

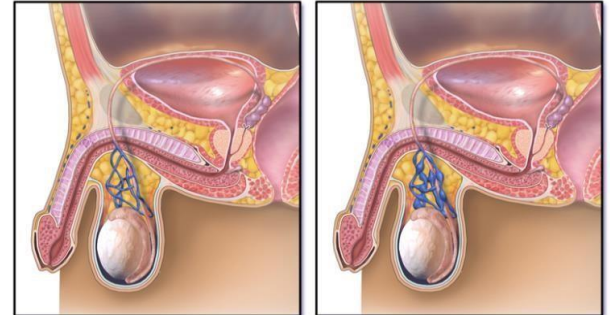


For more information please visit us online at: <http://www.osmh.on.ca/diagnostics/>

**If you or your support person do not clearly understand the procedure, please ask for clarification**

## KEY POINTS:

- Varicocele embolization is a minimally invasive procedure to treat varicose veins above the testicle.
- The procedure has an 80% success rate.
- It is less invasive than surgery and done with local anesthesia.
- There is no significant risk of testicle shrinkage or fluid buildup around the testicle compared to surgery.



**Normal**

**Varicocele**

## KEEP IN MIND:

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. **Follow-up imaging studies are generally not required.**

## PLEASE REMEMBER:

Please arrive at hospital registration by 8:30 AM on the day of your appointment. We will contact you with the scheduled date.

Let your medical team know if you have any of the following:

- An implanted device (e.g., stent, joint replacement, pacemaker, heart valve, or blood vessel graft)
- Allergies
- A regular prescription for blood thinners (e.g., warfarin, aspirin, clopidogrel, rivaroxaban, or dabigatran)
- A current or recent infection or fever



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## VARICOCELE VEIN EMBOLIZATION

### What is it?

A varicocele is a collection of enlarged veins in the scrotum, similar to varicose veins in the legs, that drain blood from the testicle. It often develops in young men during puberty and can cause discomfort, swelling, or even affect fertility.

Varicocele embolization is a minimally invasive procedure that treats these enlarged veins without surgery. Using a small catheter, the affected vein is blocked with a substance or device, stopping blood flow to the varicocele. Over time, this causes the varicocele to shrink and symptoms to improve.

### Why do I need it?

Reasons your doctor or healthcare provider may have ordered this procedure include<sup>4</sup>:

- Pain caused by the varicocele.
- Infertility associated with the varicocele.
- Recurrence of varicocele after surgical ligation.
- Failed surgical ligation due to collateral veins not visible during surgery but identified via venography.
- Presence of an isolated right-sided varicocele (requires additional imaging to rule out venous compression from malignancy).

### What are the alternatives?

**Observation:** No treatment is needed if your varicocele is small and doesn't cause any symptoms.

**Open Surgery:** A traditional or microsurgical approach to repair the varicocele.

**Laparoscopic Surgery:** A "keyhole" surgical technique performed inside the abdominal cavity.

Both open and laparoscopic surgeries require general anesthesia, are performed in an operating room, and involve a recovery period afterward.

### What are the potential risks and after-effects?

The possible risks and after-effects and their likelihood are listed below. Some are temporary or reversible, while others are not. Very rare effects (affecting fewer than 1 in 250 patients) are not listed individually.

Potential risks to this procedure may include one or more of the following:

- **Bruising** at the puncture site (common: 1 in 2 to 1 in 10 patients).
- **Pain around the puncture site**, which may worsen after the procedure (common: 1 in 2 to 1 in 10 patients).
- **Back pain** lasting 48–72 hours after the procedure (common: 1 in 2 to 1 in 10 patients).
- **Infection** at the puncture site, potentially requiring antibiotics or drainage (less common: 1 in 10 to 1 in 50 patients).
- **Recurrence of the varicocele** (less common: 1 in 10 to 1 in 50 patients).

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### HOW IS THE PROCEDURE PERFORMED?

#### Before

For specific questions regarding the clinical need for this procedure, please contact your ordering provider.

#### Patient Preparation:

You should wear loose-fitting clothing that is easy to change out of. **You will need to arrange for someone to drive you home after you have recovered from the procedure.** One support person (spouse, friend, caregiver, family member) may accompany you on the day of your appointment, but not into the procedure room.

You may have clear fluids up to **four hours** before the procedure. Continue taking your morning medications, **except for blood thinners** (see next page), with a small sip of water.

Please bring a list of the medications you are currently taking and a list of any drug/medication allergies you may have.

Please phone the Diagnostic Imaging booking line at **705-325-2201 ext. 3505** for cancellations or rebooking if you are unable to attend your appointment.

#### Bloodwork:

Your doctor or healthcare provider will order bloodwork and it must be completed **within 1 week before** your scheduled procedure to ensure we receive your results before your appointment. Unavailable bloodwork results may cause a delay or rebooking of your procedure.

