National Hospital for Neurology and Neurosurgery

Non-aneurysmal Subarachnoid haemorrhage (SAH)
Neurovascular Team
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Contents

Common Questions 4
Recovery 11
Everyday Activities 17
Friends and Family 21
Where can I get more information? 22
How to contact us 23
Where to find us 24
This booklet has been written by the Neurovascular Multidisciplinary Team at The National Hospital for Neurology and Neurosurgery. The aim of the booklet is to provide information on the acute stages of non-aneurysmal subarachnoid haemorrhage (SAH), describing the condition, what happens in hospital, tests and investigations. It also provides information on recovery from non-aneurysmal SAH, common symptoms and feelings, and returning to everyday life.
**Common Questions**

**What is an SAH?**

A subarachnoid haemorrhage (haemorrhage = bleeding) is a sudden leak of blood over the surface of the brain. The brain is covered by layers of membranes, one of which is called the arachnoid layer. A subarachnoid haemorrhage (SAH) occurs beneath this layer (see picture below).

Most people have a sudden, severe headache, followed by vomiting (being sick). The headache usually persists and people tend to describe it as the worst headache they have ever had (a “thunderclap” headache). It is common to have a stiff neck. People might also slur their speech, experience a disturbance in their vision, have sensitivity to light, or have
physical problems like a weakness in an arm or leg.

In more severe cases, people can collapse and lose consciousness. Some people might also have a seizure (a “fit”).

What happens in hospital?

Most people are admitted to their local hospital where the haemorrhage is confirmed by a **CT scan** of the brain. You might also have a sample of fluid taken from your spine (**lumbar puncture**).

If the tests appear positive, you will be transferred to The National Hospital for Neurology and Neurosurgery for further investigations which could include a **CTA scan**, an **angiogram**, an **MRI** and/or **MRA scan**.

You may be required to undergo bed rest and will be closely observed in the ward environment until we have confirmed the cause of your SAH. You will be given regular pain killers and medication to prevent any sickness. Laxatives will also be offered as pain killers can cause constipation.

You are usually required to have about 3 litres of fluid for at least a week, either by drinking or by a ‘drip’ into the vein.
because maintaining plenty of fluid in the body helps to keep a good flow of blood to the brain.

You may be required to take a course of tablets called nimodipine. These have to be taken every 4 hours and help prevent complications due to blood vessel “spasm” or narrowing after the haemorrhage.

**Tests and Investigations**

**CT scan:** This is a special type of X-ray which takes pictures of the brain from different angles. During the test you will be asked to lie on a scanner table while the scanner rotates around your head. It is a painless and quick examination.

The scan can help to make the diagnosis of SAH and show the location of the haemorrhage, and problems it might be causing. (Sometimes a dye is injected to try and identify if there is any cause for the bleeding – **CTA scan**).

**Lumbar puncture:** The brain and spinal cord, which extends from the brain down through the centre of your spine, are surrounded by a clear liquid called cerebrospinal fluid (CSF). If there is bleeding into the subarachnoid space following a subarachnoid haemorrhage (the space that
surrounds the brain and the spinal cord), there will be blood in the cerebrospinal fluid.

A lumbar puncture involves taking a sample of this fluid. A needle is passed between two vertebrae (spinal bones) at the lower end of the spine (the lumbar area) into the space containing the CSF. A small amount is drawn off in a syringe and sent to a laboratory for examination. This test may also be used to confirm the diagnosis of an SAH.

**Angiogram:** An angiogram is an x-ray test used to produce pictures of your blood vessels. A cerebral angiogram shows the blood vessels in your head and neck.

After you have had a local anaesthetic to numb the groin area, a very small, flexible tube (catheter) is inserted into the blood vessel in your groin (the femoral artery). This is passed through other blood vessels in your body until it reaches your neck. You will not feel it move inside you.

The tube will be positioned into different blood vessels in your neck. While this happens, you will receive injections of a special dye (called contrast agent) so that your blood vessels show up under x-ray. The injections may give you a general warm feeling, but this goes away quickly.

Before taking the first picture, the equipment around you will
be moved into position. More dye will be infected for further pictures. It is very important that you remain still throughout the procedure to ensure the pictures taken are as clear as possible.

**MRI and MRA scan:** MRI stands for magnetic resonance imaging and MRA stands for magnetic resonance angiography. They use magnetic fields and radio waves to make a scan of the body, without using x-rays. The scans are three-dimensional. These scans allow doctors to see very detailed images of the inside of the body. MRI passes through bone and takes pictures of soft tissue, such as tendons, blood vessels, and the brain. The MRA scan specifically gives a good view of blood vessels (arteries and veins).

