

# NFP Doctors

Respect Life Protect Life Defend Life

## Vasectomy

About 1.5 million of couples in the United States opt for sterilization every year.<sup>1</sup> According to the Guttmacher institute 9.2% of couples in the US use vasectomy as a contraceptive method, and 500,000 vasectomies are performed in the United States every year.<sup>2</sup> The medical community and most family planning advocates consider vasectomy a safe and simple procedure. The purpose of this pamphlet is to inform couples considering this procedure about current research on vasectomy that indicates; vasectomy could be relatively simple but would not be so safe due to short and long term complications.

What is vasectomy?

Vasectomy is a surgical procedure to block sperm transport from the testis to the male urethra. Sperm is produced in the male testis. Around 4.25 million sperm are produced per gram of testicular tissue, and the average testis weight 16.9 grams. Sperm produced in the testis represent 5-10% of the total ejaculate volume and it is not ready to fertilize the female ovum. Sperm matures, becomes motile, and it is stored in a structure called epididymus, located in the side of the testis. From the epididymus, sperm is transported by the vas deferens to the seminal vesicles and the prostate. Secretions from these glands contribute to 90% of the ejaculate. Then, the total ejaculate is transported to the urethra. Vasectomy usually involves the removal of a small piece of each vas deferens.

How vasectomy is performed?

The technique used to perform a vasectomy can involve three major components. First, the vas deferens can be achieved by a single or double incision in the scrotum (skin that surrounds the testis) with a scalpel or without scalpel using special instruments.

Second, the vas deferens on each side is disrupted by cutting, burning, or clipping, with the edges sewn or not. Finally, the scrotal tissue is closed.<sup>3</sup>

Is vasectomy 100% effective in preventing pregnancies?

Recent research has determined that about one in one hundred vasectomies fail one to five years after the surgery is performed.<sup>4</sup> That can be because of re-canalization of the vasa by natural healing or failure in the surgical procedure.

Are there any risks associated with vasectomy?

During a vasectomy, a healthy part of the body is damaged, and males can suffer anatomic, hormonal, immunologic, psychological, and social changes.

Early complications include local hematoma, bleeding, swelling of the scrotum (range 2-29% of the cases), infection of the skin, urinary tract, orchitis, and epididymus (range 12-38% of the cases).<sup>5</sup> Orchitis or epididymitis is an inflammation of epididymus and testis which may require antibiotics to resolve.

#### Long-Term Complications:

After vasectomy, sperm production continues at the same rate as before the procedure. There is not feedback mechanism to inform the testis to stop sperm production, and thousands of sperm can be produced every minute. Sperm granulomas are a compensatory response to spare the testis from damage. A globe of tissue is produced around leaking sperm to relieve back pressure post vasectomy. Because the natural way to evacuate this sperm has been blocked, a build up in pressure disrupts the natural barrier that exists between the testis and blood enabling sperm to enter the blood.<sup>6</sup> Why is this important? This is important because sperm contain antigens (substances that can stimulate the production of antibodies). Also these antigens can alter cellular immunity. What supporting evidence is there? After vasectomies 50-68% of males develop anti-sperm antibodies.<sup>7</sup> Those antibodies may be deposited in many tissues causing several reactions. Just as a person has diverse reactions to drugs, food, additives or diseases, males who undergo vasectomies have several responses to the new antibodies formed. These can be a number of local and systemic reactions. Although no final conclusion can be reached about the cause-and-effect relationship between vasectomy and long-term disease, principally due to lack of long term medical studies, many diseases have been reported in males post-vasectomy. In the book, *Is Vasectomy Worth the Risks* the author states that in his medical practice he has encountered many young males who undergone a vasectomy who have diseases with unexplained causes. The following diseases have been reported in men after vasectomy: atherosclerosis, prostate cancer, testicular cancer, urolithiasis, psychogenic impotence, rheumatoid arthritis, multiple sclerosis, migraine, hypoglycemia, narcolepsy, thrombophlebitis, pulmonary embolism, infection, allergic reactions, kidney stones, and angina pectoris.<sup>8</sup>

Post Vasectomy Pain Syndrome (PVPS) is another complication after vasectomy. It can occur from weeks to ten years after the procedure.<sup>9</sup> Some males suffering from PVPS report a sharp testicular pain during certain activities such as sitting, sexual intercourse, or during exercise. Others report dull, constant pain or pain irradiation to the scrotal area or the back. <sup>10</sup> Unfortunately many cases of PVPS are misdiagnosed due to lack of association of their symptoms with the vasectomy. The incidence rates for this condition vary from 5 to 50%.<sup>11</sup> Although the cause for the pain is still object of research, it is believed that distention of the tissues due to back pressure, inflammation, sperm granulomas, fibrosis and nerve entrapment may explain the pain. Removal of granulomas, vasectomy reversal, and removal of nerves and in extremes cases removal of the testis are treatment option for PVSP.

