

# Varicocele embolization – image guided

## Information for Patients

This leaflet explains varicocele embolisation. It covers what to expect, including the benefits, the possible risks and the alternatives.

Before the varicocele embolisation, a clinical staff member will explain the procedure to you in detail. This leaflet is not meant to replace that discussion. If you have any questions or concerns, please do not hesitate to talk to the doctors or nurses who are caring for you. It is important that you feel well informed before agreeing to the procedure and signing the consent form.

### **Confirming your identity**

Before you have a treatment or procedure, our staff will ask you to confirm your name and date of birth and check your ID band. If you do not have an ID band, we will ask you to confirm your address. If we do not ask these questions, then please ask us to check. Ensuring your safety is our primary concern.

### **What is varicocele embolisation?**

It is way of treating an enlarged and troublesome enlargement of the blood vessels (veins) in your scrotum (varicocele) without surgery. The veins transport blood away from your testis and contain valves that prevent this blood from flowing backwards. If these valves are not working well, the blood does not flow out of your scrotum properly and you develop varicocele.

We will put very tiny metal coils, which look like springs, into the abnormal veins to divert the blood flow to nearby veins. This allows the blood to leave your scrotum and causes the varicocele to shrink. We sometimes use other blocking materials, including special glue, plugs or a liquid which scars the vein. Sometimes we use several different materials together.

You often have no symptoms if you have varicoceles, but the enlarged veins can sometimes cause swelling, pain and discomfort, similar to varicose veins in your leg.

Varicoceles can also cause a low sperm count, which results in sub fertility, especially if you have them in both testicles.

You will also have a dye injected which shows up on an x-ray machine. This is to ensure the blocking materials are put in the correct place.

This is a minimally invasive procedure which you have with a local anaesthetic, so you will be awake.

## **Why do I need varicocele embolisation?**

A varicocele can cause discomfort in your scrotum which is often worse when standing, exercising or cycling. It can also cause a decline in how your testicles work. This treatment will ease your discomfort or pain and may also help improve your sperm count and sperm production.

If you have developed more varicoceles after surgery to remove them, embolisation is often the best choice because of the complexity of the veins in your scrotum after the operation.

## **What are the risks?**

Varicocele (testicular) embolisation is a very safe procedure. However, as with any minimally invasive medical procedure, there are possible risks and complications. These include:

- **Bleeding at the puncture (needle-entry) site.** This may cause a small bruise, which will disappear in a week or two.
- **Mild discomfort in your groin and scrotum.** This may last for a few days and is common.
- **Inflammation** within your scrotum known as epididymitis. This may be painful for a few days.
- **Low back pain.** This can sometimes be worse when you bend your hips and is caused by inflammation around the testicular vein after the procedure.
- **Misplacement of the coil** (in the kidney vein or other large veins). This happens very rarely and we use x-ray images to guide us during the procedure to reduce this risk. Should this happen, we can usually retrieve and replace the coil.
- **Migration of a coil to your lungs.** The coil can travel to your lungs if it is too small or we have a problem placing it. We can usually retrieve and replace it. If we cannot retrieve it, the chance of it causing a clinical problem is very low, although you may have a cough and/or chest pain which generally eases in few days.
- **Failed embolisation.** This is uncommon and happens when we cannot safely place the embolisation coil. It can happen when the veins have an unusual structure.
- **Allergic reaction caused by the contrast agent** (dye).
- **Infection** (1 in 1,000). This can be treated with antibiotics.
- **Recurrence of varicocele.** The symptoms may come back.

## **Radiation risk**

We use x-rays to guide us while we are doing this procedure. X-rays are a type of ionising radiation to form images of your body and provide treatment. Radiation exposure during this procedure is generally low, but you might need higher radiation doses if your case is difficult or complex.

With higher radiation doses, there can be a risk of skin damage in the localised area, similar to sun burn. If we think that you are at risk of this, we will tell you before you leave the department. The radiographer will make sure that your dose is kept as low as possible and that the benefits of having the x-ray outweigh any risk.

