

## Neurosurgery

# Arterial Venous Malformation (AVM)

## What is an AVM?

An AVM is a tangle of blood vessels in the brain or on the brain surface which causes blood to bypass the network of capillaries and flows directly from arteries to veins.

## What are the symptoms?

Symptoms may vary depending on the size of the AVM and where the AVM is located within the brain. Commonly AVMs cause no symptoms at all, however symptoms could include seizures, headaches, speech disturbances and visual disturbances.

## What causes AVMs?

We don't know why AVMs occur, but generally people are usually born with them. They are not thought to be hereditary. They are typically discovered between the ages of 20-40.

## What tests will I have?

**CT scan:** A CT scan is an X-ray examination that gives much more information than a normal X-ray. It produces detailed cross sectional images of your organs, blood vessels and bones.

**MRI scan:** An MRI scan gives much more information than a CT scan. It uses strong magnetic fields and radio waves to produce very detailed pictures of the brain and other organs.

**Angiogram:** An Angiogram is when a catheter is inserted into your groin and fed through the artery to the arteries in the brain. A dye is injected through the catheter into the blood vessels to show us where the AVM is situated. **(Additional information leaflet)**



### What treatment will I receive?

AVMs can be treated in many different ways.

**Conservative Management** – regular scans should be carried out to monitor the size of the AVM. Patients should also be seen in joint Neurovascular Clinics with a Neurosurgeon & Neuro-Radiologist to review the scans and keep patients up to date with their care. Patients with AVMs should avoid activities which will elevate blood pressure and must avoid blood thinners.

**Coiling** – is a way of treating AVMs without the need for a Craniotomy. The Neuro-Radiologist will approach the AVM from inside the blood vessel. Small metal coils are inserted into the AVM through the arteries that run from the groin to the brain. The coils aim to block off the blood supply to the AVM and get rid of it completely. You may need several separate sessions of this treatment to block off the blood supply completely. (**Additional information leaflet**)

**Craniotomy** – opening of the skull and disconnecting the AVM from the arteries that supply it with blood and the veins that drain it.

**Radiosurgery** – this is offered to patients where the AVM is difficult to reach. Firstly an angiogram is carried out to locate the AVM then a beam of high energy sources are focused on the AVM. This radiation causes the AVM to shrivel up and clot off.

### Common complications alongside an AVM

**Hemorrhage** – An AVM can put extreme pressure on the walls of the affected arteries and veins, causing them to become thin or weak. This may result in the AVM rupturing and bleeding into the brain. (**Additional information leaflet**)

**Stroke** – An AVM causes blood to bypass the network of capillaries and flows directly from arteries to veins. Blood rushes quickly through the altered path because it isn't slowed down by channels of smaller blood vessels. Surrounding brain tissues can't easily absorb oxygen from the fast-flowing blood. Without enough oxygen, brain tissues weaken or may die off completely.

**Hydrocephalus** – Hydrocephalus is a build-up of Cerebrospinal Fluid (CSF) in the brain. The excess fluid leads to increased pressure on the brain which can cause damage to the brain tissue. Headaches, vomiting, confusion, visual problems and altered consciousness are the most common symptoms of hydrocephalus and it is important you seek medical advice urgently if any of these symptoms occur before or following treatment. Hydrocephalus can be treated by the insertion of a temporary drain to drain the excess fluid or a permanent shunt insertion. (**Additional information leaflet**)

## Patient Information

### Further Information

#### British Brain and Spine Foundation

3.36 Canterbury Court, Kennington Park, 1-3 Brixton Road, Crammer Road,  
London, SW9 6DE

[www.brainandspine.org.uk](http://www.brainandspine.org.uk)

Telephone: 0808 808 1000 (Information and support on neurological disorders for patients, carers and health professionals)

#### Headway National Contact

Freephone: 0808 800 2244 (Monday to Friday: 9.00am - 5.00pm)

[helpline@headway.org.uk](mailto:helpline@headway.org.uk)

Local Support groups for Headway for further information email:

[headwaycw@aol.com](mailto:headwaycw@aol.com)

**NHS Choices:** [www.nhs.co.uk](http://www.nhs.co.uk)

#### Stroke Association

Stroke House, 240 City Road, London, EC1V 2PR.

#### Stroke Helpline

If you would like information or advice about stroke contact our Stroke Helpline on **0303 303 3100** open Monday to Friday, 9.00am to 5.00pm.

Email: [info@stroke.org.uk](mailto:info@stroke.org.uk)

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#### Document History

Author	Katie Tucker
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Published	July 2016
Reviewed	July 2019
Review	July 2021
Version	2.2
Reference No	HIC/LFT/2077/16