

Antegrade sclerotherapy of varicocele

Patient information leaflet

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Varicocele - what is it and does it need treatment?



What is a varicocele?

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A varicocele is a collection of enlarged, tortuous veins in the scrotum. It usually occurs next to and above the testis. The affected veins are those that travel in the spermatic cord. The spermatic cord is like a 'tube' that goes from each testis up towards the groin and the lower abdomen. You can feel the spermatic cord above each testis in the upper part of the scrotum. The spermatic cord contains the vas deferens (the tube that carries sperm from the testes to the penis), blood vessels, lymphatic vessels, and nerves.

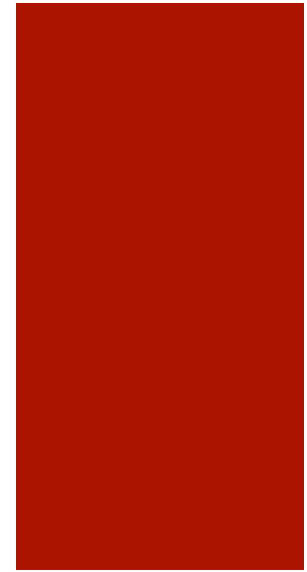
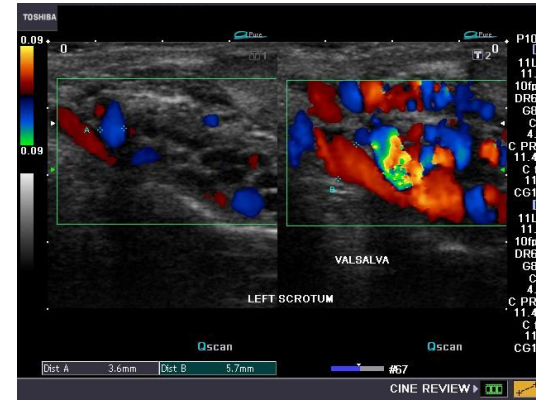
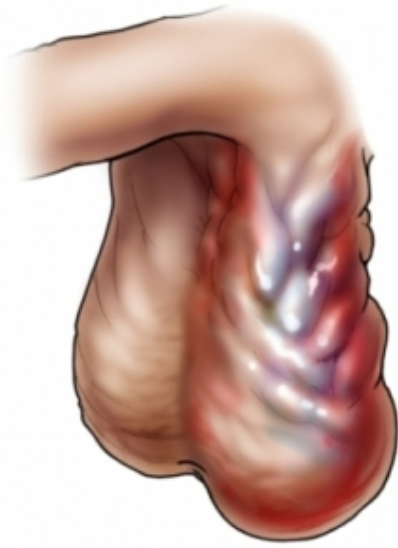
Normally, you cannot see or feel the veins in the spermatic cord that carry the blood from the testes. If you have a varicocele, the veins become bigger (they enlarge or dilate) and this makes them more prominent. It is similar to varicose veins of the legs. The size of a varicocele can vary. A large varicocele is sometimes said to look and feel like 'a bag of worms' in the scrotum.

Who gets a varicocele?

Varicoceles are common. About 1 in 7 men develop a varicocele - usually between the ages of 15 and 25. In most cases the varicocele is on the left hand side. A right-sided varicocele may be observed in association with a left varicocele, but an isolated right varicocele is very rare and raises concerns. The reason why most occur on the left side is because of the different route the left veins take out of the scrotum compared to the right.

What are the symptoms?

Varicoceles are usually painless and usually cause no symptoms. A small number of affected men notice a 'dragging' feeling or slight discomfort from their varicocele. This may only occur at the end of a day, especially if you are on your feet all day. The size of a varicocele varies from case to case. Some cannot be seen, only felt. Some are large and can be easily seen. If you lie down, the blood from the veins drains away and the varicocele may seem to disappear. On standing, gravity will cause the blood to pool again and the varicocele reappears.