The likelihood of this happening differs from person to person, depending on various factors such as age, medical conditions and the structure of the varicocele. Your doctor will discuss this with you at the time of the procedure.

## **What are the benefits?**

You have this procedure as a day case as it usually takes only about two – three hours for you to recover in hospital and you can go home the same day. As it is a minimally invasive procedure, you need only a small cut in your skin, so you do not need stitches. The success rate is almost the same as the invasive surgical procedure.

## **Are there any alternatives?**

You can have surgery called a varicocelectomy, in which the varicoceles are treated by cutting the veins and then closing off the ends. These are the same veins which are treated during varicocele embolisation. This surgery can be done in several different ways.

Your urology surgeon feels that at this time embolisation is best for you. An infertility expert and Interventional radiologist may also have discussed your case and feel that this is the best treatment option for you.

You will have the opportunity to discuss your treatment preferences and you can decide against having this procedure if you do not want it.

## **Where will I have the procedure?**

You will have the procedure at one of the two places:

### **Consent**

We must by law obtain your written consent to any operation and some other procedures beforehand. Staff will explain the risks, benefits and alternatives before they ask you to sign the consent form. If you are unsure about any aspect of the procedure or treatment proposed, please do not hesitate to speak with a senior member of staff again. We will inform your GP that you have had this procedure unless you specifically instruct us not to.

- Interventional Radiology Department, 1st Floor, Denmark Wing, King's College Hospital (KCH), Denmark Hill; or
- Interventional Radiology Department, 1<sup>st</sup> Floor, South Wing, Princess Royal University Hospital (PRUH).

## How can I prepare for the procedure?

**Pre-assessment appointment:** We will arrange for you to have a pre-assessment appointment with the Interventional Radiology nurse, either in person or by phone. The nurse will ask you questions about you, your health and the medications you take. A blood sample will be taken to check that you are in good general health and how well your blood clots. You usually have the blood test in our department at either King's College Hospital or Princess Royal University Hospital (PRUH), but sometimes you may have it taken at your local GP.

After your pre-assessment, we will arrange a date and time for your varicocele embolisation. We usually let you know the appointment details the same day as your pre-assessment.

**Drugs and alcohol:** Do not use any recreational drugs or drink alcohol for 24 hours before the procedure.

**Medications:** Please make sure the doctor or nurse knows if you are diabetic and if you are taking oral diabetic tablets such as metformin or insulin injections. Also tell them if you are taking any of the following blood-thinning medications (anticoagulants): aspirin, clopidogrel, warfarin, apixaban, rivaroxaban, edoxaban, ticagrelor, prasugrel, phenprocoumon, acenocoumarol, dagibatran, argatroban, heparins, fondaparinux, enoxaparin.

They will tell you when to stop taking your medications and when it is safe to start taking them again.

Usually, you will need to stop taking these medications a few days to a week before the procedure. But do not stop them on your own without talking to your doctor first. They will tell you when to stop and when it's safe to start taking them again.

If in doubt, please bring with you all the medications you are taking, whether they have been prescribed for you or if you have bought them over the counter at your local chemist store.

## Will I be admitted to hospital for the procedure?

## Important

- **Ideally, you need to live within 30 minutes' travelling time of your nearest hospital and have access to a phone in case you need urgent treatment after you have gone home.**
- **(Day Case Patient) You also need to arrange for a responsible adult to take you home after your Varicocele Embolisation and stay with you for next 24 hours.**

You will have your procedure as a day case patient or a TCI patient. We explain what this means below. We will let you know which one applies to you.

1. **Day case patient:** You will have the procedure in the morning and, if everything is normal and you are stable, you will be discharged home later in the day. Please arrive at Interventional Radiology at 8am so you can be admitted to the unit.
2. **To come in (TCI) patient:** You will be admitted to the hospital the day before your procedure and stay overnight before your procedure. Rarely, you may be admitted on the morning of your procedure. The bed manager will call you to let you know when to arrive and which ward to go to.

