

Patient Advice and Liaison Service (PALS)

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Reference: BH/PIN/711

Publication date: October 2017

All our patient information leaflets are reviewed every three years.

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Patient information

Aneurysm coiling after subarachnoid haemorrhage



What is subarachnoid haemorrhage?

Subarachnoid haemorrhage is a sudden leak of blood into the fluid spaces around the brain. The commonest cause of a subarachnoid haemorrhage is an aneurysm. An aneurysm is a blister or swelling on a blood vessel. An aneurysm has a thin wall and is therefore prone to bleeding. Most aneurysms are small and cause no symptoms until they bleed. The reasons aneurysms develop are not fully understood but we know they are associated with smoking and high blood pressure. They are more common in women.

What are the symptoms of subarachnoid haemorrhage?

Typically it causes a sudden, very severe headache often with nausea and vomiting. It can also cause collapse or a fit. If extensive bleeding occurs, drowsiness or coma can result. Sometimes, the bleeding will cause symptoms of a stroke. The bleeding often stops spontaneously. The severity of symptoms depends on how much blood has leaked at the time of bleeding.

How do we diagnose subarachnoid haemorrhage?

The simplest way is to do a CT scan (a specialized computer generated X-ray) of the brain. This will usually show the blood around the brain. A normal CT scan does not rule out subarachnoid haemorrhage. If there is doubt, a sample of fluid from around the spinal cord is taken to look for blood. This test is called a lumbar puncture or LP.

What happens next?

It is important to look for the source of bleeding. A specialised CT scan called a CT angiogram will usually be performed to look at the blood vessels of the brain. This is a very accurate and simple way of diagnosing the source of bleeding. A neuroradiologist or X-ray doctor will analyse the CT angiogram. Sometimes another test, called a cerebral angiogram, is recommended.

Does the aneurysm need treatment?

Yes. A brain aneurysm that has bled causing a subarachnoid

will discuss this with you.

In the event of coil treatment being impossible, direct surgical repair or 'clipping' of the aneurysm is another option. Your neurosurgeon would discuss this further with you. More commonly, if a second coil treatment is unsuccessful, we simply recommend further observation of the aneurysm using an MRI scan of the blood vessels (MRA).

treatment of other aneurysms at the same time, if this is possible.

If the other aneurysms have not bled and are small, we often recommend checking these aneurysms at the time of your follow up angiogram. The risk of haemorrhage from small, unruptured aneurysms is low and we do not always recommend treatment.

Why do the coils need to be followed so closely?

The coils in the aneurysm are very effective at preventing further bleeding from the treated aneurysm. If coiling is successful at first, another bleed is very rare. However, in some cases, the coils can settle into the aneurysm over time, causing partial reopening of the aneurysm. This is more common if the aneurysm is large when first treated or if the opening into the aneurysm (the aneurysm 'neck') is large. If there is some reopening of the aneurysm, this is often minimal and in these cases no further action is required. If the reopening is more substantial, we sometimes recommend a second coil treatment.

What if the aneurysm needs a second treatment?

If there is substantial reopening or recurrence of the aneurysm, there is a very small annual risk of another subarachnoid haemorrhage occurring. Because of this risk, it is sometimes sensible to consider a second coil treatment.

The decision to go ahead with further treatment is made on a case-by-case basis, taking into account many other factors such as your age, your general health, and your wishes.

The risks of a second coil treatment are slightly less than the first treatment because the aneurysm has not freshly ruptured. After a second aneurysm treatment, we perform further checks on the aneurysm at six months and two years.

What if the coil treatment is unsuccessful?

If a coil treatment is unsuccessful, other methods using balloon or stents via the blood vessels may be possible. The neuroradiologist

haemorrhage is likely to bleed again. The risk of further bleeding from the aneurysm is approximately 50% over the six months after the first episode of bleeding. Any episode of bleeding from an aneurysm is potentially life threatening.

How is an aneurysm treated?

