

Imaging department

Cerebral Aneurysm

Information for patients, relatives and carers

Introduction

This leaflet is designed to provide information on cerebral aneurysms, the possible treatment options, and answer any questions you may have.

What is cerebral aneurysm?

An aneurysm is a bulge in a blood vessel caused by a weakness in the blood vessel wall, usually where it branches, and can occur in different arteries in the body. As blood passes through the weakened blood vessel, the blood pressure causes a small area to bulge outwards like a balloon.

The bulging aneurysm can put pressure on the nerves or brain tissue.

Brain aneurysms can occur in people of all ages but occur most in ages 35-60. The exact mechanisms by which cerebral aneurysms occur are not fully understood. However, there are a few factors that contribute to the formation of cerebral aneurysms, mainly:

- Hypertension
- Smoking
- Drug abuse, especially cocaine or amphetamines
- Injury or trauma to the blood vessel
- Genetic predisposition

You will probably not experience any symptoms if you have an unruptured aneurysm, particularly if they are small.

Most aneurysms are smaller than a garden pea; less than 1 cm in size.

Occasionally, a larger aneurysm may press on brain tissues and nerves. Symptoms of an unruptured aneurysm may include:

- Pain above and behind one eye
- Changes in vision
- Headache
- Dizziness
- Numbness on one side of the face

What is a ruptured cerebral aneurysm?

If the aneurysm expands and the blood vessel becomes too thin, the aneurysm can rupture and bleed into the space around the brain.

The bleeding into the space around the brain is called a subarachnoid haemorrhage (SAH). This type of haemorrhage can lead to stroke, coma, and/or death.

Symptoms of a subarachnoid haemorrhage include:

- Sudden severe headache, often described as the worst headache you have ever experienced
- Stiff neck
- Sensitivity to light
- Vomiting
- Altered consciousness and seizures

Please note, most cerebral aneurysms do not rupture.

How is a cerebral aneurysm diagnosed?

Most cerebral aneurysms go unnoticed unless they rupture; they are frequently detected incidentally during diagnostic tests for another condition.

Imaging tests can help diagnose a cerebral aneurysm, including computed tomography (CT) angiography scan; magnetic resonance (MR) angiography scan; or a cerebral angiography.

How is a cerebral aneurysm treated?

The neurosurgeon looking after your care will discuss your imaging scan results with the interventional neuroradiologist, and together they will decide how best to treat your aneurysm.

Once the neurosurgeon and the interventional neuroradiologist have agreed to a suitable treatment, they will meet you in the outpatient clinic, and will discuss with you the treatment plan in detail.

There are two treatment techniques

- surgical clipping
- and endovascular treatment.

Both are safe and established techniques. In some cases, one technique may be better than the other, and this is decided by the multidisciplinary team.

Surgical clipping is performed by the neurosurgeon, assisted by the anaesthetic team, and operating department nurses/staff. It involves removing a portion of the skull (craniotomy), locating the blood vessels and the aneurysm, after which a small metal clip is placed on the neck of the aneurysm to remove it. The skull bone is then replaced. This procedure is done under general anaesthetic

Endovascular treatment is less invasive than a surgical clipping. The interventional neuroradiologist will perform the procedure, assisted by the anaesthetic team, interventional radiology nurses, and radiographers. This procedure is also done under general anaesthetic. This is undertaken in a state-of-the-art angiography suite in the imaging department, as this procedure is done using x-ray guidance and complex mapping of the blood vessels.

What does an endovascular treatment involve?

An endovascular treatment (also known as embolisation) is performed via accessing the arteries, either in your wrist or your groin, using a small tube called a sheath.

The interventional neuroradiologist will guide a thin, long tube (catheter) through the blood vessels via the sheath. The long tube will be navigated through the blood vessels, while the x-ray machines collect images.

When the catheter reaches the aneurysm, tiny devices are fed through the catheter, and placed into the aneurysm until it is filled.

The device used to treat your aneurysm will depend on the type of aneurysm you have; these devices are more commonly platinum coils, but other devices are also used, such as a flow diverter stent.

These devices will change the blood flow to the aneurysm, so that no blood enters the aneurysm.

The type of device to be used for your treatment will be explained to you during your consultation with the interventional neuroradiologist.

What are the risks and the benefits of an endovascular procedure?

Endovascular treatment is a minimally invasive procedure; therefore, recovery time can be quicker, reducing your stay in hospital.

However, with any brain procedure, there are risks. These risks will be discussed with you by the interventional neuroradiologist before you consent to have the procedure.

Some of the risks of the procedure include:

- Allergic reaction to the contrast medium, which contains iodine.
- Infection at the puncture site.
- Bleeding/bruising at the puncture site
- Vessel injury

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- More serious complications resulting from the procedure include further bleed from the aneurysm, stroke and risk to your life.

What happens if I chose not to proceed with treatment?

If you choose not to have any treatment, we may continue to monitor you with yearly CT/MRI scans, and clinic follow-up appointments with the neurosurgery department.

Contact details

Please do not hesitate to contact our imaging department if you have any queries or concerns:

Charing Cross Hospital: Fulham Palace Road, London W6 8RF

Telephone: **020 3313 0770**

Email: imperial.neurointervention@nhs.net

How do I make a comment about my visit?

We aim to provide the best possible service and staff will be happy to answer any of the questions you may have. If you have any **suggestions** or **comments** about your visit, please either speak to a member of staff or contact the patient advice and liaison service (**PALS**) on **020 3312 7777** (10.00 – 16.00, Monday to Friday). You can also email PALS at imperial.pals@nhs.net The PALS team will listen to your concerns, suggestions or queries and is often able to help solve problems on your behalf.

Alternatively, you may wish to complain by contacting our complaints department:

Complaints department, fourth floor, Salton House, St Mary's Hospital, Praed Street
London W2 1NY

Email: ICHC-tr.Complaints@nhs.net

Telephone: **020 3312 1337 / 1349**

Alternative formats

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