## What happens before the procedure?

**Eating and drinking:** Have light breakfast no later than 5am but **do not** eat anything after this time. You can drink clear fluids (water, black tea, black coffee) up to **two hours** before your procedure.

**Medications:** Keep taking your regular medications, except for any blood-thinning ones, if instructed. Remember to take your blood pressure medication on the morning of the procedure (if applicable). If your blood pressure is too high on the day of the varicocele embolisation, you might need to have the procedure on another day.

**What to bring with you:** Please bring all your medications and something to read.

**What not to bring with you:** Do not bring valuables, jewellery or large sums of money with you. If this unavoidable, please ask a relative or friend to take them home for you. The hospital cannot accept liability for the loss of items that are not handed in for safekeeping.

## What happens before the procedure?

One of our nurses will ask you to change into a gown. They will take your observations, check your blood pressure, heart rate and temperature, and ask you some questions. They will put a small, thin tube called a cannula into a vein in your hand or arm so we can give you medications such as pain relief if you need them during or after the procedure.

You will be taken by the IR nurses to the room in Interventional Radiology where you will have the procedure.

## What happens during the procedure?

An Interventional Radiologist – a specialist doctor trained in image-guided procedures – will carry out your varicocele embolisation. They will explain the procedure to you, ask for your consent and then do your procedure

They will ask you to lie on your back on a special x-ray table and ensure you are in a comfortable position before they start. A nurse will attach a monitoring device to check your heart rate, breathing, blood oxygen level and blood pressure during the procedure.

The doctor will access a vein for the procedure, either in your groin or your neck:

- **Groin access:** if the varicocele is on the left side, we will shave your groin and clean the area.
- **Neck access:** if the varicocele is on the right side or both sides, we will clean an area in your neck and place a drape over you which looks like a tent.

The doctor will inject a local anaesthetic into the skin in your groin or neck. This may sting at first before the area becomes numb. Using an ultrasound machine to guide them, they will then make a small cut and then put a needle into a vein in your groin or neck and advance a guide wire through the needle. They check this is in the correct position using the x-ray images.

The needle is taken out and a plastic tube (sheath) placed over the wire to secure the access site. The doctor will then advance a thin plastic tube (catheter) down into the vein in your testicle.

They will inject a dye (contrast medium) into the catheter to check it is in the right place. When the dye goes in you may briefly feel like you need to pee or have a metallic taste in your mouth. This is normal.

Once they find the abnormal veins, they will block them, usually by putting in tiny metal coils. This diverts the blood flow to nearby veins and allows the blood to leave your scrotum normally.

Once the veins are blocked, the doctor will take out the catheter and sheath. To prevent any bleeding, they will press firmly for few minutes on the area in your neck or groin where they made the cut.

## Will the procedure hurt?

You have this procedure under local anaesthetic. It is generally painless, apart from the brief sting you feel when you have the local anaesthetic injection.

You may feel some discomfort in your scrotum when the doctor starts blocking the veins or towards the end of the procedure, but this is normal and can be treated with painkillers that we will give through the cannula in your hand or arm.

If you have any pain or discomfort, tell our nursing staff and they will give you some painkillers.

### **How long will it take?**

It usually takes about an hour but it can take longer.

### **What happens after the procedure?**

You will be taken to Interventional Radiology Recovery on a trolley/bed and monitored closely to ensure there are no complications.

**Groin access:** If you had the cut made in your groin, you need to stay in bed for two hours – one hour lying flat, the second hour sitting up.

**Neck access:** If you had the cut made in your neck, you can sit up in bed as soon as the procedure is finished and rest here for two hours.

You can eat and drink normally once you are in recovery. We will give you hot drinks and a sandwich. If you need any special food, please bring this with you as we are unable to provide it.

### **When can I go home?**

As long as you have no complications such as pain, bleeding or swelling at the operation site, you can go home after your bed rest. Your escort should collect you from the department once you are ready for discharge.