There are two methods of treating brain aneurysms:

- Endovascular treatment (coil embolisation or 'coiling')
- Neurosurgery (clipping).

If an aneurysm is suitable for coiling, we generally recommend this approach to treatment instead of open neurosurgery. Coiling avoids having to open the skull to perform direct surgery on the aneurysm. For this reason, the recovery time after coiling of an aneurysm is much shorter. The risk of causing infection or epilepsy is also lower.

What is coiling of an aneurysm?

A specially trained doctor called a neuroradiologist performs this procedure, because the procedure is done using X-ray guidance. The aneurysm is treated through the blood vessels. A long plastic tube or catheter is passed from a puncture in the groin to one of the arteries that supply the head. We navigate through the blood vessels by injecting X-ray dye, which can be viewed in the blood vessels on a specialised X-ray machine. The tip of a second fine long catheter can then be navigated inside the aneurysm and soft metal coils are then placed. This forms a tight mesh inside the aneurysm, which seals it and prevents further bleeding. The catheters are then removed and the groin puncture is usually closed using a small stitch.

Will I be put to sleep for the coiling?

Yes. The procedure requires a general anaesthetic, which may carry a small risk depending on your general health. An anaesthetist will discuss the anaesthetic and the associated risks with you before the coiling procedure.

Does coiling the aneurysm have any risks?

The coiling procedure carries a small risk but this is far less than the risk of leaving the aneurysm alone.

- There is a risk of causing stroke. A stroke can cause weakness or complete paralysis of one side of the body. It can also cause problems with speech or sight.
- There is a small risk of causing further bleeding from the aneurysm. On average, the chances of a stroke or bleeding happening are 5 in 100 or 5%. There is therefore a small risk to life from the procedure (approximately 1%)
- There is a small risk of experiencing hair loss or thinning due to the x-rays which are used during the procedure. This usually starts 3-4 weeks afterwards. The hair will grow back within a few months.
- There is a small risk of severe bruising or infection at the site of the groin puncture. Rarely, a swelling forms on the blood vessel at the groin (pseudoaneurysm) of the vessel could become blocked. Either problem would require a small operation to repair.

• These possible complications may seem frightening, so it is important to remember that the risks are very small compared to the risk of leaving the aneurysm untreated. Your opinion is important and if you do not want to have the procedure, you can decide against it. We will ask you to sign a consent form before the coiling procedure is carried out.

How long does the coiling take?

This depends on the size and location of the aneurysm and the state of the blood vessels in general. On average it takes 2-3 hours but it can sometimes take considerably longer.

What can I do to reduce the risk of this happening again?

If you are a smoker, it is important that you stop. Stopping smoking

reduces the risk of another aneurysm forming in the future. If you have other untreated aneurysms, stopping smoking will halve the risk of them bleeding. If you suffer from high blood pressure, you should have regular blood pressure checks to make sure it is well controlled.

What are the chances of recovery from subarachnoid haemorrhage?

The outcome after subarachnoid haemorrhage is variable and depends on many things, such as the extent of the first bleeding and whether complications set in. The majority of patients make a good recovery but this can take time.

What about driving?

You should stop driving until you are fully recovered from your haemorrhage. You should inform the licensing authority (DVLA) of your condition as soon as possible. They will give you advice regarding any driving restrictions and, with your consent, will contact your doctors for more information.

What about returning to work?

The length of time you need to get back to normal will vary. Speak to the medical staff for further advice before you go home.

Do the coils in the aneurysm need any follow up?

Yes. We generally recommend performing an MRI scan at six months and also at 2 years after the coiling procedure to look at the blood vessels.

Depending on the MRI scan findings, a cerebral angiogram may be advised. This is an X-ray of the brain's blood vessels. This test is straightforward but requires an admission to hospital.

What if there is more than one aneurysm?

1 in 4 patients with a subarachnoid haemorrhage have more than one aneurysm. We usually plan to treat the aneurysm that has bled. If there is doubt about which aneurysm has bled, we will recommend