RADIOLOGICAL EMBOLISATION (BLOCKING UNDER X-RAY CONTROL) of a VARICOCELE

Information about your procedure from
The British Association of Urological Surgeons (BAUS)

This leaflet contains evidence-based information about your proposed urological procedure. We have consulted specialist radiologists during its preparation, so that it represents best practice in UK uroradiology. You should use it in addition to any advice already given to you.

To view this leaflet online, scan the QR code (right) or type the short URL below it into your web browser.

http://rb.gy/fnz1c

KEY POINTS

- Radiological embolisation is a minimally invasive way of treating a varicocele (abnormal. swollen varicose veins above your testicle)
- Eight out of 10 patients (80%) have a successful outcome from this procedure
- Varicocele embolisation is less invasive than surgery and is done under local anaesthetic
- There is no significant risk of testicular atrophy (shrinkage) or development of a hydrocele (fluid around your testicle) compared with surgical approaches

What does this procedure involve?

A varicocele is an abnormality of the veins that carry blood away from your testicle.

The valves in the veins do not work properly, so the veins become larger and more obvious, rather like varicose veins in the leg.

Th veins that drain the testicle are connected higher up in your abdomen (tummy) through a vein that connects between the testicle and the level of your kidneys. The aim of the procedure is to block this vein at a point in th middle/lower abdomen to treat the varicocele.

Published: Sep 2024
Review due: Sep 2026
Leaflet No: A24/046
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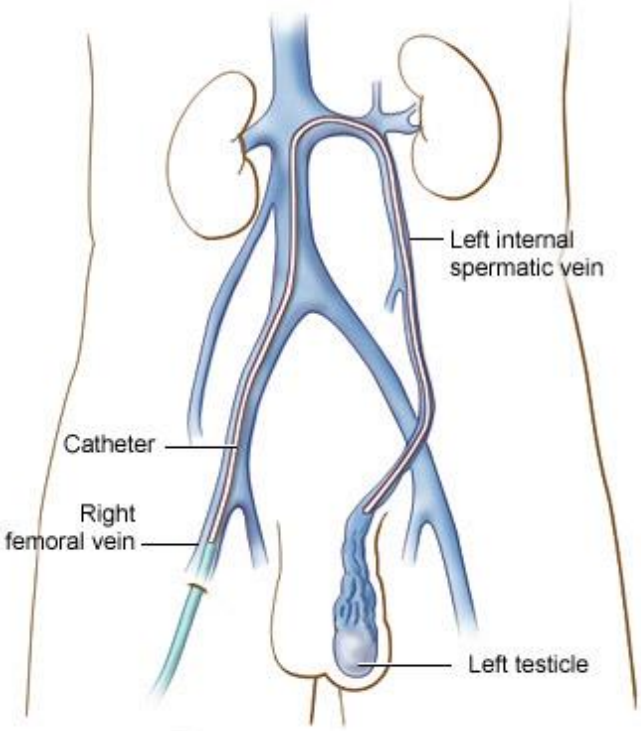

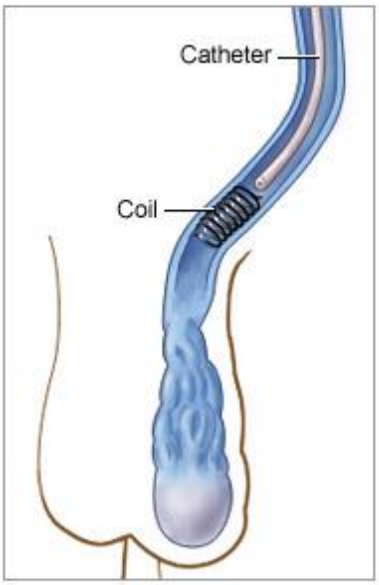

The embolisation (blocking) involves plugging the veins that drain the blood flow from your testicle. This does not affect the arteries that supply blood to your testicle.

Embolisation is a minimally invasive treatment using x-ray image guidance which allows the doctor (an interventional radiologist) to plug the enlarged vein from your testicle using either a metallic implant (an embolisation coil; see image above) or a liquid sclerosant that is delivered into the vein above your groin; this then causes the testicular veins to shrink.

The interventional radiologist will navigate a fine guidewire into the abnormal veins, and then pass a small tube (catheter) over the wire to block them. This is done through a small (3-4 mm) incision either in the lower neck or in the groin. It is normally carried out as a day case procedure.

Access into the vein in the neck or groin is very safe and is normally carried out using ultrasound guidance, following a small injection of local anaesthetic into the skin.

Why have I been referred for embolisation?

A varicocele can cause discomfort in your scrotum; this is often worse when you are standing, exercising or cycling. Varicoceles may also be diagnosed during the investigation of infertility, and treatment of the varicocele may help to improve your sperm quality.

