem Doc?’

The goal of treatment is to manage the cause, and not just the symptom. On the whole though, unless there is a very specific cause of ED, such as an underlying hormonal cause, a psychological cause, or rare injury-related cause, ED tends to be managed rather than permanently cured.

The first thing will be lifestyle modification, and this will be managed in conjunction with your general practitioner (GP) — notably stopping smoking, cutting back on alcohol (there is a reason it's called the 'Fosters flop'), and taking up regular exercise. A GP can undertake a detailed health check, including a comprehensive history, examination and preventative screen for many conditions — actually this is not a bad idea anyway, regardless.

At this point, the urologist may suggest a trial of oral medications such as Viagra (Sildenafil), Cialis (Tadalafil), or Levitra (Vardenafil). All of these are of a similar class of drug, but are somewhat different in their side effect profile, and duration of effect. If you have tried one of these agents, and it has not worked, it doesn't mean that one of the other drugs won't be successful. Several common reasons these drugs do not work include taking the wrong dose (too low), failing to wait an adequate period of time for the medication to work (minimum of 30 minutes, but generally 60 minutes, and sometimes 2 hours — which may be further delayed if the tablets have been taken with a fatty meal).

Some men may choose not to take these tablets due to side effects, such as pronounced headache, or blurred vision. And some are not allowed to take them, such as men who take nitrates (for example, anginine for their heart disease). The reason for this is that the combined effect of these agents can result in dangerously low blood pressure that is difficult to treat.

For men in whom the tablets have not been successful, the next option to be considered is the use of injectable medication. In our experience, when first broached, this topic tends to send men running for the hills, and many say the mere idea makes them cross their legs. However, often men find the reality far less challenging than the idea. Injectable medications use a very small needle. They either come pre-packaged, or are produced by a compounding chemist. They are in fact effective in just over two thirds of men. There are a number of combinations of medication that can be included by the compounding chemist. This option

requires a man to draw up the medication from a small bottle himself. Like most things that people had not planned to do, it takes a little getting used, but is very manageable, and soon enough can become second nature. With advice and support from your urologist, and a few sessions with someone teaching you how to use the injections, and how to avoid problems, this can quickly become an acceptable option for many people. If a man cannot manage this on his own, he may ask his partner for help.

Other options include non-pharmaceutical choices like a penile pump. Importantly, men with bleeding disorders or on warfarin are advised not to use penile pumps.

This involves drawing blood into the penis with the vacuum device, and then placing a tight band around the base of the penis, to prevent the blood from escaping.

No option is perfect, and each has its downside. Frank discussions, and trial and error will help a man work out what is best for each individual.

In some cases, when none of the above techniques have proven to be of benefit, there are surgical options to provide men with erections. These options are definitive, in that once a man has undergone surgery, there is no scope to go back and try less invasive techniques. There are a number of different procedures that can be performed. They essentially involve placement of prostheses within the erectile tissue of the penis. We have found that they have very high satisfaction rates among men who undergo these operations.

Key points

1. Erectile dysfunction is common.
2. Erectile dysfunction shares risk factors for heart attack, strokes, and vascular disease in the legs.
3. Lifestyle modification can improve the quality of erections.

Difficulty voiding

In simple terms, the lower urinary tract (made up of the bladder, prostate, and the urethra — which carries urine from the bladder, through the prostate to the outside world) has two functions — storage and voiding. Reasons for seeking a urological opinion range from things simply ‘not being what it used to be when I was younger’, to symptoms that can be very frustrating and significantly affecting a man’s quality of life.

Common symptoms are a feeling of incomplete emptying, weak stream, dribbling when finished, straining to urinate, prolonged time to urinate, frequency, urgency, and waking frequently at night to urinate.

The purpose of seeing a doctor for this situation is both to treat symptoms and importantly, to determine whether there is an underlying condition contributing to, or causing the problem. For instance, medical problems such as diabetes, multiple sclerosis, heart failure, and Parkinson’s disease (among others) may impact on the function of the bladder. Some medications can influence urine production. The volume of urine produced overnight can also be influenced by when certain tablets are taken (for example, diuretics), and by the timing of fluid intake (in the morning, afternoon or the evening).

Once you have had a detailed discussion with your specialist about the nature and extent of your symptoms, you will be examined. This will involve an assessment of the low abdomen (to ensure the bladder is not full all the time), the genitalia, and the prostate. It is important to notify your doctor if you have had any change in sensation in the saddle region/legs, or loss of power in the lower limbs. Although uncommon, this may suggest a problem involving the spine.

Thereafter, a few basic tests will be required. Urinary tract infection will be tested for in a urine test. Kidney function will be measured by a simple blood test.

