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Understanding a Varicocele

A varicocele is a collection of enlarged veins that drain either one or both testicles. It is located just above the affected testicle, in the upper scrotum. These veins are similar to varicose veins in the leg. As a result of being enlarged, these veins affect the blood circulation to the testicles. It is not necessary to have a varicocele on both sides to affect both testicles, since one varicocele can commonly affect both testicles.

The effect of a varicocele is mostly on the production of sperm and, subsequently, on fertility. The varicocele commonly lowers the number of sperm produced and the movement, or motility, of the sperm. The varicocele can also affect the shape, or morphology, of the sperm. All these changes can lead to a decrease in the ability of a man to impregnate his wife when he has a varicocele. A varicocele can also lead to pain in one or both testes and it can sometimes be associated with atrophy, or shrinking of the testis. There is no evidence that a varicocele affects a man's general health or shortens his life. It is not associated with the development of testicular cancer. The most common reason people seek treatment for a varicocele is for its affect on fertility.

A varicocele is a common finding, being seen in 15% of men. While most men who have a varicocele do not have infertility, in men who do have infertility we find the varicocele to be present in 40%. In men who have secondary infertility, which means that they have had at least one child and are having trouble conceiving the next child, we find the varicocele to be present in 80% of these men. This is apparently due to the varicocele having a progressive affect on the fertility potential in this population. While these men were younger, they may have been affected by the varicocele but were able to compensate for the effect due to the built in reserve in the system. As they get older, the effect of the varicocele is more pronounced and they may no longer be able to compensate adequately. This can result in an abnormal semen analysis and fertility problems.

The exact way in which the varicocele affects fertility remains a mystery. Most investigators believe that the varicocele alters the normal blood flow past the testicles by allowing venous blood to pool around the testicles. This is believed to alter the temperature of the testicles and subsequently decrease fertility. Whether this is the only or the correct reason for the effect of the varicocele on fertility remains to be proven.

The good news is that this problem can be treated with reasonably good success! First, it will be necessary to confirm that one or two varicoceles are present. This sometimes requires a scrotal ultrasound to be done. If this is necessary, our staff will help you schedule this test. You will also be requested to undergo at least 2 semen analyses, if you have not already done so. These are necessary to document the present effect, if any, that the varicocele is having. A blood test for a hormone analysis is also performed to insure that you are producing the correct amount of hormones needed for optimal sperm production. The hormones that we test for are Testosterone, Prolactin, Luetinating Hormone and Follicular Stimulating Hormone. Treatment will be recommended as needed for any abnormalities in hormone production if and when they may be found.

Treatment of the varicocele can be performed by one of several ways. The way that is associated with the highest success rate and the lowest complication rate is the microsurgical internal spermatic vein ligation with testicular exploration and gubernacular vein ligation. If there is one varicocele, then this is performed on only that side. If there are two varicoceles present, then the procedure is performed on both sides at the same sitting. The procedure involves an incision on one side for each varicocele. It is made in the groin area and is similar to a hernia repair incision. It extends for about 1 to 1 1/2 inches. The spermatic cord is explored using the operating microscope and instruments and the artery or arteries are each carefully separated from the veins. The arteries are saved and the veins are tied or clipped and cut. The testicle is then

brought through the incision. All veins on the surface of the testicle are then cut and tied. Everything is replaced and the wound is sewn closed. The skin is closed with surgical staples. The procedure is usually performed in an outpatient settling in the hospital. You come in, have the procedure done and go home the same day. Most men choose general anesthesia since it is easiest for you and you are not aware of any of the procedure. If you prefer, this can be done under spinal or epidural anesthesia as an alternate. At the end of the procedure you are given a long acting local anesthetic which keeps you pain free for the remainder of that day. Afterwards Extra Strength Tylenol is usually adequate for any residual pain. You will be given a prescription for Tylenol and codeine just in case you need it. Usually patients are allowed to return to work after 5 days but you must limit your sexual activity and exercise for 4 weeks after surgery.

Using this technique, there are very few complications. There can be some post operative swelling or bleeding but this is mild and self limited. There is always the possibility for an infection but this is also rare. There is a chance that the varicocele can recur or can remain after surgery. This is due to the complex venous anatomy in this area and to the body's attempts to bypass the "blocked" vessels that have been tied. This occurs in about 5% of men when the microsurgical method is used and about 15% when the non-microsurgical technique is employed. You may develop some fluid around the testicle after surgery. This is known as a hydrocele and usually has no effect on you or your sperm. It occurs less than 1% with the microsurgical method and in about 5% of men who undergo the method without the microscope. Any time we operate on the veins draining the testicle, there is a possibility that we may injure the arteries that feed the testicle. If this should happen, there is a remote chance that that testicle might stop functioning. If this were to happen to both your testicles, you might become sterile and require some hormonal replacement therapy from that point on. However, this is a very rare complication and has never happened to any of the patients treated in this practice with the microsurgical method. In fact, just about everyone who undergoes this operation does very well and recovers with no ill effects at all.

As mentioned, there are some alternatives to the microsurgical technique. These include the following: (1) The non-magnification technique, where as many veins as can be seen are tied. (2) Percutaneous embolization of the veins. This technique uses x-ray guidance to place metal springs into the veins to clot them off. Because of the technical difficulty in this procedure, it is sometimes necessary to pass the catheter used to place the springs through the heart to gain access to some of these veins. (3) Laparoscopic vein ligation. This method relies on the placement of 4 to 5 telescopes into the abdominal cavity through 4 to 5 cuts. The veins are then tied off from the inside. This method has no advantages over the microsurgical method but has a greater potential for serious side effects since it does penetrate into the abdominal cavity. (4) Assisted Reproductive Technology. This method uses the sperm you are now producing and attempts to manipulate them and to use them to fertilize your partner's eggs either in her womb or in the laboratory. Although this technique may be worth trying in some men if their sperm count is adequate, it often requires considerable intervention and manipulation of the sperm and eggs. This can sometimes affect the outcome negatively. This alternative can also be costly. If we can optimize your sperm production, we not only maximize your chances to achieve a pregnancy through natural means but also enhance the chances for success if assisted reproductive technology should be necessary in the future. (5) No treatment. The varicocele will not harm you if you choose to have no treatment. It is likely to continue to affect your sperm production and it may cause you testicular pain. If either of these is already present, they are not likely to spontaneously resolve.

If the varicocele is repaired as described above, there is a 50-70% chance that the sperm parameters will improve over the following 3 to 9 months. There is also a 30-50% chance that treatment will result in a pregnancy during the year following surgery. This may be compared to a 15% background pregnancy rate in couples undergoing fertility evaluation who receive no treatment. Additionally, treatment of the varicocele has been shown to improve pregnancy rates from other assisted reproductive techniques, such as, intrauterine insemination and in vitro fertilization.

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Based on this information, when a varicocele is present and is associated with abnormalities in sperm production, and when there is a desire to achieve a pregnancy either at present or at a future date, we recommend that the varicocele(s) be treated as described above. Most of the cost of this procedure is usually covered by most health insurance plans, however this will vary considerably. Our staff will be available to discuss the specifics of your plan and coverage with you.

If you require any further information or if you would like to come in for a consultation, please contact the office at the number above and we will make the necessary arrangements.

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