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What are the alternatives?

- **Observation** – no treatment if your varicocele is small and causes no symptoms
- **Microsurgical repair** – using microsurgical clipping of the veins through a small incision in your groin
- **Laparoscopic repair** – clipping the varicose veins using a telescope put into your abdominal (tummy) cavity Surgical repair of a varicocele (open or laparoscopic) needs a general anaesthetic, is performed in an operating theatre and requires a period of recovery afterwards.

What happens on the day of the procedure?

Your radiologist (or a member of radiology staff) will briefly review your history and medications, and will discuss the procedure with you to confirm your consent.

Please feel free to ask any questions that you may have and remember that, even at this stage, you can still change your mind and decide not go ahead with the procedure.

Details of the procedure

A specially trained team, led by an interventional radiologist, will treat you in the radiology (X-ray) department. Interventional radiologists are Consultants who have special expertise in using imaging to guide catheters & wires around the body and to perform minimally invasive treatments.

The procedure will take place in the angiography suite or theatre. This is usually located within the radiology department. It is similar to an operating theatre but it has specialised X-ray equipment installed.

You may be asked not to eat for 6 hours before the procedure, although you may still drink clear fluids such as water. If you have any allergies or have previously had a reaction to X-ray dye (contrast medium), you must tell the radiology staff before you have the procedure.

You will be asked to get undressed and put on a hospital gown. A small cannula (thin tube) will be placed into a vein in your arm.

You will lie on the X-ray table, generally flat on your back. A needle will be inserted into a vein in your arm, so that a sedative or painkillers can be

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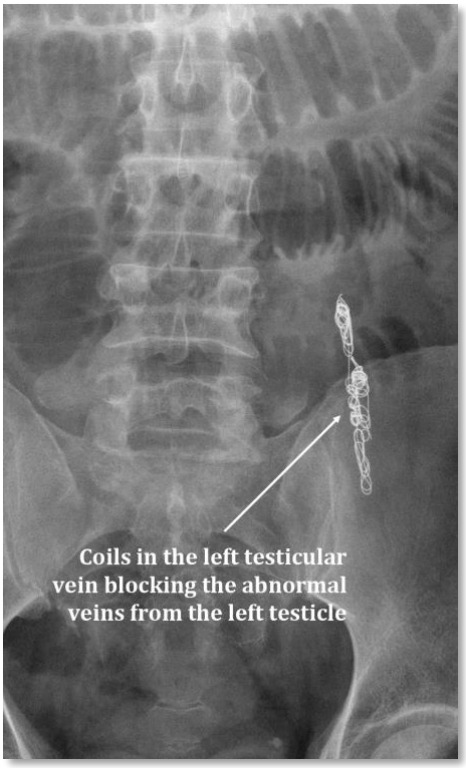
given if required._You may have monitoring devices attached to your chest and finger, and you may be given oxygen to breathe.

The procedure is performed under sterile conditions; the interventional radiologist (and radiology nurse) will wear sterile gowns and gloves.

The skin near the point of insertion, usually in the groin or the neck, will be swabbed with antiseptic and you will be covered with sterile drapes. The skin and deeper tissues over the vein will then be numbed with local anaesthetic, and a fine tube (catheter) will be inserted into the vein.

The interventional radiologist will then navigate a guidewire into position down the testicular vein. The vein will be blocked by inserting either small metallic coils (see image, right), or a sclerosant liquid which causes the veins to close permanently. The radiologist will inject small amounts of dye (contrast agent) to check the position of the catheter, and to ensure that all the abnormal veins are blocked satisfactorily.



Once they are blocked, the catheter will be removed. The interventional radiologist will press firmly on the skin entry point for a few minutes to prevent any bleeding and, will then apply a small dressing to your neck or groin.

Most embolisation procedures take a proximately 45-60 minutes to complete but each patient is different, and it can be difficult to predict the exact duration of the procedure.

Afterwards, you will be carefully monitored for 2-3 hours; you will normally go home on the same day as the procedure.

Will it hurt?

Once the first injection is performed with local anaesthetic, the remainder of the procedure is usually not painful - the veins inside the body do not feel the movement of the guidewires inside the body. You may feel a warm

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sensation for a few seconds when the dye is injected, and it may feel like you are passing urine.

You may have a small skin bruise afterwards but the procedure itself should not be painful.

Are there any after-effects?

