

Brain arterial-venous malformation embolization i.e. av-malformation embolization

You are coming for a cerebral vascular procedure. The procedure requires both preparation and aftercare and therefore a place is reserved for you in the ward as well.

What is embolization of AV malformation and what is its purpose?

Arteriovenous (AV) malformation is a congenital vascular malformation between arteries and veins, which may cause cerebral haemorrhage, headache, visual disturbances and epileptic seizures. AV malformation can be treated with surgery, radiotherapy (gamma knife) and embolization. AV malformation embolization is a procedure in which the vessels of the vascular malformation are blocked (embolized) with tissue glue or platinum coils to prevent blood flow to the malformation.

How to prepare for the procedure?

- You will arrive at the hospital the day before the procedure. Blood tests will be done.
- Anti-blood clotting medication (Marevan) is stopped 3–4 days before the test, with the consent of the treating physician, to prevent bleeding during the procedure.
- Metformin medication for diabetes does not need to be stopped before the procedure. However, the medicine may be stopped after the test if kidney function so requires. You may take other medicines as before with a small drop of water.
- **You must fast from the morning of the day of the procedure.**
- The use of tobacco and other nicotine products is prohibited 24 hours before the procedure, because it causes the blood vessels to constrict and may lead to failure of the procedure!
- Jewellery should be removed from around the affected area during the procedure.
- The examination is usually done through the femoral artery, therefore the skin around the groin fold area should not have redness or a rash, due to the risk of inflammation.
- The examination is performed with the help of X-rays, therefore it must be confirmed that you are not pregnant before the examination. Known contrast allergies and kidney impairment should also be reported in advance.

How is the procedure done?

The procedure is performed by a Radiologist and two Radiographers. During imaging, you are lying still on your back on the procedure table. The procedure is performed under local anaesthesia or general anaesthesia.

A thin plastic tube, or catheter, is inserted through the femoral artery into the area to be imaged, through which a contrast agent is injected and X-rays are taken at the same time. After the imaging, a thin plastic tube is inserted into the vessel to be treated / examined. An embolic agent is then injected into the area to be treated.

The procedure is not risk free. The risks are similar to those in open surgery, i.e. cerebral haemorrhage or thrombosis, and as a result, paralysis or other neurological deficiency symptoms are possible.

There is no pain sensitivity in the blood vessels, so moving the catheter in the blood vessel does not hurt. Injecting the contrast agent produces a sensation of heat and any light flashes that you see are due to the contrast agent. During the procedure, headaches, nausea, or numbness may occur, which can be relieved with medication.

How long does the procedure take?

The procedure takes 2 to 4 hours. The size of the vascular malformation affects the number of procedures. Usually, the embolization has to be repeated and possibly later operated on.

What about after the procedure?

- After the examination, the catheter is removed and the injection site is closed. Bed rest after the procedure is 2–7 hours. If you are unable to remain lying on your back, the nurses will help you into another position. Raising the head and lifting the legs are prohibited. After the examination, you can eat and drink normally, unless there are other restrictions.
- After embolization, the length of hospital stay is about 1 to 2 days and return to work is possible after about three days, depending on your condition and the nature of your work.
- At home, be mindful of the injection site for about 1 week. Physical exertion, saunas and hot baths should be avoided. When you go home, you will receive more detailed aftercare instructions from the ward. Instructions for arterial puncture post-treatment can be found <https://hoito-ohjeet.fi/OhjepankkiVSSHPEnglanti/Instructions%20for%20arterial%20puncture%20post-treatment.pdf>
- If you experience any problems after the procedure, contact the neurosurgical department that treated you.

Where do you get the results from the procedure?

The referring outpatient clinic or ward is responsible for communicating the results of the examination to you.