The blood test will also check for prostate-specific antigen (PSA), to give information about the size of the prostate. You may have previously had your PSA tested as part of an assessment of your risk of prostate cancer. There are many causes of a high PSA, such as an enlarged prostate, infection, or any sort of operation or instrumentation of the urinary tract. Higher PSA values (suggesting larger prostate glands) have been correlated with an increased likelihood of difficulty voiding, or the inability to void (urinary retention) but don't correlate very well with the severity of symptoms.

Often, a specialist will perform some other special tests in their office — a flow rate and post-void residual study in their office. This involves urinating into a cone-shaped device that will measure the volume and speed of urine output — a speedometer for the urine. This provides information about the nature of the voiding pattern: Is it fast/slow? What volume of urine is passed? How much is left behind in the bladder? Then a basic ultrasound can measure how much is left behind in the bladder.

The specialist may often arrange for an ultrasound to look at the kidneys and also the size of the prostate gland. This study will also look at whether there is any suggestion of blockage to normal drainage of the kidneys, and once again how efficiently you empty your bladder. As the prostate enlarges and blocks the urethra (the tube leading from the bladder), the bladder has to work harder to empty completely. Like any muscle, when it works hard it can get tired and sometimes 'gives up' before the bladder is empty; hence, why urologists will check the residual volume of urine in the bladder. The greater the volume, the more the bladder is tired, which means the more the bladder is blocked by the prostate.

Fortunately, the vast majority of men will not need a procedure performed to examine the bladder directly. This is called a cystoscopy (which is the passage of a small telescope via the eye of the penis, to directly examine the bladder, prostate, and urethra).

Exceptions to this rule include men who have had blood in the urine, previous surgery and/or previous stricture of the urethra, who generally require this investigation.

Treatment

Many men with lower urinary tract symptoms are not sufficiently bothered by their symptoms to need intervention with medication or surgery. These men can simply be observed. Some will improve, others remain stable, while in some, symptoms will progress. However, this is usually not a rapid process. The vast majority of men will remain symptomatically stable for about a year.

Often, reassurance that there is no concerning medical cause (specifically nothing to suggest that the man has cancer), and no medical reason to intervene at this stage, leaves men feeling far more relaxed about their current situation.

These men will be monitored periodically, and can be given advice about altering the timing of their fluid intake: limiting their caffeine and alcohol intake from evening to morning, reviewing the timing of their medication, and managing other conditions (for example, constipation, which can make it difficult for men to empty their bladders due to the close anatomical relationship of the bowel and the bladder).

Unless there is a clear indication for surgery, such as an inability to void (requiring a catheter), impaired kidney function due to poor bladder emptying, bladder stones, recurrent infections, or recurrent bleeding from the prostate, men can be offered medication to manage urinary symptoms.

A walk down the supermarket aisle or the chemist will highlight the number of 'natural' remedies available for the management of this common complaint. These are typically plant extracts, and there is a diverse range that includes pumpkin seeds, South African star grass, bark of the African plum tree, among others. There is a significant discrepancy in the effects of the same

extract when produced by different companies, and they cannot be thought of as equivalent. Even the same product from the same producer may have different strength dose in different batches. No trial to date has shown that these agents cause a reduction in prostate size, nor a decrease in disease progression. So, some caution is needed in using such supplements, as while we have no proof that they don't cause harm, we don't have high quality proof that they help either.

Several classes of medication are frequently used by the medical profession to assist with urinary symptoms. The first is a class of medications called alpha blockers. It was traditionally thought that these drugs acted mainly by relaxing muscle within the prostate gland. Studies have since suggested that there may be other sites where these agents work — for example, directly on the spinal cord. Whatever the mechanism of action, these agents target specific receptors found in the prostate (alpha 1A adrenoceptors). The main side effect of using alpha blockers is low blood pressure, resulting in dizziness — particularly when standing. More refined versions of these medications tend to have a lower side-effect profile when compared to less specific alpha blockers. An example of a more selective medication is called Tamsulosin.

Fortunately, men often experience benefit within hours to days, and continue to improve over the first few weeks. For many, medication will control their symptoms; however, it does require taking tablets on a daily basis.⁴ Symptoms will worsen for some men even while on medication, and they will likely need to proceed to surgery.

One of the rare complications of this medication is that it can cause problems with cataract surgery. Patients about to have cataract surgery should not start the medication, and should inform their ophthalmologist if they have previously been on it.

The next class of drugs are 5 alpha reductase inhibitors (Finasteride and Dutasteride). These agents block the conversion of testosterone to its active form (dihydrotestosterone or DHT) in

prostatic tissue, and result in a slow reduction in the size of the prostate (with a corresponding drop in the PSA). To be beneficial, patients must remain on these agents for 6–12 months. Typically, it is men with enlarged prostates who obtain benefit from these drugs. One benefit these drugs have over alpha blockers, is that they reduce the risk of being completely unable to void (quite an urgent situation called ‘retention’), and they also reduce the future need for surgery. They do have a more significant side effect profile though. Common side effects include reduced libido, erectile dysfunction and, less frequently, altered ejaculation. Breast enlargement with breast or nipple tenderness occurs in 1–2% of men. This may persist after cessation of the medication, and require surgical management. A contentious issue about using these drugs is the suggestion that there is an associated increase in the risk of significant prostate cancer. This correlation is still being widely debated.

