

Vasectomy Reversal

Vasovasostomy (VV)

The vas deferens is the tube (duct) that carries sperm from the testicle to the prostate. Vasectomy is a leading cause of obstruction of the male reproductive ducts, but many men may be born with or acquire such obstructions later in life from trauma or infection.

The ultimate success of a reconstructive procedure is pregnancy and is dependent on several factors: the age and fertility of the female partner, the age and previous fertility of the male, the method of vasectomy, the surgeon's experience, the technique of vasectomy reversal (the use of optimal magnification/microscope), the quality of the fluid seen coming from the vas at the time of the operations and, most importantly, the length of time since the vasectomy was performed. In a large study of 1500 patients from multiple institutions, the success rate correlated with the length of time since vasectomy. The shorter the interval from vasectomy to reversal, the higher the success rate. In men whose obstructed interval was less than three years, the likelihood of sperm present in the semen after reversal is as high as 95% and pregnancy was observed in 75% of the wives. On the contrary, when the obstructed interval was greater than 15 years, only 70% of men will have sperm in their semen following reversal and the pregnancy rate was significantly lower at 30%. In most men, i.e., those with obstructed intervals between 4-14 years, the likelihood of having sperm in the semen is about 80% with a pregnancy rate of 45-60%. In interpreting this data, one should keep in mind that the age of the wives plays an important role in the overall pregnancy rate. Men who are older, i.e., those who have had long obstructed intervals, may have older partners. This difference may account for some of the pregnancy rate difference as outlined above.

It is important to realize that the longer the interval of vasectomy, the more likely that a more complex reconstruction may be necessary. This operation is called an epididymovasostomy (EV). At the time of the surgery, it may be determined that this procedure will indeed be necessary, based on the quality of the fluid obtained from the vas deferens tube. This procedure connects the vas to the very small tubes of the epididymis. The epididymis is a structure situated behind the testicle that contains very small caliber tubes and is the first part of the male reproductive duct system. The success rate for epididymovasostomy is lower than for the standard vasectomy reversal (vasovasostomy or VV). Overall success rate for this procedure is about 40-60% that sperm will be present in the semen and 25-40% change in terms of pregnancy.

Vasovasostomy is done on an outpatient basis. Anesthesia will be either general or spinal/epidural. Pain medication will be prescribed and is generally required for 24-48 hours. Tylenol or Motrin may then be used. An ice pack should be placed on the scrotum for the first 24 hours. No heavy lifting, sports, or sexual activity should be engaged for four weeks. You may return to work in seven days unless your job is physically demanding; then you may return in ten to fourteen days. A semen analysis will be obtained eight to twelve weeks after surgery. Some men may not have sperm for six months to a year. If the more complex epididymovasostomy is performed, repeat semen analysis may be required for up to 18 months.

The average length of time to achieve pregnancy is about one year. Up to ten percent of patients will develop a recurrent obstruction after sperm were initially present. I recommend that you consider sperm banking once the sperm count has peaked to safeguard against this occurrence. Bleeding and

infection are uncommon complications. Scarring and persistent pain at the operative site occur very rarely.

Epididymovasostomy (EV)

Occlusion of the male reproductive duct is noted in 10-20% of all infertile men. It is a very important cause because it is surgically treatable. The causes of ductal obstruction include congenital absence or narrowing of the duct, scarring following infection, and vasectomy. The hallmarks of men with obstruction include azoospermia (no sperm in the ejaculate), normal testicular size and normal hormone levels. The diagnosis of obstruction can be made if, in addition to the above characteristics, the volume of the ejaculate is normal and adequate sperm production is present on testis biopsy.

The epididymis is the structure on the back of the testicle that contains the very small tubes through which the sperm migrate and in which they mature. The operative procedure to correct an epididymal obstruction is called epididymovasostomy. In this procedure the vas deferens is attached to the epididymal tubule in order to bypass the obstruction in between.

The finding of sperm within the epididymal tubule is the best predictor of success. In fact, if high quality sperm are encountered in the epididymal fluid at the time of the operation, we recommend sperm banking of this sample. This is done as an insurance policy in case the procedure is unsuccessful. This sperm can then be used for IVF with intracytoplasmic sperm injection (IVF/ICSI). The overall success rate for epididymovasostomy is about 40-60% that sperm will be present following the operation, and 25-40% chance of pregnancy. Some men may not have sperm present for up to 18 months. Pregnancy may take one to two years to achieve. There is also a ten percent chance that a recurrent obstruction will develop after sperm were initially seen. Again, we recommend sperm banking as a safeguard against this problem.

The procedure is done on an outpatient basis and will take four to five hours. An operating microscope is required in order to visualize the very fine epididymal tubules. Anesthesia will be either general or spinal. A prescription for oral pain medication will be written and may be required for up to 48 hours. An ice pack should be placed on the scrotum for the first 24 hours. No heavy lifting, sports, or sexual activity should be engaged in for four weeks. You may return to work in seven days unless your job is physically demanding; then you may return in 14-21 days. A semen analysis will be obtained 8-12 weeks after surgery.

You should also consider the option of sperm harvest at the time of this procedure. In men whose procedures were unsuccessful, the need for sperm remains. We can either collect sperm from the epididymal fluid or remove a small portion of the testis and extract sperm for storage. This sperm can then be used for IVF or be substituted later with better quality ejaculated sperm. The advantage of ejaculated sperm is that if they are of sufficient quality and quantity, they may be used for the much simpler insemination rather than IVF.

Sperm Aspiration / Extraction

Recent breakthrough in IVF enables us to achieve pregnancy with a very small number of sperm. In men with production problems or obstruction not amenable to surgical reconstruction, directly obtaining sperm from the testicle or epididymis for IVF is the only option for biological parenthood.

Testicular and epididymal sperm are functionally immature. They are not very motile and most do not have the ability to home in on the eggs, even if they are placed together in a test tube. They must be directly injected into the eggs to achieve fertilization through a procedure called IVF/ICSI.

Testicular and epididymal sperm cannot be used for intrauterine insemination due to their functional immaturity and the low number of such sperm retrievable. Their use requires IVF/ICSI.

The sperm may be sucked out with a small needle (aspiration) or processed out from a small piece of testis tissue (extraction). Aspiration can only be used in men with normal sperm production; it is less traumatic but removes only a very small number of sperm, too few for sperm banking, but sufficient for immediate use. Sperm aspiration/extraction with IVF/ICSI is an alternative to surgical reconstruction. There are pros and cons for each approach; in our opinion, vasectomy reversal is more appropriate for most men, if one considers the likelihood of success and overall costs.

We strongly recommend that you become well informed of all aspects of these options before reaching a decision. We are here to help you, and we look forward to the opportunity to discuss with you the various options available and answer any questions you may have.