### **How do I care for the cut?**

Keep the puncture site dry for two days. You can take a shower. Remove the dressing from your groin or neck before you shower and gently clean the area with soap and water. Dry well and put on a small plaster. Do not use powder or lotion on the puncture site.

### **When can I exercise again?**

Take it easy for the rest of the day. You can go back to normal daily activities in the next one – two days. Avoid strenuous activities such as jogging, heavy lifting and contact sports for five – seven days. Do not have sex for a week.

## **What should I look out for after the procedure?**

You will have mild discomfort after the procedure. You can ease this with over-the-counter painkillers. If the pain becomes so severe that these painkillers do not ease it, call your GP or go to your nearest Emergency Department (A&E).

## **What can I eat and drink?**

Eat a soft solid diet for three days to prevent constipation. Drink plenty of fluids, unless otherwise instructed by your doctor

## **Will I have a follow-up appointment?**

The doctor and/or clinical team who referred you for this procedure will book you for a follow-up appointment a few months after your procedure. You will be contacted by their team for this. You might have an ultrasound scan to check how well the procedure has worked.

If you had the procedure because of infertility, you will have semen analysis four – six months afterwards.

## **What should I do if I cannot come for my procedure?**

Please let us know as soon as possible by contacting the Interventional Radiology Department at the relevant location, so we can arrange another date and time. This also enables us to offer your appointment time to someone else.

- King's College Hospital, Denmark Hill, Tel: **020 3299 3490**, **020 3299 6730** or **020 3299 3280**
- Princess Royal University Hospital, tel: **01689 863671**

## **Who do I contact with queries and concerns?**

If you have any questions about your procedure, please contact the Interventional Radiology Nurses:

- King's College Hospital, Denmark Hill, Tel: **020 3299 3490** or **020 3299 2060**, 9am – 5pm, Monday to Friday
- PRUH, Tel: **01689 863671**, 9am – 5pm, Monday to Friday

## **More information and support**

- King's College Hospital: [www.kch.nhs.uk](http://www.kch.nhs.uk)
- NHS: [www.nhs.uk](http://www.nhs.uk), tel: **111**
- British Society of Interventional Radiology – [www.bsir.org](http://www.bsir.org) (click on Patients, click on patient information leaflets, select leaflet)



## **MyChart**

Our MyChart app and website lets you securely access parts of your health record with us, giving you more control over your care. To sign up or for help, call us on **020 3299 4618** or email **kings.mychart@nhs.net**. Visit **www.kch.nhs.uk/mychart** to find out more.

## **Sharing your information**

King's College Hospital NHS Foundation Trust has partnered with Guy's and St Thomas' NHS Foundation Trust through the King's Health Partners Academic Health Sciences Centre. We are working together to give our patients the best possible care, so you might find we invite you for appointments at Guy's or St Thomas' hospitals. King's College Hospital and Guy's and St Thomas' NHS Foundation Trusts share an electronic patient record system, which means information about your health record can be accessed safely and securely by health and care staff at both Trusts. For more information, visit **www.kch.nhs.uk**.

## **Care provided by students**

We provide clinical training where our students get practical experience by treating patients. Please tell your doctor or nurse if you do not want students to be involved in your care. Your treatment will not be affected by your decision.

## **PALS**

The Patient Advice and Liaison Service (PALS) offers support, information and assistance to patients, relatives and visitors. They can also provide help and advice if you have a concern or complaint that staff have not been able to resolve for you.

PALS at King's College Hospital, Denmark Hill, London SE5 9RS:  
Tel: **020 3299 3601** Email: **kch-tr.palsdh@nhs.net**

You can also contact us by using our online form at **www.kch.nhs.uk/contact/pals**

PALS at Princess Royal University Hospital, Farnborough Common, Orpington, Kent BR6 8ND  
Tel: 01689 863252  
Email: **kch-tr.palspruh@nhs.net**

**If you would like the information in this leaflet in a different language or format, please contact our Interpreting and Accessible Communication Support on 020 3299 4618 or email **kings.access@nhs.net****

**www.kch.nhs.uk**

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