Varicocele Embolization



A varicocele is an enlarged vein in a male's scrotum with abnormal blood flow that may cause pain, swelling or infertility. Varicocele embolization uses imaging guidance and a catheter (long, thin, hollow plastic tube) to place tiny coils and/or a liquid substance in a blood vessel to divert blood flow away from a varicocele. It is less invasive than conventional surgery, can safely relieve pain and swelling, and may improve sperm quality.

Tell your doctor about any recent illnesses, medical conditions, allergies and medications you are taking, including herbal supplements and aspirin. You may be advised to stop taking aspirin, nonsteroidal anti-inflammatory drugs (NSAIDs), or blood thinners several days prior to your procedure. Leave jewelry at home and wear loose, comfortable clothing. You may be asked to wear a gown. If you are to be sedated, you may be told not to eat or drink anything four to eight hours before your procedure. If so, plan to have someone drive you home afterward.

What is Varicocele Embolization?

Varicocele embolization is an image-guided procedure that uses a catheter (http://www.radiologyinfo.org) to place tiny coils and/or a liquid substance in a blood vessel to divert blood flow away from a varicocele (http://www.radiologyinfo.org) .

A varicocele is an enlarged vein in a male's scrotum (http://www.radiologyinfo.org) with reversed or stagnant blood flow. It can cause pain, swelling and infertility. A clinical examination can confirm the presence of a varicocele and an ultrasound examination may allow further evaluation of the findings.

Varicocele embolization safely relieves that pain and swelling and may improve sperm quality for infertile couples.

How should I prepare?

Tell your doctor about all the medications you take, including herbal supplements. List any allergies, especially to local anesthetic (http://www.radiologyinfo.org) , general anesthesia (http://www.radiologyinfo.org) , or contrast materials (http://www.radiologyinfo.org) . Your doctor may tell you to stop taking aspirin, nonsteroidal anti-inflammatory drugs (NSAIDs (http://www.radiologyinfo.org)) or blood thinners before your procedure.

You will receive specific instructions on how to prepare, including any changes you need to make to your regular medication schedule.

If you are to receive a sedative (http://www.radiologyinfo.org) during the procedure, the doctor may tell you not to eat or drink anything for four to eight hours before your exam. If you are sedated, have someone accompany you and drive you home afterward.

The nurse will give you a gown to wear during the procedure.

What does the equipment look like?

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In this procedure, a catheter will be used.

A catheter is a long, thin plastic tube that is considerably smaller than a "pencil lead." It is about 1/8 inch in diameter.

Varicocele embolizations are typically performed with x-ray guidance.

This procedure may use other equipment, including an intravenous (http://www.radiologyinfo.org) line (IV), ultrasound machine and devices that monitor your heart beat and blood pressure.

How is the procedure performed?

Image-guided, minimally invasive procedures such as varicocele embolization are most often performed by a specially trained interventional radiologist (http://www.radiologyinfo.org) in an interventional radiology (http://www.radiologyinfo.org) suite or occasionally in the operating room.

This procedure is often done on an outpatient basis. However, some patients may require admission following the procedure. Ask your doctor if you will need to be admitted.

You will lie on the procedure table.

The doctor or nurse may connect you to monitors that track your heart rate, blood pressure, oxygen level, and pulse.

A nurse or technologist (http://www.radiologyinfo.org) will insert an intravenous (http://www.radiologyinfo.org) (IV) line into a vein in your hand or arm to administer a sedative. This procedure may use moderate sedation. It does not require a breathing tube. However, some patients may require general anesthesia (http://www.radiologyinfo.org) .

Your physician will numb the area, usually the neck or the groin, with a local anesthetic (http://www.radiologyinfo.org) .

The nurse will sterilize the area of your body where the catheter is to be inserted. They will sterilize and cover this area with a surgical drape.

The doctor will make a very small skin incision at the site.

Using image-guidance, a catheter (a long, thin, hollow plastic tube) is inserted through the skin into the jugular or the femoral veins (large blood vessels in the neck or groin, respectively) and maneuvered to the treatment site.

Small amounts of x-ray dye (contrast) are injected so that the interventional radiologist can clearly see the veins on the x-ray in order to pinpoint where the problem is and where to embolize, or block, the vein.

Tiny coils made of stainless steel, platinum or other materials, such as liquids, which directly close a vessel, are then inserted in the vein to block blood flow. By blocking the diseased draining vein, abnormal blood flow into the testicle is stopped and the blood is diverted to healthy veins to exit the testicle through normal pathways. Swelling and pressure within the testicle will be reduced if the blood flow is successfully diverted.

When the procedure is complete, the doctor will remove the catheter and apply pressure to stop any bleeding. No stitches are visible on the skin. The nurse will cover this tiny opening in the skin with a dressing.

This procedure is usually completed within one hour.

What will I experience during and after the procedure?

The interventional radiologist cleanses your skin above the insertion point for the catheter (http://www.radiologyinfo.org) and applies a local anesthetic. Intravenous (http://www.radiologyinfo.org) sedation is typically given so you will not experience much

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pain. Normally, you will not feel the catheter during the procedure.

The doctor or nurse will attach devices to your body to monitor your heart rate and blood pressure.

You will feel a slight pinch when the nurse inserts the needle into your vein for the IV line and when they inject the local anesthetic. Most of the sensation is at the skin incision site. The doctor will numb this area using local anesthetic. You may feel pressure when the doctor inserts the catheter into the vein. However, you will not feel serious discomfort.

If the procedure uses sedation, you will feel relaxed, sleepy, and comfortable. You may or may not remain awake, depending on how deeply you are sedated.

As the contrast material (http://www.radiologyinfo.org) passes through your body, you may feel warm. This will quickly pass.

You will remain in the recovery room until you are completely awake and ready to return home.

You should be able to resume your normal activities within 24 hours. Blocking the blood flow into the diseased vein results in intentional clotting of blood in the vein. This may result in localized scrotal discomfort for up to a week following the procedure.

Who interprets the results and how do I get them?

After the procedure is complete, the interventional radiologist (http://www.radiologyinfo.org) will tell you whether the procedure was a success.

What are the benefits vs. risks?

Benefits

- No surgical incision is necessary—only a small nick in the skin that does not need stitches.
- The recovery time is shorter with embolization than with surgery.
- There is a 90% success rate with embolization, which are the same results as those achieved with more invasive surgical techniques.

Risks

- Any procedure that penetrates the skin carries a risk of infection. The chance of infection requiring antibiotic treatment appears to be less than one in 1,000.
- There is a very slight risk of an allergic reaction if the procedure uses an injection of contrast material (http://www.radiologyinfo.org) .
- Any procedure that places a catheter inside a blood vessel carries certain risks. These risks include damage to the blood vessel, bruising or bleeding at the puncture site, and infection. The doctor will take precautions to mitigate these risks.
- There is always a chance that an embolic agent (http://www.radiologyinfo.org) can lodge in the wrong place and deprive normal tissue of its oxygen supply.
- There is always a slight chance of cancer from exposure to radiation. However, the benefit of this treatment outweighs the risk.
- Other possible complications include lower back pain, inflammation within the scrotum (epididymitits) and inflammation of the veins (phlebitis).

What are the limitations of Varicocele Embolization?

In approximately five to 10 percent of patients who undergo varicocele embolization, the varicoceles return. This rate of varicocele recurrence is similar to the rate reported for more invasive surgical procedures.

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In less than five percent of patients who undergo varicocele embolization, the interventional radiologist will not be able to position the catheter adequately to allow blocking of the diseased draining vein.

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