Erectile Dysfunction after Prostate Cancer

The average American male has a 15% chance of being diagnosed with prostate cancer in his lifetime. Being diagnosed with cancer of any type is generally a shocking and overwhelming life stressor. Following the diagnosis of cancer, one can be overcome with medical decisions that need to be made, whether it is which treatment to choose or which kind of surgery to have. While sexual problems are common for men who have had prostate cancer, physicians and patients spend little time discussing the long term effects it will have on his sexual health. Many of the men I have treated have told me that even after having their prostate removed; they still aren't *exactly sure* what function it served. Moreover, the majority of them have also stated that for the most part, they were given Viagra or Cialis and told that if they did have sexual problems, they would go away in 6-12 months. According to my research and my clients' experiences, that is not the case…let's talk about this.

Anatomy of the prostate

Bear with me for a moment while I completely nerd out on you, discussing anatomy and physiology! First, let me explain what the prostate is and what it does (if you don't already know). The prostate is a small muscular gland, about the size of a walnut. It is located between the urinary bladder and the penis. Several distinct lobes make up the complete structure of the prostate, but I will spare you the details and do my best to keep this simple. The urethra is a long duct that allows urine to be excreted from the body and it runs from the bladder, through the center of the prostate, and then to the penis. When a man has an orgasm, semen is expelled from the penis via the urethral opening. People will frequently use the words "semen" and "sperm" interchangeably, when they are in fact two separate things. Semen is a milky fluid that contains sperm (which are produced in the testes) and seminal plasma. Seminal plasma is a fluid that nourishes and protects the sperm, and it is essential for the activity and survival of the sperm within a woman's reproductive system (the vagina, uterus, etc.). Without the seminal plasma, those poor sperm would die rather quickly, due to the acidic nature of vaginal secretions. The seminal plasma creates a more alkaline environment, allowing them to survive the trip to the fallopian tubes.

Seminal plasma is produced from three male accessory glands: the seminal vesicles, the prostate, and the Cowper's (a.k.a. bulbourethral) glands. Secretions from the seminal vesicles account for 60% of the semen volume, the prostate accounts for 20% and the Cowper's makes up another 10%. The remaining 10% is sperm. When a man ejaculates, the prostate squeezes this fluid into the urethra where it is mixed with the sperm and expelled through the penis.

Putting that all together, the prostate is a gland that is primarily there to produce seminal plasma to be combined with sperm (creating semen) and it helps expel it out of the body. In addition, the urethra runs through the center of it. You may be wondering, since other glands also produce seminal plasma, why does it matter if we get rid of it? Great question!

The Prostate and Erections

There are nerves and arteries that surround the prostate that are critical for penile erections. A series of arteries run along the side of the prostate. These are known as accessory pudendal arteries and they carry the much needed blood supply to the penis, required to get an erection. In addition, erection nerves travel closely, against the prostate. The erection nerves are spread over a large surface area of the prostate, however, the densest areas of these nerves are on the left and right sides of the prostate. The erection nerve is bundled together with blood vessels (a.k.a neurovascular bundle). Whether or not a man is able to recover erectile functioning after the prostate is removed is highly dependent on how much of this nerve tissue is left behind. Typically, when the surgeon is able to gently tease off and separate both nerve bundles, it is classified as "bilateral nerve sparing." When they are able to spare one, it is referred to as "unilateral," and if all nerve fibers are cut, it is referred to as "non-nerve sparing." Research supports that the patients who were able to have bilateral nerve sparing have higher rates of erection function recovery and higher rates of responsiveness to drug therapies (like Viagra or Cialis).

Given the importance of this, one would think that patients would have a clear understanding of this and would have follow-up visits with their surgeons to discuss how much of the nerve fibers were able to be spared. In all of the years I've been a sex therapist, I've treated countless men who have had erectile dysfunction after the removal of their prostate. I can only think of one man who was able to answer me when I asked, "Do you know if they were able to spare one or both nerve bundles?" In my opinion, this is a sad reflection of the discomfort that physicians and patients have around discussing sexual functioning.

Erectile Dysfunction

Depending on the type of surgery, nerve sparing, and damage done by radiation; the rates of erectile function recovery range from 20% to 90%, according to multiple research studies. Wow…that's a fairly broad range! According to John Mulhall, M.D., director of the Sexual & Reproductive Medicine and Urology Services at Memorial Sloan-Kettering Cancer Center, "Recovery of erectile function after surgery may take 12-24 months and probably only 15% of men will have recovery of the same erection hardness after surgery that they had before surgery, at least without the use of medication" (2010). He identifies eight factors (see Table 1) that are predictors of erectile function after a radical prostatectomy (complete removal of the prostate).

Table 1. Factors Predicting Erectile Function Recovery after Radical Prostatectomy

- **Patient age at time of surgery (younger better)**
- **Patient erectile function before surgery (harder better)**
- **Amount of nerve tissue preserved (more spared better)**
- **Blood flow into and out of penis after surgery (better blood flow better)**
- **Erection tissue health**
- **Surgeon results (specific to him or her)**
- **Surgeon volume (how often the surgeon does a radical prostatectomy)**
- **Number and severity of comorbidities (diabetes, high blood pressure, high cholesterol, etc.)**

Source: Saving Your Sex Life: A Guide for Men with Prostate Cancer (Mujhall, J., 2010, p.65).

I'd like to add an additional factor to his list: **psychological state**. Many say the brain is your most powerful sex organ. With regard to erectile dysfunction, this couldn't be a truer statement. This is because the brain must send signals to the central nervous system to trigger the blood flow to the penis. This requires that the man be both aroused and relaxed. The three most common psychological issues that affect erectile functioning are: stress, anxiety, and depression. Unfortunately for most men, having prostate cancer alone causes stress, anxiety, and depression. Moreover, having difficulty with erectile functioning for 12-24 months (which is the average post-operation) causes men to enter into a cycle of performance anxiety. In this cycle, once his mind begins to focus on the thoughts and fears of not being able to achieve an erection, he is no longer relaxed, he becomes stressed or anxious. Both stress and anxiety release an abundance of adrenaline in the body; which causes a loss of erection. Now, his fears have become reality. Thus, the cycle becomes a self-fulfilling prophecy. To combat this, I suggest all males who have prostate cancer seek the help of a mental health professional, to limit the psychological effects on their erectile functioning.

For all cancer survivors: I wish you all the best in your healing journey.

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