As innovations in men’s health have advanced, so have the many interventional radiology procedures that offer effective, minimally invasive alternatives to open surgery. This is the case for the treatment of varicoceles, which are varicosities in veins (pampiniform plexus) of the scrotum. It is estimated that perhaps 10 percent of men have varicoceles,\(^1\)\(^,\)\(^2\) and while most are asymptomatic, others may cause pain, testicular atrophy and infertility. The traditional treatment has been open surgery,\(^2\) and each year it is estimated that as many as 70,000 to 80,000 men in the United States may undergo surgical correction of varicocele.\(^1\)

An alternative to surgery is varicocele embolization performed by an interventional radiologist. This treatment, which studies show is equally effective, has a number of advantages. It is minimally invasive (no surgical incision) and less painful, and recovery time can be much shorter. The procedure itself takes only about 30 minutes to an hour, patients are ready to go home in about two hours and they typically return to normal activity the next day. Safe and effective,\(^2\) varicocele embolization is an underutilized choice\(^2\) for many men, perhaps because it is not so well known or widely publicized.

Because the procedure is nonsurgical and is performed under local anesthesia with conscious sedation, men with other medical problems that preclude surgery are candidates for varicocele embolization.

**Varicocele embolization can help restore fertility**

There is substantial evidence that varicoceles adversely affect male fertility, a condition that has been called the most common correctable cause.\(^2\) In fact, studies show that in infertile couples, males have an incidence of varicoceles of 20-40 percent.\(^2\)\(^,\)\(^3\) Fertility is a very difficult problem, of course, and even if it is determined that the male is the cause, there are still many different reasons for it. Varicoceles may be just one reason. However, research indicates that when the cause is known to be male infertility, and varicoceles are treated, couples are able to conceive in around 40 percent of those cases.\(^4\)
Outpatient embolization

Patients typically are diagnosed using ultrasound and then are referred by their primary physicians or urologists to an interventional radiologist for treatment. The patient is seen in the interventional radiologist’s office for a patient history and physical, and arrangements are made for the outpatient procedure to be performed in the hospital. There, patients are given local anesthesia with conscious sedation. (If a patient in the past has experienced an allergic reaction to iodine contrast, he receives premedication the night before and the morning of the procedure to prevent this.)

For the procedure, the femoral vein is accessed. A tiny catheter is fed through the inferior vena cava and down the testicular vein, and contrast is injected. A venogram is performed to show the extent of the problem and to confirm that reflux is present in the testicular vein. The venogram provides the map for performing the procedure.

Rather than simply blocking one level of the vein, the embolization technique creates a kind of sandwich with coils and a sclerosant or embolizing agent. A coil is placed to block the flow at the bottom part of the vein, and then the sclerosant or embolizing agent is injected throughout the long length of the vein. In the middle, another coil is placed, then another long length of sclerosant or embolizing agent. At the very top, another coil is inserted. In that way, the entire vein is blocked to the point at which the vein goes into the renal vein on the left side or the inferior vena cava on the right side. Occluding the entire vein is helpful in preventing recurrence.

Patients stay for a two-hour observation period prior to discharge. They are followed up the next day via phone. Some patients may experience some mild achiness. Typically, patients return to work the next day.

Success rate is equal to surgery

The recurrence rate of this condition has traditionally been measured at around 15 percent. Success rates for varicocele embolization are 90 percent, which are the same results as those achieved with more invasive surgical procedures, according to the Radiological Society of North America.\(^5\,6\)

Varicocele embolization is safe, effective, and easily available. It represents one of several options that can be presented to a patient so that he can weigh his choices. However, many men may not be aware that a nonsurgical option is available.

Varicocele embolization can be less invasive, less painful and as effective as surgery, yet many are not familiar with this interventional procedure.

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