

The last stop for erectile dysfunction treatment

By Kalli Spencer

At this juncture in one's prostate cancer journey, spirits may be down, frustration levels high and all hope for a more fulfilling sex life might seem lost. As per last week's blog various erectile dysfunction medications, mechanical devices and self-injections may have been attempted and either deemed ineffective or failed.

There is one final option in the third tier of the treatment strategy and that is the insertion of a penile prosthetic or inflatable balloon placed within the penis. This procedure eliminates the need for any further medication and an erection depends on a device to occur. The internal structure of the penis is composed of three cylindrical masses/chambers (two corpora cavernosa, one corpora spongiosum) bounded by fibrous tissue and covered with skin. The two corpora cavernosa consist of highly vascular spongy centres and a dense outer layer responsible for maintaining rigidity during an erection.

The prosthetic device can be placed within the 2 chambers of the corpora cavernosa.

There are two types of devices available:

1) *Semi-rigid prostheses*

- The balloon stays permanently inflated and doesn't require inflation with a pump.
- The penis would have to be strategically positioned in the underwear to avoid potentially embarrassing situations.
- This treatment is well suited for someone who has poor manual dexterity.

2) *Inflatable penile prostheses (IPP)*

Made by two different companies

Each company has various models and differences in composition of the implant, antimicrobial properties, and design of the pump and reservoir. Patient satisfaction with devices from both companies is very high, regardless of the company or specific device properties.

There are two types: 2 or 3 pieces

The difference between the two types is the 2 piece has an integrated storage reservoir rather than a separate storage reservoir.

The IPPs are designed to approximate the rigidity and flaccidity of the normally functioning penis.

Erection is achieved by repeatedly squeezing a pump; each compression transfers fluid from the reservoir to the intracorporeal cylinders until adequate rigidity is achieved. Pressing

a valve mechanism in the scrotal pump causes fluid to flow from the cylinders back to the reservoir.

For the *2-piece device*: Patient satisfaction has been shown to be as high as 96% and mechanical failure rates < 5% over a 5-year period ¹.

A two-piece implant is particularly useful when there has been prior pelvic or groin surgery preventing the placement of a separate reservoir. Another advantage is the ease of deflation, which requires less dexterity and digital sensitivity².

A *3-piece device* is thought to give slightly more rigid erections.

The device can either be inserted through a small incision made just above the penis and below the pelvic bone (infra-pubic) or between the base of the penis and the scrotal sac (penoscrotal). Patient satisfaction was over 80% for both surgical techniques and the surgical approach is based on surgeon experience³.

Pre-operative preparation

Prior to this surgery a very comprehensive consultation is held between patient and surgeon. The counselling process involves a very careful discussion about all possible complications and realistic expectations of outcomes are set together. A feature which is of concern for some men is the potential risk of penile shortening.

Other complications, although uncommon, may include⁴:

- Infections (especially in men who are diabetic)
- Pain (within penis at rest or with inflation and during sex; at the site of the pump in the scrotum)
- Device erosion
- Device failure
- Damage to nearby structures during surgery (such as the urethra)
- Change in sensation at the head of the penis (glans)
- Need for future revision surgery or device replacement

The patient is also given an education session to learn how the device operates.

The operation

If there is any infection in the body, whether it be on the skin, a urinary tract infection or even a respiratory infection, the procedure cannot go ahead. If the device becomes infected it would have to be removed and the procedure attempted again at a later time. The device is particularly costly to replace.

The procedure can be done as a day procedure, but usually requires an overnight stay.

Pubic hair is shaved in theatre on the day and a thorough skin scrub is performed before the procedure starts. Extra precaution is taken in theatre to ensure utmost sterility and the device is soaked in an antibiotic solution.

Post-operative wound care is very important and full compliance is required from the patient to ensure no infections develop.

The device usually remains inactive for 6 weeks to allow healing to take place. During the 6-week period the pump should be massaged in a downward position into the scrotum to stop it from retracting up into the groin.

At the 6 weeks follow up and review by the surgeon, if everything appears to be in order, the patient will be given the go ahead to use the device with an intimate partner.

Outcomes

Possible methods to help reduce penile shortening post-surgery include external penile traction applied for 2-4 hours daily for 2-4 months before prosthesis insertion. Another technique is through a penile rehabilitation program with daily inflation for 6 months post-surgery and then with maximal inflation for 1-2 hours for another 6-12 months⁶.

During the pre-operative counselling session, it's important to discuss partner libido and assess for any sexual dysfunction. A partner's satisfaction and expectations will influence the patient's satisfaction after the procedure⁴.

Studies have shown a significant enhancement of erectile function and sexual satisfaction when compared to patients receiving tablets and injections for erectile dysfunction⁷. One study showed more than 80% of patients were satisfied with the function of the device, ease of inflation, and level of rigidity⁸. Melbourne based urologist, Christopher Love, reported 94% of men were satisfied with treatment, whilst 77% of men reported good sexual function. Lower depression scores were associated with higher sexual intimacy and confidence, and these were correlated with better treatment satisfaction and sexual function.

From the above mentioned discussion, it's clear that while prosthetic penile devices may not be well known options for the treatment of erectile dysfunction, studies have shown that they have a particularly high rate of satisfaction from both recipients and their intimate partners. They are relatively minimally invasive and have good efficacy, while potentially also improving one's self esteem, as well as providing greater fulfilment during sexual intimacy.

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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.