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Endovascular embolization

Endovascular embolization is a procedure to treat abnormal blood vessels in the brain and other parts of the body. It is an alternative to open surgery.

This procedure cuts off the blood supply to a certain part of the body.

Description

You may have general anesthesia (asleep and pain-free) and a breathing tube. Or, you may be given medicine to relax you, but you will not be asleep.

A small surgical cut will be made in the groin area or wrist. The doctor will use a needle to create a hole in the femoral artery, a large blood vessel in the groin. It may also be done through the radial artery in the wrist

- A thin, flexible tube called a catheter is passed through the open skin and into the artery.
- Dye is injected through this tube so that the blood vessel can be seen on x-ray images.
- The doctor gently moves the catheter through the blood vessel up to the area being treated.
- Once the catheter is in place, the doctor places small plastic particles, glue, metal coils, foam, or a balloon through it to seal off the faulty blood vessel. (If coils are used, it is called coil embolization.)

This procedure can take several hours.

Why the Procedure is Performed

The procedure is most often used to treat aneurysms in the brain. It can also be used for other medical conditions when open surgery might be risky. The goal of the treatment is to prevent bleeding in the problem area and to reduce the risk that the blood vessel feeding it will break open (rupture).

Your doctor will help you decide whether it is safer to have surgery to block off the aneurysm before it can rupture.

This procedure may be used to treat:

- Arteriovenous malformation (AVM)
- Brain aneurysm
- Carotid artery cavernous fistula (a problem with the large artery in the neck)
- Certain tumors

Risks

Risks from the procedure may include:

- Bleeding at the site of the needle puncture
- Bleeding in the brain
- Damage to the artery where the needle is inserted
- Dislodged coil or balloon
- Failure to completely treat the abnormal blood vessel
- Infection
- Stroke
- Symptoms that keep returning
- Death

Before the Procedure

This procedure is often done on an emergency basis. If it is not an emergency:

Tell your doctor or nurse if:

- You are or could be pregnant.
- You are taking any medicines, including medicines, drugs, supplements, or herbs you bought without a prescription.
- You have been drinking a lot of alcohol, more than 1 or 2 drinks a day.

Planning for your procedure:

- If you have diabetes, heart disease, or other medical conditions, your doctor may ask you to see your health care provider who treats you for these conditions.
- If you smoke, it's important to cut back or quit. Smoking can slow healing and increase the risk of blood clots. Ask your provider for help quitting smoking.
- If needed, prepare your home to make it easier to recover after the procedure.
- Ask your doctor if you need to arrange to have someone drive you home after your surgery.

During the week before your surgery:

- You may be asked to temporarily stop taking medicines that keep your blood from clotting. These medicines are called blood thinners. This includes over-the-counter medicines and supplements such as aspirin, ibuprofen (Advil, Motrin), naproxen (Aleve, Naprosyn), and vitamin E. Many prescription medicines are also blood thinners.
- Ask your doctor which medicines you should still take on the day of your procedure.
- Let your doctor know about any illness you may have before your procedure. This includes COVID-19, a cold, flu, fever, herpes breakout, or other illness. If you do get sick, your surgery may need to be postponed.

On the day of surgery:

- Follow instructions about when to stop eating and drinking.
- Take the medicines your doctor told you to take with a small sip of water.
- Arrive at the hospital on time.

After the Procedure

If there was no bleeding before the procedure, you may need to stay in the hospital for 1 to 2 days.

If bleeding occurred, your hospital stay will be longer.

Outlook (Prognosis)

How fast you recover depends on your overall health, the severity of your medical condition, and other factors.

In most cases, endovascular embolization is a successful procedure with good outcomes.

The outlook also depends on any brain damage that occurred from bleeding before, during, or after the surgery.

Alternative Names

Treatment - endovascular embolism; Coil embolization; Cerebral aneurysm - endovascular; Coiling - endovascular; Saccular aneurysm - endovascular; Berry aneurysm - endovascular repair; Fusiform aneurysm repair - endovascular; Aneurysm repair - endovascular

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