

Why is the tap still on?

By Kalli Spencer

“I didn’t even know I had a prostate” and “what does the prostate do?” are questions many men often ask. Awareness and knowledge of this gland and its workings often only comes about once a diagnosis of prostate cancer or benign prostatic hypertrophy/hyperplasia (BPH or prostate enlargement) is made. Let’s take some time to consider the structure and function of this important gland which, when not operating optimally, can cause a significant impact on the quality of one’s life. One of the potential consequences is urinary incontinence and, as this is World Continence Week (21-27 June), we will focus on how incontinence may develop.

The prostate gland is located underneath the bladder in the pelvis. The urethra (tube carrying urine from the bladder to outside) passes through the centre of the prostate. Beneath the prostate is a muscle called the external urethral sphincter which is the “on and off tap” or valve that allows one to control and maintain continence. The sphincter forms part of the muscular pelvic floor which also assists with continence.

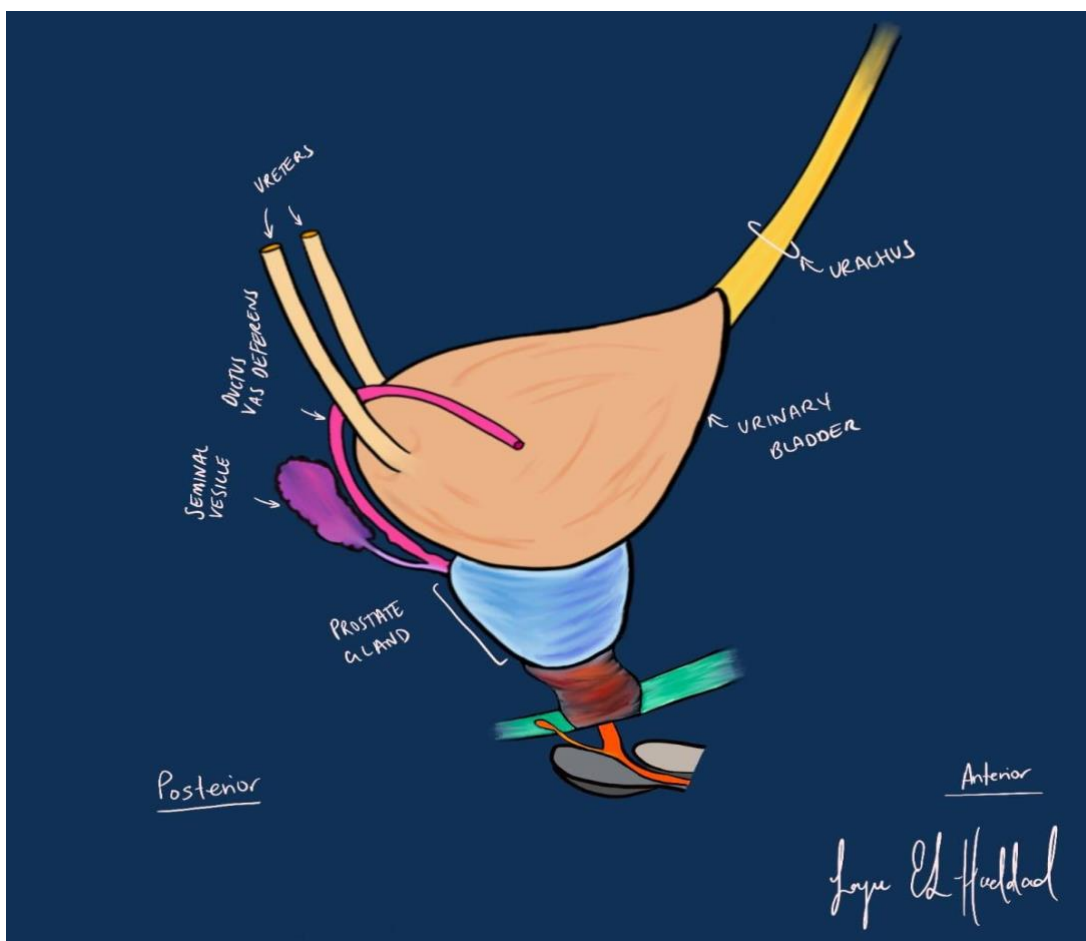


Photo credit: Joyce El-Haddad (Anatomist – University of New South Wales)

Caption:

The external urinary sphincter is represented by the reddish- brown structure beneath the prostate. The urethra emerges below in orange to exit the body via the penis.

The prostate is an accessory gland of the reproductive system and secretes prostatic fluid directly into the urethra during ejaculation. This combines with semen and has enzymes, proteins and minerals that help to nourish and protect the sperm within the seminal fluid.