#### Medication:

Your doctor or healthcare provider will also ask you to stop any blood thinners you take (also known as anticoagulation or antiplatelet medications). Talk to your doctor or healthcare provider about which medications need to be stopped prior to the procedure, for how long, and when you can safely start them again.

The following medications must be stopped prior to the procedure as per the listed times. Discuss this with your doctor or healthcare provider if you have concerns about stopping any of the below medications:

Medication		Number of Days to Hold
Enoxaparin	(Lovenox)	Withhold 1 dose before procedure
Dalteparin	(Fragmin)	Withhold 1 dose before procedure
Apixaban	(Eliquis)	Withhold 3 days before procedure
Rivaroxaban	(Xarelto)	Withhold 3 days before procedure
Dabigatran	(Pradaxa)	Withhold 4 days before procedure
Warfarin*	(Coumadin)	Withhold 5 days before procedure until target INR $\leq 1.8$
Clopidogrel	(Plavix)	Withhold 5 days before procedure
ASA	(Aspirin™)	Withhold 5 days before procedure

\*Patients on **Warfarin (Coumadin)** require a new INR drawn 1 day before the procedure.



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#### Coming To The Hospital

You must first sign-in with **Centralized Patient Scheduling & Registration (CPSR)**, which is located immediately to your left when you enter the hospital from the main entrance (off Dunlop Street, across from the gift shop). You'll receive a wristband and, for new tube insertions, be directed to **Day Surgery**. They'll prepare you and take you to **Diagnostic Imaging** at your scheduled time.

**Please bring to the hospital your OHIP card and a list of current medications you are taking.**

You may also bring a book, water, phone/tablet with earphones, and a snack in a small bag for when you are recovering from the procedure.

#### During

This procedure is performed in the Interventional Radiology Department of Diagnostic Imaging.

**The duration of your appointment time will vary from 1 hour – 2 hours.**

**You will recover in the Post Anesthesia Care Unit (PACU) for another 1 hour – 2 hours.**

1. You will change into a hospital gown and lie on your back on a fluoroscopy table.
2. A medical radiation and imaging technologist (MRIT) will explain the procedure and answer any questions you have.
3. The procedure is performed under sterile conditions. Your neck will be cleaned with a hospital-approved cleansing agent, and sterile drapes will be applied.
4. You will be awake for the procedure but may receive pain medication and a local anesthetic (Lidocaine) to numb the area.
5. Once the area is numb, the interventional radiologist will insert a needle into a large vein, guided by ultrasound and x-rays.
6. A thin wire and catheter (narrow tube) will be inserted through the vein and guided to the enlarged varicocele veins under x-ray imaging.
7. Once in position, the radiologist will inject coils and/or a special liquid to block the abnormal veins, stopping the flow of blood from the testicle.
8. Additional x-rays will be taken to confirm the veins are fully blocked. You will not feel the catheter or wires moving inside your veins.
9. After treatment, the catheter will be removed, and the radiologist will apply firm pressure to the puncture site to prevent bleeding. A dressing will be applied.
10. You will recover in the Post-Anesthesia Care Unit (PACU) and be discharged once you meet recovery criteria. In some cases, an overnight hospital stay may be needed for observation.

#### WHAT TO EXPECT AFTER<sup>1,2,3</sup>



#### Recovery & Going Home

You will be sent to the **Post Anesthesia Care Unit (PACU)** to recover from the procedure. A nurse will monitor your blood pressure, pulse, and the puncture site to ensure there is no bleeding. You will rest in bed for about an hour, and most patients go home the same day. In rare cases, an overnight stay may be required. This possibility will be discussed with you at the time of your consultation appointment.

**You will need someone to drive you home after the procedure.** Don't drive for the next 24 hours or while you're taking strong pain medicine. If you were given medication to help you relax or manage pain during the procedure, then you cannot drive for the next 24 hours.



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#### Diet & Activity

- Rest for the remainder of the day. Sleep when you feel tired.
- Have an adult family member, caregiver, or friend stay with you the night after the procedure in case you need help.
- Resume your normal diet after 24 hours, but if you feel nauseous, try bland, low-fat foods like rice, chicken, toast, or yogurt.
- You may resume light activities after 24 hours.
- Avoid lifting anything heavier than 4.5 kilograms (10 pounds) or straining on the toilet for 48 hours.
- Do not participate in sports or strenuous activity.
- You can bathe or shower whenever you feel ready.
- Gradually increase your physical activity as you feel comfortable.
- Depending on your job, you can return to work when you feel ready.
- Check your temperature twice daily for the next five days.
- If you were given antibiotics or pain medication, take them as directed. Some pain is normal.
- The veins above your testicle may become **more noticeable and tender** in the days following the procedure. Over time, this usually improves, though the veins may not disappear entirely.