For men with predominately what urologists call ‘storage symptoms’ (needing to pass urine urgently or frequently or getting up a lot at night to go but who still retain a sense of normal flow, and no difficulty emptying their bladder) other medications may be of benefit. The main class of drug used in this situation are called muscarinic receptor antagonists. These agents block stimulation of receptors on the cells of the muscle of the bladder. Side effects of this class of medication are caused by receptors being found at sites outside of the urinary tract, such as the salivary glands. This results in the frequent complaint of dry mouth.

Combination therapies (tablets that combine more than one medication together) are playing an increasing role. The most common combination is an alpha 1 blocker and 5 alpha reductase inhibitor. These agents have the benefit of symptomatic relief, and long-term reduction in the likelihood of retention or the need for surgery. Not surprisingly, combination therapy is associated with an increased side-effect profile when compared to either agent alone.

Additionally, there are several new medications in the management of these symptoms. The first is Cialis. You may recognise the name as one of the agents used to treat erectile dysfunction. Not surprisingly, many men have both problems (ED and LUTS). When researchers looked at the data, they found that there was significant improvement of urinary symptoms (when men were given 5 mg low dose Cialis) that was independent of the impact of their erections. As a relatively new agent in this field, it should be noted that the studies were all relatively short term, and unlike the common operation called a TURP, described below, there has been no long-term follow-up to monitor ongoing benefit.

The next medication that should be mentioned is Mirabegron (Betmiga).⁴ Betmiga is used to treat the ‘storage symptoms’ described above — frequency, urgency, urge incontinence and nocturia (needing to urinate often at night). For those who might be interested in the technical detail, the drug is called a beta3 adrenergic receptor agonist, which means it is designed to have a similar effect to the antimuscarinic medications. This medication stimulates bladder muscle relaxation. The goal is muscle relaxation, increased bladder capacity, and reduction in symptoms. It should not be used in people with poorly controlled blood pressure, as it can interfere with its management.

Surgical treatment

There are a number of surgical options available. Traditionally, this has involved transurethral resection of the prostate (often called a ‘TURP’ for short). This is a procedure carried out via the eye of the penis while the patient is under anaesthetic, which removes the inner portion of the prostate, with the intention of relieving the impediment to urinary flow and reduce symptoms.

Studies have shown TURP to significantly increase flow and reduce symptoms to an extent that exceeds that of medical therapy. The likelihood of needing repeat operation or further

surgery is thought to be about 12–15% at 5 years. Potential complications and side effects of the surgery include need for transient reinsertion of a catheter, bleeding with clots in the bladder, infection, scarring of the urethra or bladder neck, and weakening of erections. Another side effect is called retrograde ejaculation, which means that when a man ejaculates, the sperm fluid goes in to his bladder, and he passes it when he next urinates. This is not harmful, but will reduce the volume of the ejaculate. Men are relieved to hear that they will still have an orgasm.

In men with smaller prostates, it may not be necessary to resect tissue, and the option of incising tissue at the bladder neck, with a transurethral incision of prostate may suffice. This reduces or avoids the risk of a number of the above-mentioned complications.

In the contrasting situation of a very large prostate, open surgery (requiring a cut in the abdomen) may be considered when endoscopic treatment via the eye of the penis may not be feasible. The risk of needing a blood transfusion or causing urinary incontinence are increased with this approach compared to TURP.⁷

A new alternative to open enucleation of the prostate is an approach that sounds more like a science fiction weapon than a medical treatment, Holmium laser enucleation. This technique is not widely practised in Australia, but does have a lower side effect profile when compared to open surgery. Another laser technology that is gaining popularity is the Greenlight laser vaporisation of the prostate. One of the main benefits of this technique is that it can be performed while patients are on blood thinning medication (that would preclude other forms of surgery). Post-operative transfusion and clot-related issues are fewer in the laser group. Otherwise the risks are similar.

PSA and prostate cancer

Prostate cancer is a big topic, one that has filled many books, let alone a small segment of a chapter.⁵ Whether PSA screening

should be performed remains the source of heated debate among the medical profession.

So, the goal of this section is to discuss the merits and risks, to help men make an informed choice for themselves as individuals.

First, some important facts — several statistics from the Australian government's Cancer Australia website highlight the significance of this disease:⁶

- Prostate cancer is the most common cancer in men (other than non-melanoma skin cancer).
- In 2009 the average age at diagnosis was 67.4 years.
- The number of men diagnosed with prostate cancer is predicted to rise.
- In 2011, prostate cancer was the cause of 13.4% of cancer-related deaths in men.
- Survival from prostate cancer is increasing.