As mentioned earlier, two major disease processes (BPH or cancer) can affect the prostate, and both usually occur as one ages (generally after the age of 40). The prostate may enlarge (BPH) and as it does so, it compresses the urethra which runs through its centre. As this happens, it may affect the flow of urine in a variety of ways: reducing the stream; creating a stop and start pattern to flow; the requirement of large amounts of intra-abdominal pressure to initiate a flow; and the feeling of incomplete emptying of the bladder after one has finished urinating, which subsequently results in frequent visits back to the toilet during the day, but also from one's bed at night which can be very disruptive. With time the bladder may overflow, resulting in incontinence leaving a wet patch or, in some cases, the complete inability to urinate at all, leading to a visit to the emergency department for a catheter to be inserted. The enlargement of this gland causes other complications too, such as the occurrence of multiple urinary tract infections, the formation of stones in the kidney or bladder and blood in the urine (haematuria). BPH can be treated with medication to assist in shrinking the prostate, failing which surgical options like Urolift (stapling the prostate open), steam therapy to evaporate prostate tissue to create a new channel, or the gold standard treatment, namely a transurethral resection of prostate (TURP) which is a minimally invasive procedure that employs various forms of energy such as electricity, heat or laser therapy to create a new channel through the prostate for easier urination. It is important to note that this benign condition does not in any way lead to prostate cancer. Someone with prostate cancer can, however, also have an enlarged prostate and experience any of the above symptoms mentioned above.

The two major interventions for prostate cancer treatment are radiation and surgery (radical prostatectomy). Radiation very rarely results in leakage of urine, but may irritate the bladder and cause the urgent desire to urinate or the need to urinate with increased frequency. Surgery to remove the prostate most certainly can put one at risk of developing stress urinary incontinence. But what do we mean by stress? It does not mean incontinence brought on by a stressful incident. By stress we mean that any rise in the pressure inside the abdomen (such as during coughing, sneezing, defecating, positional shifts or exercise) may press down on the bladder and cause urine to leak. In rare instances, it may continuously leak on its own.

Almost 80% of men experience some degree of incontinence after surgery, with most cases resolving by 6-12 weeks and very rarely beyond 1 year. Incontinence may occur as a result of damage to the external urethral sphincter resulting in sphincter incompetence; change in length of the remaining urethra; or scar tissue from the surgery resulting in a blockage (stricture)². If the cancer has invaded outside the capsule of the prostate and the surgeon has to remove a wider margin of tissue around it, it may not be possible to spare the nerve which supplies messages to the sphincter muscle to contract closed and maintain continence. The sphincter won't adequately close and urine will easily leak out. For purposes of the present discussion, we will focus on the initial visit and some of the diagnostic processes the urologist may follow if the incontinence is not resolving. Every consultation will begin with a thorough history exploring some of the risk factors that may predispose one to developing this type of incontinence. Any trouble with urination prior to the surgery can increase the risk of developing it afterwards. Having had prior radiation or surgery to the pelvis; neurological diseases (such as strokes, multiple sclerosis, spinal cord injury) and medical conditions like diabetes all may increase the risk. Any complications at the time of prostatectomy should be noted and whether the procedure was nerve sparing on one or both sides (for the reasons already mentioned). The historical enquiry will be followed by a physical examination which may include an ultrasound exam of the abdomen and possibly also the perineum in the doctor's rooms. One may then be asked to urinate into a special device called a Uroflow or, in some cases, even be asked to do a urodynamic study. The Uroflow, as the name implies, assesses the flow of urine and can detect any features of obstruction. Professor

Lewis Chan and his team from the Concord Repatriation Hospital in Sydney, have reported on the benefit of a urodynamic study to assess bladder function to ensure there are no underlying bladder problems, such as overactivity of its muscles, which could also cause incontinence¹. A urine sample will be sent off to make sure there is no urinary tract infection and a blood sample may also be sent to assess for infection or kidney dysfunction. Further imaging in the radiology department may sometimes be requested ranging from ultrasound to CT scan to an MRI. At home one may be asked to keep a diary detailing fluid intake (the amount and type of fluid), output frequency and amount (urine voided and urine leaked) and the number of pads used in a day to keep one's underwear dry. According to Professor Manish Patel (University of Sydney) from Westmead Hospital, the time to zero pad usage is an accurate method to monitor for improvement in incontinence³. Analysing the results of all the abovementioned tests, the urologist is able to collaboratively determine a treatment plan with the patient (to be discussed in more detail in the next blog).

Incontinence affects 1 in 10 men of all ages in Australia. An estimated 30 per cent of men who visit the doctor are affected by incontinence, yet more than two thirds do not discuss the issue⁴. It can be very debilitating, with 1 in 5 men experiencing depression as a result of social isolation due to the smell and being wet all the time; irritation and dermatitis to the skin; and recurrent infections. It is important for us to talk about this in the community, so men can seek the help they deserve – as incontinence can be treated.

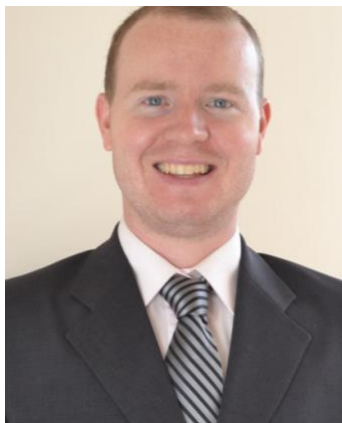
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About the Author

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Kalli is an internationally renowned Urological Surgeon, specialising in oncology and robotic surgery. He trained and worked in South Africa, before relocating to Australia where he has worked at Macquarie University Hospital and Westmead Hospital. His passion for what he does extends beyond the operating room, through public health advocacy, education and community awareness of men's health, cancer and sexuality.

Kalli has been involved with the Prostate Cancer Foundation of Australia for many years, advocating for improved cancer care and facilitating community prostate cancer support groups.