What causes a varicocele?

In light of the fact that 90% of all varicoceles are left-sided, there are several possible causes for a varicocele: valves in the left testicular vein may be absent or defect and then allow retrograde flow of blood in the upright position. There is also a difference in the venous drainage of both testes: the left side drains at a right angle into the left renal vein, which predisposes to slower drainage. Compression between the aorta and another abdominal artery on the left side can cause higher pressure in the left testicular vein ("nutcracker phenomenon"). After all, the left testicular vein runs over a much longer distance (8-10cm) than the right.

What is the significance?

Varicoceles are cited as one of the leading causes of male factor infertility and are detected in 35% of adults with primary infertility. Effects of varicoceles on semen parameters have been extensively studied in adults. Consistent findings have included decreased sperm motility, lower sperm count and increased number of abnormal sperm forms. The proposed mechanism is most likely increased scrotal and testicular temperature due to pooling of venous blood in the dilated veins. This could be associated with low oxygen content in the dilated veins with subsequent tissue hypoxia.

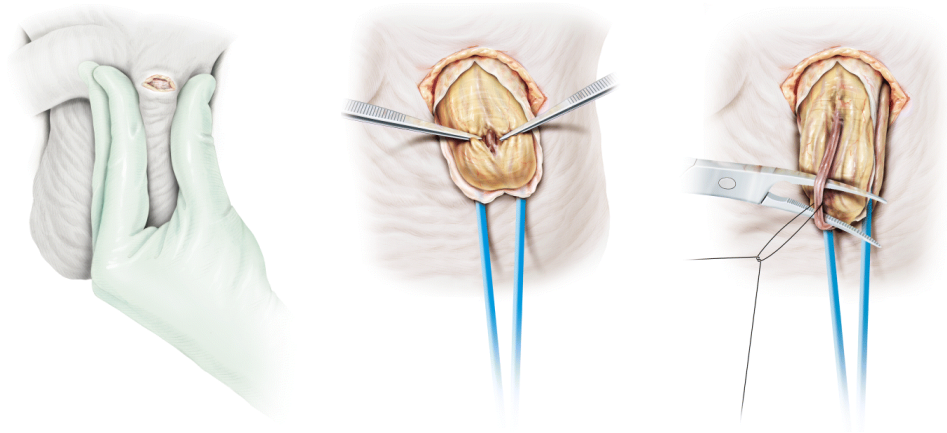
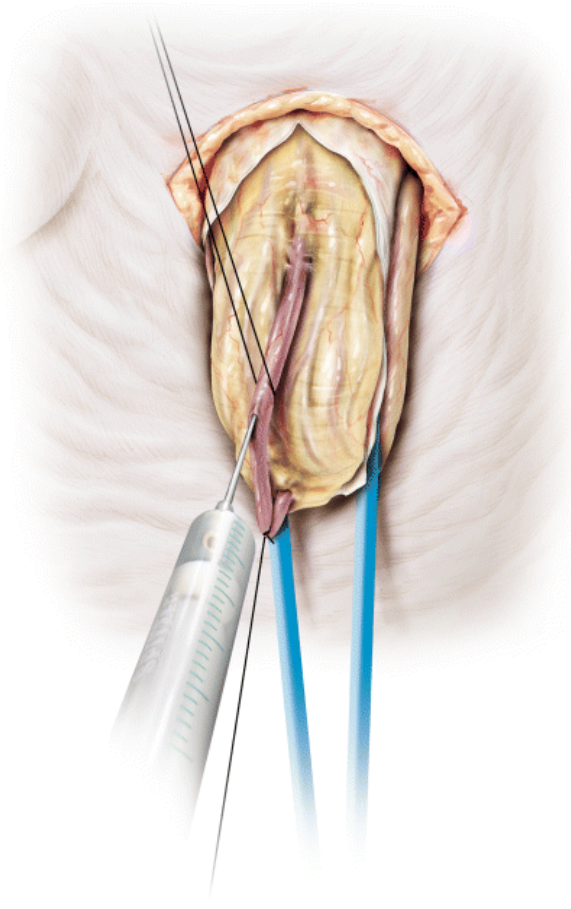
These findings may be reversed with corrective surgery.

