PROCEDURE

Uterine artery embolization

Uterine artery embolization blocks selected uterine blood vessels to shrink fibroids or control bleeding.

PURPOSE
Shrink fibroids or control bleeding by reducing uterine blood flow

PROCEDURE TYPE
Therapeutic, minimally invasive interventional radiology

WHERE IT IS DONE
Hospital interventional radiology suite

ANAESTHESIA
Local anaesthetic with moderate sedation; general anaesthesia is uncommon

HOW LONG IT TAKES
Usually 60 to 90 minutes

PREPARATION
Fasting, blood tests, medication review, and transport home

RECOVERY
Same day or overnight; no driving for at least 24 hours

MAIN RISKS
Bleeding, infection, ovarian dysfunction, unintended tissue injury

RESULTS
Technical result immediate; symptom improvement over weeks to months

Overview

Uterine artery embolization is a minimally invasive procedure that reduces blood flow through selected arteries supplying the uterus. It is performed by an interventional radiologist, a doctor who uses imaging to guide treatments inside blood vessels.

The procedure is most often used to treat uterine fibroids. Fibroids are non-cancerous growths made from muscle and supporting tissue. Reducing their blood supply usually causes them to shrink, which may improve heavy periods, pelvic pressure, pain, or bladder symptoms.

Embolization may also be used to control serious uterine bleeding, including bleeding after childbirth or an operation. The timing, preparation, and alternatives are different when it is performed as an emergency.

Uterine artery embolization does not remove the uterus. However, it may affect the ovaries or future pregnancy, and it does not provide a tissue sample for laboratory testing.

Why the procedure is performed

You may be offered this procedure if fibroids are causing significant symptoms and medicines have not helped enough, are not suitable, or are not wanted. It may be considered when you want to keep your uterus but would prefer to avoid an operation such as myomectomy or hysterectomy.

For fibroids, the main aims are to:

Embolization can also stop bleeding by closing selected blood vessels. This may be considered for severe bleeding after childbirth, bleeding related to a pregnancy complication, or bleeding after pelvic surgery.

The procedure does not guarantee complete symptom relief. Some people later need another embolization, surgery, or a different treatment.

- Reduce heavy menstrual bleeding
- Shrink fibroids and relieve pressure or pain
- Avoid a larger surgical incision
- Shorten recovery compared with major surgery

Who should and should not have it

Uterine artery embolization may be suitable if imaging confirms fibroids that match your symptoms and you understand the benefits and limitations of treatment. Your gynaecologist and interventional radiologist may review your case together.

Planned embolization for fibroids is generally avoided during pregnancy. It is also usually delayed if you have an active pelvic infection.

It may not be the right choice if there is concern that a uterine growth could be cancer. Embolization does not remove tissue for diagnosis and could delay the treatment needed. Unexplained bleeding, especially after menopause, should be investigated before a planned procedure.

Other reasons to avoid, delay, or modify the procedure include:

If you hope to become pregnant, discuss this before consenting. Pregnancy is possible after

embolization, but its effect on fertility and pregnancy outcomes is less certain than with myomectomy. Your age, fibroid location, previous treatment, and other fertility factors matter.

- A blood-clotting problem that cannot be corrected
- Serious kidney impairment, because contrast dye is usually required
- A previous severe reaction to contrast dye
- Blood vessels that cannot be reached safely
- A fibroid that may be better treated through the cervix or vagina

How to prepare

The treating facility's own instructions take priority because preparation differs according to your health, medicines, and reason for treatment.

You may have an ultrasound or MRI scan to map the fibroids and check for another explanation for your symptoms. Blood tests may check your blood count, clotting, and kidney function. A pregnancy test may also be required.

Tell the team about all prescription medicines, non-prescription medicines, and supplements you take. This is particularly important for blood thinners like warfarin or apixaban , aspirin, diabetes medicines, and medicines that affect the kidneys. Do not stop a prescribed medicine unless the treating team tells you to.

You will usually need to stop eating and drinking for a set period before sedation. Follow the exact fasting instructions you receive.

Arrange for a responsible adult to take you home. Depending on local practice and how you feel, you may leave later that day or stay overnight.

What happens during the procedure

You will lie on an X-ray table. Staff will monitor your blood pressure, pulse, breathing, and oxygen level. A small intravenous line allows the team to give fluids, sedation, pain relief, and other medicines.

The doctor numbs the skin near the groin or wrist with local anaesthetic. A small tube called a catheter is then passed into an artery. You may feel pressure, but the catheter moving inside the blood vessel should not feel sharp.

X-ray guidance and contrast dye show the arteries supplying the uterus. When the catheter is

in position, the doctor injects tiny particles that block selected vessels feeding the fibroids or bleeding area. Both uterine arteries are commonly treated for fibroids.

The doctor checks the blood flow with further images, removes the catheter, and applies pressure or a closure device to the entry site. No abdominal incision is needed.

Recovery and what to expect afterward

Cramping or pelvic pain is common, particularly during the first several hours. It can feel similar to strong period pain. You may receive pain medicine before, during, and after the procedure. Pain should gradually become easier to manage.