The possible after-effects and your risk of getting them are shown below. Some are self-limiting or reversible, but others are not. We have not listed very rare after-effects (occurring in less than 1 in 250 patients) individually. The impact of these after-effects can vary a lot from patient to patient; you should ask your surgeon's advice about the risks and their impact on you as an individual:

After-effect	Risk
Bruising at the skin puncture site	Between 1 in 2 & 1 in 10 patients
Pain around the puncture site which can sometimes worsen in the days after the procedure	Between 1 in 2 & 1 in 10 patients
Back pain for 48 to 72 hours after the procedure	Between 1 in 2 & 1 in 10 patients
Infection at the skin puncture site requiring antibiotics or surgical drainage	Between 1 in 10 & 1 in 50 patients
Recurrence of the varicocele, requiring either repeat embolisation or surgical treatment	Between 1 in 10 & 1 in 50 patients
Damage to, or bleeding from, the punctured vein requiring surgical repair	Between 1 in 50 & 1 in 250 patients

Published: Sep 2024
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Leaflet No: A24/046
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A coil may displace & pass into your lung; if this happens it can often be retrieved but, if it cannot, it is unlikely to cause long-term problems, although you may have a cough and mild chest pain for a few days	Between 1 in 50 & 1 in 250 patients
Failure to obtain satisfactory positioning of the coil(s) requiring further surgical treatment	Between 1 in 50 & 1 in 250 patients

What is my risk of a hospital-acquired infection?

Your risk of getting an infection in hospital is between 4 & 6%; this includes getting *MRSA* or a *Clostridium difficile* bowel infection. This figure is higher if you are in a "high-risk" group of patients such as patients who have had:

- long-term drainage tubes (e.g. catheters);
- bladder removal;
- long hospital stays; or
- multiple hospital admissions.

What can I expect when I get home?

- you should rest at home for the remainder of the day
- you can resume normal activities after 24 hours
- simple painkillers such as paracetamol should help any discomfort you get
- the veins above your testicle often become more prominent and tender in the first few days after the procedure; gradually, this becomes less obvious although the veins may not disappear completely
- any antibiotics or other tablets you may need will be arranged & dispensed from the hospital pharmacy
- a follow-up appointment will be made for you
- if you develop a temperature, increased redness or discharge of pus from the site of the puncture, contact your GP or the surgical team looking after you
- bleeding from the puncture site when you get home is very rare but, if it does happen, press firmly on the site for 10 to 20 minutes; this should stop the bleeding

Published: Sep 2024
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- if the bleeding does not stop, you should contact your GP or go to your local Accident & Emergency Department

General information about surgical procedures

Before your procedure

Please tell a member of the medical team if you have:

- an implanted foreign body (stent, joint replacement, pacemaker, heart valve, blood vessel graft);
- a regular prescription for a blood thinning agent (e.g. warfarin, aspirin, clopidogrel, rivaroxaban, dabigatran);
- a present or previous MRSA infection; or
- a high risk of variant-CJD (e.g. if you have had a corneal transplant, a neurosurgical dural transplant or human growth hormone treatment).

Before you go home

The radiologist will tell you how the procedure went and you should:

- make sure you understand what has been done;
- ask if everything went as planned;
- let the staff know if you have any discomfort;
- ask what you can (and cannot) do at home;
- make sure you know what happens next; and
- ask when you can return to normal activities.

We will give you advice about what to look out for when you get home. Your radiologist or nurse will also give you details of who to contact, and how to contact them, in the event of problems.

Smoking and surgery

Ideally, we would prefer you to stop smoking before any procedure. Smoking can worsen some urological conditions and makes complications more likely after surgery. For advice on stopping, you can:

- contact your GP;
- access your local NHS Smoking Help Online; or
- ring the Smoke-Free National Helpline on **0300 123 1044**.

Driving after surgery

It is your responsibility to make sure you are fit to drive after any procedure. You only need to contact the DVLA if your ability to drive is

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likely to be affected for more than three months. If it is, you should check with your insurance company before driving again.

What should I do with this information?

Thank you for taking the trouble to read this information. Please let your urologist (or specialist nurse) know if you would like to have a copy for your own records. If you wish, they can also arrange for a copy to be kept in your hospital notes.

What sources were used to prepare this leaflet?

This leaflet uses information from consensus panels and other evidence-based sources including:

- the Department of Health (England)
- the Cochrane Collaboration
- the National Institute for Health and Care Excellence (NICE)
- the Royal College of Radiologists
- the British Institute of Radiology

It also follows style guidelines from:

- the Royal National Institute for Blind People (RNIB);
- the Patient Information Forum; and
- the Plain English Campaign.

DISCLAIMER

Whilst we have made every effort to give accurate information, there may still be errors or omissions in this leaflet. BAUS cannot accept responsibility for any loss from action taken (or not taken) as a result of this information.

PLEASE NOTE: the staff at BAUS are not medically trained, and are unable to answer questions about the information provided in this leaflet. If you have any questions, you should contact your Urologist, Specialist Nurse or GP in the first instance.

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