The logic by which men are screened for prostate cancer is the belief that perhaps early diagnosis and appropriate treatment will reduce the illness and deaths related to prostate cancer. But it gets more complicated than this simple explanation. The downside to screening is that many men may have a diagnosis of prostate disease that was in fact unlikely to ever cause a man harm, but results in them having unnecessary tests and even interventions, with a whole range of risks of complications they would never have faced.

The two major trials exploring this question released several years ago demonstrated somewhat conflicting results, and there have not been uniform recommendations regarding screening.

A major European trial has shown a reduction in prostate cancer death in a screened population; that is, every man is offered the screening test. Should that patient proceed to treatment for his cancer, he is exposed to the possible detrimental effects of therapy

In order to assist consumers and doctors, the Urological Society of Australia and New Zealand (USANZ) released a PSA-testing policy in 2009.⁷ Several of the key points were:

1. Based on recent data from one of two large randomised screening studies, there was a reduced risk of prostate cancer death with PSA testing and treatment in those patients in the 55- to 69-year age group after 7–8 years. Therefore, PSA-based testing, together with digital rectal examination (DRE), should be offered to men in this age group, after providing information about the risks and benefits of such testing.
2. Men under 55 years of age are less likely to be diagnosed with prostate cancer, but if they are diagnosed, they are more likely to die from prostate cancer than men greater than 55 years of age due to a reduced likelihood of dying from comorbid illnesses.
3. Many cancers currently found by PSA-based testing will be low grade, small volume disease that have excellent cause-specific survival rates at 10 years without immediate therapy. Active surveillance, with delayed treatment upon progression, should be discussed with selected patients with newly diagnosed prostate cancer to minimise morbidity of treatments and to reduce the incidence of the over-treatment effect noted in the larger screening studies.

(surgery or radiotherapy), with variable benefit in terms of survival. However, one thing is certain: for the first 8–9 years the survival curves of men screened and not screened are identical. Therefore, we can say unless a man has a clear 10-year life expectancy they will not benefit for PSA-based testing and early treatment of his prostate cancer. As the average male in Australia is expected to live until age 85 years, it would be rare to recommend PSA-based testing to any man over 75 years.

One strategy that has evolved in response to growing awareness about the nature of low risk prostate cancer is active surveillance. This is a program designed to monitor a patient found to have low volume, low risk prostate cancer, and not intervene unless findings point towards more significant pathology. This spares him from the detrimental effects of treatment.

So, for a man aged 45–50 who is well informed on the purpose of performing the test, in good health and likely to live a

further 10–15 years, particularly one with a family history of first-degree relative (or more than one) with prostate cancer (who may start screening at 40), it is entirely reasonable to have a PSA performed by your GP or urologist.

The results can then be seen in the context of prostate size, age, and baseline risk. Equally, if a man does not want treatment, regardless of what may be found through PSA testing and subsequent biopsy, or if they have a number of other significant medical problems, they may choose not to pursue PSA testing.

It is, at the end of the day, an individual choice for a man to make together with his GP or urologist, whether it is better to know than to not know.

The red flag

Unlike weakening erections, or difficulty voiding, seeing blood in the urine is not something that can be observed and ignored. Reassuringly, this frequently does not reflect disease that is hazardous to your health, but is important to have it checked.

Blood in the urine, or what doctors call ‘haematuria’, has both benign and malignant causes. These should be investigated by your GP in conjunction with a urologist.⁸ The concern is that the site of bleeding could be a cancer within the urinary tract. Other more common possibilities include infection, enlarged prostate, bladder stones, or even bleeding from the kidney.

Smoking is the number one cause for tumours of the lining of the kidneys, ureters and bladder. Given the bladder’s role as a storage unit, it has prolonged exposure to urine and its contents. Smoking cessation reduces the long-term risk of developing bladder cancer. If bladder cancer is the cause, it is important to be aware that the majority of bladder tumours are superficial and tend not to invade into the deeper muscle layers. This type of disease tends to recur after removal, but not progress to spread elsewhere in the body. It will require ongoing surveillance and management by a urological surgeon.

A small percentage of cases will have a predisposition to spread into the deeper layers and beyond, or may have begun to do so already. Even when a urologist feels he 'has removed it all', the survival rate may only be 50–70% at 5 years, indicating that bladder cancer remains a lethal cancer for many men. It is for this reason that ignoring this 'red flag' is a poor choice. The sooner a diagnosis is made, the better your urologist's chance of intervening at an appropriate time. To examine the cause of your presentation with haematuria, you will need a cystoscopic examination of the bladder, and imaging of the kidneys and their drainage in to the bladder.

Endnotes

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