EJACULATION POST-SURGICAL REMOVAL OF OR RADIATION TO THE PROSTATE GLAND

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Disclaimer: Please recognize that I am not a Medical Doctor. I have been an avid student researching and studying prostate cancer as a survivor and continuing patient since 1992. I have dedicated my retirement years to continued research and study in order to serve as an advocate for prostate cancer awareness, and, from a activist patient's viewpoint, to help patients, caregivers, and others interested develop an understanding of prostate cancer, its treatment options, and the treatment of the side effects that often accompany treatment. Readers of this paper must understand that the comments or recommendations I make are not intended to be the procedure to blindly follow; rather, they are to be reviewed as my opinion, then used for further personal research, study, and subsequent discussion with the medical professional/physician providing prostate cancer care.

Ejaculation is the final outcome of a complex series of reflexes induced by sexual arousal and stimulation. The reflexes involve both the sympathetic and the parasympathetic branches of the autonomic nervous system, as well as spinal motor nerves and descending nerves from the brain. Three phases of the ejaculatory response can be defined – erection, emission, and ejaculation itself.

Erection is caused by changes in blood flow to the penis that can be induced by tactile stimulation of the genital region, particularly the glans penis, which has a high density of tactile-pressure receptors. This sensory information is relayed by sensory nerves to the lower spinal cord which, via parasympathetic nerves, causes dilation of arterioles in the penis. As a result, blood inflow to the spongy sinuses increases dramatically and they become engorged. Because these erectile regions are surrounded by a strong fibrous coat, the penis becomes enlarged and rigid. Also, as the erectile tissue expands the venous outflow from the penis is compressed, so while inflow of blood increases, through flow does not, and erection results. Simultaneously, parasympathetic nerves stimulate the bulbo-urethral glands to produce a mucoid substance to aid lubrication. Erection can also occur in the absence of any tactile stimulation, when thoughts, visual cues, or emotions stimulate descending nerve pathways from the brain. These, in turn, activate the same nerves as those reflexly stimulated by sensory stimulation of the genital region.

During the second phase of the response (*emission*), contractions of the smooth

muscle in the walls of the vasa deferentia, and the ejaculatory duct formed by their junction, push sperm into the upper part of the urethra. At the same time the seminal vesicles and prostate gland contract and release seminal fluid into the urethra.

In the third phase, ejaculation proper, which occurs at orgasm, the semen (sperm plus seminal fluid) is expelled from the posterior urethra by contractions of the muscles which surround it. During coitus ejaculation is also associated with involuntary rhythmic thrusting of the pelvis. The role of the sympathetic branch of the autonomic nervous system at this point is to contract the sphincter round the neck of the bladder, so that ejaculation cannot backfire in that direction.

A feeling of intense pleasure usually accompanies ejaculation, and the whole event is known as orgasm. After this there is the *resolution phase* in which all the physiological changes which have occurred are reversed and a man becomes refractory to any further sexual stimulation for a while. This period can last from a few minutes to several hours.

Any interference with the relevant spinal reflexes can cause impotence and other sexual dysfunction, although libido will be unaffected. The central nervous system plays an important role in regulating the sexual response, not only in normal individuals but also in cases of disordered sexual function. While sexual arousal can be stimulated or enhanced by visual or other inputs of a sexual nature in the absence of tactile genital stimulation, conversely the sexual response may be suppressed by the central nervous system, either consciously or subconsciously. This can lead to impotence, loss of sexual interest, premature ejaculation, ejaculatory failure, or a loss of the usual generalized accompaniments of orgasm. These are all common defects of this complex reflex response and may have a psychogenic basis in some patients. They are often amenable to behavioural therapy.

And now that you think: “Wow, this guy seems to know everything.” In reality, all you have to do is type “where is the pressure generated that causes the semen to be emitted in several spurts of diminishing intensity” and you would have come upon this paper:

http://www.answers.com/topic/ejaculation#ixzz1mhe7UQYV

Important to be aware: Sperm is produced by quite an interesting process in the testes, then moved to the epididymis where it is stored and matured. And from there it travels via the vas deferens, seminal vesicles, etc.

With surgical removal of the prostate gland, the vas deferens and seminal vesicles are also removed, thus no route for sperm or semen to become an ejaculate resulting in dry ejaculations.

With radiation to the prostate gland with either internal (brachytherapy), or external that would include the gland's periphery and likely also include a portion of the seminal vesicles, the radiation pretty much results in sufficient damage of the foregoing pathway to block sperm traveling through this pathway. However, if you check the internet, though likely to have dry ejaculations after radiation a few drops of semen have been known to make it through this route as ejaculate. Question remains as whether or not those few drops also carry any or sufficient sperm to cause pregnancy. Probably unlikely, but possibly worthy of concern to have any future semen release tested to determine if any sperm cells are present.