#### Is vasectomy associated with cancer?

According to the American Cancer Society prostate cancer is the type of cancer most often diagnosed in males in America. In the year 2009 192,280 new cases of prostate cancer have been identified and more than 27,000 men died from prostate cancer or its complications.<sup>12</sup> Although mortality rates from prostate cancer have decreased, more than two million men are living with this disease. Risk factors for prostate cancer can be divided into modifiable and non-modifiable factors. Non-modifiable risks factors are family history of prostate cancer, and ethnicity (African-American males have a high incidence of prostate cancer). Modifiable risk factors include diet, alcohol consumption, and smoking.

Although medical and government organizations<sup>13</sup> do not regard vasectomy as a risk factor to prostate cancer several studies have noted that men who undergo a vasectomy have a higher incidence of developing prostate cancer, especially 15-20 years after their vasectomy. <sup>14,15,16,17</sup> The largest study looking for a link between prostate cancer and vasectomy was done in the 1990's. The author of this study found a perceptible increase in the risk of cancer in males who had undergone vasectomy 20 years prior. After the publication of this study the National Cancer Institute and other organizations sponsored a conference in 1993 to debate the association between prostate cancer and vasectomy, and experts concluded that the risk was very small and just due to chance. Although recent studies have concluded that there is no link, looking closely at statistical analysis of these studies association is found.<sup>19</sup>

The biggest study that found no association between prostate cancer and vasectomy found that vasectomy patients had higher levels of testosterone.<sup>14</sup> Higher levels of testosterone have been associated with prostate cancer.<sup>15</sup> This biologic relationship is crucial to explain why it is possible to develop prostate cancer after vasectomy.<sup>16</sup>

Is vasectomy associated with dementia?

Researchers from the Northwest University in Illinois published a study that looked into one patient's belief that his dementia resulted from his vasectomy.<sup>20</sup> His was not a common dementia; it was a relatively new kind of dementia called Primary Progressive Aphasia (PPA). Its onset is characterized by language impairment (aphasia) rather than the forgetfulness found in Alzheimer's disease (AD). Another reason for the study was the interesting fact that the testis and the brain have similar molecular substances. Vasectomy may have a role in the development of PPA based on the immune reactions to sperm after vasectomy and on the similarity of brain and sperm proteins. Probably new antibodies produced after vasectomy can attack brain cells and cause PPA. The authors found that 40% of the men in their study who suffered from PPA also had vasectomies. The study involved a control group of males who did not have PPA, and 16% of that group had vasectomies. The study revealed that PPA subjects had the vasectomy procedure at a younger age— 36 years old on average. In contrast the control group had their vasectomies performed at an average age of 43.56 years. It appears that longer exposure to this sort of immune attack increases the probability of developing PPA. A recent case report analyzed whether or not the use of steroids (drugs that inhibit the immune system) could modify the symptoms of PPA. The authors of this study found improvement of one patient suffering from PPA after the steroid treatment. Although more research with large populations is needed, the improvement in this particular case supports the hypothesis that PPA in men may be a treatable autoimmune disease related with vasectomy.<sup>21</sup>

Are there psychological effects post vasectomy?

Emotional disorders such as anxiety, depression and changes in personality have been reported after vasectomy.<sup>22</sup> Although more research is needed to determine the cause- effect relationship between vasectomy and personality changes, men who had undergone vasectomy have reported regret, resent, and ideas that their masculine image has been threatened.<sup>23</sup>

Are there social consequences?

Looking to the divorce rate in the USA and other developed countries where vasectomy is a method for birth control widely used we can reach to the conclusion that vasectomy may have contributed to the increase in divorce rates. Vasectomy can open the door to infidelity and marital instability. Pope Paul VI in his encyclical letter *Humanae Vitae* gave us advice about social consequences from the use of artificial methods of birth control. Now, we are sure that his predictions are right looking at the government's forced sterilizations for population control in many countries.<sup>24</sup>

## Alternatives

Natural Family Planning (NFP) is a safe and effective alternative to sterilizations and other artificial forms of birth control. Natural family planning is morally acceptable. Recent studies have demonstrated that couples who use NFP are more satisfied with their marriage and these couples have lower divorce rates compared to couples who use contraception or sterilizations.<sup>25</sup>

For males who have undergone vasectomy the reversal procedure is an alternative to alleviate some secondary effects and to restore fertility. The reversal procedure is not 100% effective to restore fertility and involve expensive microsurgery.

For more information about sterilization reversal and NFP: [nfp@nfpdostors.org](mailto:nfp@nfpdostors.org)