Different treatment options

All treatment options rely on an interruption of blood flow through the refluxing spermatic veins and diversion of the blood into other – already present, but usually underutilized – veins that drain directly into blood vessels inside the pelvis.

This "interruption" can be performed either through surgery or interventional radiology on different levels along the course of the affected vein.

Methods include open or laparoscopic ("key hole") abdominal or inguinal surgery with division of the spermatic vein. Alternatively, the vein can be embolised by inserting small coils through a catheter inserted and advanced through a vein in the leg.



Antegrade sclerotherapy of varicocele – a minimal invasive treatment

Antegrade sclerotherapy was first introduced in 1988 as a minimal invasive treatment for varicoceles. Unlike retrograde embolisation this procedure is feasible in almost all patients, it is less invasive than open or key-hole surgery and therefore provides faster recovery to normal activities.

The treatment is performed as day-case surgery under either local or general anaesthetic and takes approximately 30min.

Through a very small incision in the upper part of the scrotum the spermatic

cord will be identified and one of the small veins of the varicocele will be cannulated. After injection of contrast dye to ensure that the vein drains into the large testicular vein in the back of the abdomen, your surgeon will inject a small amount of a sclerosing agent, which causes deliberate damage to the inner layer of cells in the testicular vein. The subsequent inflammatory response ultimately leads to closure of the affected blood vessel. Radiation exposure during the procedure is minimal.

Complications are very rare and include mild bruising, wound infection, treatment failure, testicular damage and extremely rarely an allergic reaction to the sclerosing agent.



Your surgery

What happens next?

Once you have taken the decision to undergo treatment for your condition, you will receive an appointment for your day-case surgery. You will need to have a preoperative assessment to check your general health in an attempt to minimize possible complications. Please make sure you inform your surgeon and anesthetist about all medical conditions, previous procedures and allergies and bring a list of all medication you take regularly.

On the day of your surgery:

You will be told when to stop eating or drinking in case your procedure will be carried out under general anesthetic. This includes smoking and using chewing gum or sucking sweets. Smoking significantly impairs wound healing and recovery from surgery, - it also causes problems with anesthetics, - it would be advisable to stop smoking at least 6 weeks prior to your procedure.

Before coming to hospital take a shower or bath and wash your hair. Since you will not be allowed to drive or go home on your own, please arrange for a relative or friend to be available to pick you up and bring you home. You should also make sure to have somebody around you at all times for the first 48hours after the operation.

Once your procedure has been carried out, you will wake up in recovery. Once the nursing staff is satisfied that you are well, you will return to the

ward and receive something to eat and drink.

Once you have sufficiently recovered to be sent home, you may arrange your transport.

Even though you have “only” had minor surgery, it is recommendable to rest as much as possible to prevent complications and speed up your recovery. Rest at home for at least 48hours, try not to move around too much and spend most of your time either in bed or the sofa. In case you have had scrotal or inguinal surgery, it might be helpful to wear a scrotal support or jock strap and use ice packs intermittently to prevent swelling.

While lying move your legs and feet to prevent the development of a thrombosis.

Please ensure that you have received a sufficient amount of painkillers and use them – when needed – not exceeding the maximum dose.

Your surgeon will tell you when you will be able to resume your normal activities and when you will be able to take your first bath or shower again. In scrotal and inguinal surgery, this will usually be the second day, but make sure you use only lukewarm water and take extra care to dry your wound afterwards (if necessary with a hairdryer).

Please make sure you have got a number to call in case of any complications or unforeseen events.

You will receive a follow-up appointment to be reviewed in clinic when you leave the hospital.



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