Please discuss with the radiologist anything you should avoid or not participate in after this procedure



#### Wound Care

- You will have a standard bandage / dressing covering the insertion site of your procedure
- It is normal to feel soreness in the area of the insertion site for 2 – 3 days.
- Keep a dressing / bandage over the insertion site for the first day.
- After 24 hours you should change the dressing / bandage. You may replace it with a Band-Aid that is big enough to cover the insertion site from the catheter.
- It is important to keep the insertion site clean and dry.
- Your insertion site should stay soft and dry as it heals. If you notice minor bleeding:
  1. Lie flat immediately.
  2. Apply **firm pressure** with a clean cloth or tissue for **15 minutes**. If possible, have someone else help.
  3. After 15 minutes, the site should be dry and flat. Cover it with a bandage.
  4. Notify your physician right away. If bleeding does not stop then go to the Emergency Department of the nearest hospital.



#### Bathing

- You can shower or bathe normally after 24 hours as, as long as the insertion site is scabbed over or closed.
- Be gentle as you wash over this area of your body.

Talk to the interventional radiologist about bathing techniques if you have concerns.



#### Medication

- Fill the prescriptions that were given to you and follow the instructions on the labels carefully.
- If your doctor or healthcare provider advised you to stop any medications for this procedure then consult with them first about the safety of when you can start your medications again;
- Otherwise, resume your normal medication schedule.
- If you **normally** take acetylsalicylic acid (Aspirin™) or another blood thinner medication, ask your doctor or healthcare provider when to start taking it again. Make sure that you understand exactly what they want you to do;
- Otherwise, **do not** take (Aspirin™) or anti-inflammatory medicines (ex: ibuprofen) for **1 week** after the procedure.
- Over-the-counter pain relievers like **Tylenol** can help ease any discomfort.

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## WHEN TO SEEK HELP<sup>3</sup>



### Call 911:

If you believe you require emergency care – **call 911**. Reasons to call 911 include:

- You have passed out (lose consciousness), or become very dizzy, weak, or less alert
- You have severe trouble breathing
- You have a fast or uneven pulse
- You experience sudden chest pain and shortness of breath
- Significant bleeding from the puncture site (i.e. bright red blood that won't stop)
- Continuous profuse blood streaming from the wound
- A jet of blood pumping from the puncture wound
- Quickly increasing swelling of the area around the wound, which may be pulsating



### Call your doctor, healthcare provider, or Health Connect Ontario immediately if you experience:

- Increased pain, swelling, warmth, or redness at the procedure site or in the testicle
- Redness or warmth around the procedure site or pus or blood draining from the procedure site
- The area punctured at your neck is pale, painful, or cold during treatment
- A fever (more than 100°F / 38°C)
- Chills, with or without fever
- Bright red blood has soaked through the bandage / dressing over the procedure site.
- You have bleeding from your access site that does not stop after 15 - 20 minutes of gentle pressure.
- You have new or worse pain at the procedure site.
- You are vomiting, or have new or worse nausea and/or vomiting
- Pain or cramping in the abdomen not relieved by pain medication
- Redness or red streaks around the skin wound
- Bleeding, pain or drainage at the puncture site
- Numbness or tingling in the hand, forearm or upper arm on the same side as the neck puncture
- Swelling of the arm or neck on the same side as the neck puncture
- Increased bruising extending beyond the puncture site
- Colour change and/or coolness of the arm or neck on the same side as the neck puncture

**Health Connect Ontario may be reached 24-hours a day, including weekends, by:**

- Calling 8-1-1
- Calling 1-866-797-0007 (TTY – *teletypewriter service*)
- Visiting <https://healthconnectontario.health.gov.on.ca/> and selecting “Chat with us”

**BRING THIS INFORMATION PACKAGE WITH YOU SHOULD YOU URGENTLY NEED TO SEE YOUR DOCTOR OR GO TO THE EMERGENCY DEPARTMENT OF YOUR NEAREST HOSPITAL.**

*Use this material for your information only. It does not replace advice from your doctor or other health care professionals. Do not use this information for diagnosis or treatment. Consult with your health care provider about a specific medical condition.*

### References:

1. Catheter Embolization. Accessed October 9, 2024. RadiologyInfo.org. <https://www.radiologyinfo.org/en/info/cathembol>
2. Endovascular Embolization. Access October 9, 2024. Lexi-Comp Online. <https://online.lexi.com/>
3. Bland Embolization Patient Education. Accessed October 9, 2024. Northwestern Medicine. <https://www.nm.org/patients-and-visitors/patient-education/hematology-oncology/bland-embolization-patient-education>
4. Wadhwa V, Kashanian JA, Schiffman M, McClure TD. Varicocele Embolization: Patient Selection: Preprocedure Workup, and Technical Considerations. Semin Intervent Radiol. 2021;38(2):176-181. doi:10.1055/s-0041-1727105

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