Nausea, tiredness, a mild fever, or flu-like feelings can occur for several days. This combination is sometimes called post-embolization syndrome. Your team should explain which symptoms are expected and when they need review.

You can usually drink and then eat once nausea is controlled. Start with light food if your stomach feels unsettled.

Rest at first, then increase walking and normal activity gradually. Avoid heavy lifting, strenuous exercise, baths, swimming, tampons, and sexual activity for the period specified by your facility. Instructions may differ according to the catheter entry site and your recovery.

Do not drive for at least 24 hours after sedation, and do not drive while taking opioid pain medicine or if pain limits your movement. Follow any longer restriction given by your treatment centre.

Many people return to desk-based work within one to two weeks. You may need longer if your work is physically demanding, your symptoms remain troublesome, or the procedure was performed for emergency bleeding.

Risks and possible complications

Bruising, tenderness, or a small collection of blood can develop where the catheter entered the artery. More significant bleeding or injury to that artery is less common.

Pelvic infection can occur after embolization. Antibiotics like amoxicillin or doxycycline may be needed, and surgery is occasionally required if infection does not respond to treatment.

Other possible complications include:

Loss of blood supply can damage uterine tissue. In unusual cases, urgent surgery, including hysterectomy, may be needed to control infection, bleeding, or tissue injury.

Your personal risk is influenced by your age, general health, fibroid location, reason for treatment, and previous pelvic procedures.

- Fibroid tissue passing through the vagina
- Temporary or permanent changes in menstrual periods
- Reduced ovarian function or earlier menopause
- An allergic reaction or kidney injury from contrast dye
- Particles affecting tissue outside the intended area
- A blood clot in a leg or lung
- Persistent symptoms requiring another procedure

Results and follow up

The interventional radiologist can usually tell immediately whether blood flow to the intended area was reduced. For fibroids, this does not mean symptoms improve straight away.

Bleeding may improve over the next few menstrual cycles. Pressure and bulk-related symptoms often take longer because fibroids shrink gradually over several months.

Your team may arrange a routine appointment within several weeks. An ultrasound or MRI may be scheduled later to assess shrinkage, although imaging is not required after every uncomplicated procedure.

Keep track of bleeding, pain, pressure symptoms, and menstrual changes. Contact the team if symptoms do not improve, return after improving, or interfere with daily life. Further imaging or another treatment may be considered.

Alternatives

The realistic alternatives depend on whether embolization is planned for fibroids or needed to control urgent bleeding.

For fibroids, options include:

For severe uterine bleeding, alternatives may include medicines, a balloon placed inside the uterus, surgery to repair the bleeding source, or hysterectomy. In an emergency, the safest option is based on the cause and severity of bleeding.

- Monitoring without treatment: avoids procedural risks, but fibroids and symptoms may remain or worsen
- Medicines: pain relievers, tranexamic acid, hormonal treatment, or medicines that temporarily suppress ovarian hormones may reduce symptoms, but they do not permanently remove fibroids
- Myomectomy: removes fibroids while keeping the uterus and may be preferred when future pregnancy is important, but it is an operation and new fibroids can develop
- Hysterectomy: removes the uterus and definitively prevents fibroid recurrence, but it is major surgery and pregnancy is no longer possible
- Radiofrequency ablation: destroys fibroid tissue using heat and may offer a shorter recovery, but it is not suitable for every fibroid pattern
- MRI-guided focused ultrasound: treats selected fibroids without an incision, but eligibility is limited and further treatment may be needed

When to call your healthcare team

Contact your healthcare team promptly for a fever that persists, worsening pelvic pain, foul-smelling vaginal discharge, persistent vomiting, difficulty passing urine, increasing redness at the catheter site, or bleeding that is heavier than your team told you to expect.

Seek emergency help for uncontrolled heavy bleeding, fainting, severe weakness, chest pain, difficulty breathing, sudden one-sided weakness, or bleeding from the catheter site that does not stop with firm pressure.

Routine tiredness, mild cramping, light bleeding, or a low-grade fever may occur during recovery. Mention symptoms that are not improving at your scheduled follow-up, even if they are not urgent.

Common questions

Will I be asleep?

Usually not completely. Local anaesthetic numbs the catheter site, and moderate sedation makes you relaxed and drowsy. General anaesthesia is uncommon for a planned procedure.

Can I drive home?

No. Sedation, pain, and pain medicine can make driving unsafe. Arrange for someone to take you home and follow the facility's driving restriction.

How painful is it?

The catheter placement is usually not very painful after the skin is numbed. Strong cramping can develop when blood flow is reduced. The team will provide pain relief and monitor your response.

When will I know if it worked?

The doctor can assess the blood-flow result during the procedure. Improvement in bleeding may take several cycles, while pressure symptoms and fibroid shrinkage may take months.

Will I still have periods?

Most people who were menstruating continue to have periods, though timing and flow may change. Periods can stop temporarily or permanently, particularly as natural menopause approaches.

Can I become pregnant afterward?

Pregnancy is possible, but fertility and pregnancy outcomes after embolization are uncertain. Discuss pregnancy plans with both the gynaecologist and interventional radiologist before choosing treatment.

Sources

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