If you have a pacemaker (a small device helping control the rhythm of your heart), had a previous brain surgery or had a recent hip or knee replacement, MRI might not be able to be performed. Please inform the nurses or doctors about any of the above mentioned conditions.

You may be given provisional results immediately but formal results are given once these pictures are reviewed in depth by your medical team.
No Vascular Abnormality Found

In many cases a cause is found for the SAH, such as an aneurysm (or blister) on the blood vessel wall. This then requires further treatment to prevent it from bleeding again.

However, in around 10% of cases no obvious blood vessel (vascular) abnormality is identified. In some cases we cannot find an underlying cause.

Some SAH without an aneurysm are called “perimesencephalic” haemorrhages, where the risk of a future haemorrhage is extremely low and the likelihood for a good recovery is high.

In other cases, another diagnosis is given after further investigations; e.g. reversible vasoconstriction syndrome (RVCS), cerebral amyloid angiopathy (CAA) or other neurological conditions. In this case you will be referred to a Consultant Neurologist for further review who will be able to explain more about these conditions.

RCVS is characterised by acute severe headache (often described as the worst headache ever:-“thunderclap” headache), vasoconstriction (narrowing) of blood vessels reducing the flow of blood. This narrowing resolves within 3 months and the recovery is usually good.
CAA is an age-related disorder, characterised by deposition of “beta amyloid” (a type of wrongly folded protein) in cerebral vessels near the surface of the brain. This disorder leads to haemorrhage in the brain itself, but this risk can be reduced by treating high blood pressure and avoiding blood-thinning drugs.

More information on these conditions can be obtained from your Clinical Nurse Specialist.

When no cause is found, no treatment will be required other than to support your recovery by managing your symptoms.

**Whether a cause is found or not, you will still need to recover from the SAH itself.**

**Further investigations**

In certain cases, further investigations are necessary. These are specific to each individual case. It may be decided that you need a delayed angiogram or an MR scan as an inpatient or after you go home.

**Going Home**

You might be discharged home or back to your first hospital.
This will depend on the speed of your recovery, what support you have at home, and how far you have to travel. Depending on the effects of your SAH, arrangements might be made for you to have physiotherapy, occupational therapy, or speech and language therapy.

What precautions should I take now?

- Continue to take your medications as prescribed
- Keep up your fluid intake
- Give up smoking if you smoke
- Don’t drive; contact the DVLA
- Avoid lifting heavy weights
- Make sure your blood pressure is controlled.

Recovery

Tiredness, restlessness and fatigue

It is common to experience severe tiredness, especially in the first few months after the haemorrhage. You might find out that you become exhausted even after commonplace activities like going to the shops, watching television, or talking with your friends. This is because your brain has to
concentrate hard to process everything going on around you and so becomes tired very quickly. It is your body’s way of telling you to slow down. Taking regular short breaks can help. Try to do this at least three times a day for around 20-30 minutes. Listening to your favourite music can help but try to avoid doing anything too stimulating like watching television or reading. It is important to note that different people find different activities relaxing, so do what best suits you.

You may also find that you have difficulty sleeping at night and can only sleep for short periods. Some people find that aromatherapy helps them relax and sleep. If you wake in the night and cannot get back to sleep, try getting up and making a hot drink rather than lying there worrying about not sleeping.

It can help to have a daily routine. Try to get up and go to bed at the same time every day. If you continue to have significant difficulties with your fatigue then contact your Clinical Nurse Specialist for further support.

**Headaches**

Headaches following your discharge from hospital are common but usually ease with time. They tend not to be as
severe as when you have the haemorrhage and can often be controlled with painkillers like paracetamol. Fatigue is closely associated with headaches and might become worse when you are tired. Again, this is your body’s way of telling you to slow down. It is important you drink plenty of fluids throughout the day; at least two litres. This helps blood circulation in the brain and prevents dehydration. Alcohol and caffeine-based drinks like cola and coffee may increase the risk of headaches.

It is also important to avoid things that put too much strain on your body, like becoming constipated or lifting heavy weights as these can increase pressure in the brain and so cause headaches.

**Unusual sensations**

People say that they experience odd or unusual sensations in their brain which are different from headaches. They are very difficult to explain but people sometimes describe them as ‘tickly’ and something like water running across the surface of the brain. No one knows why these sensations occur but they are common and are nothing to be concerned about. They will usually ease with time.
Sight
Your vision might be disturbed in various ways: blurring, blind areas, black spots, or double vision. If so, we can test your vision before you are discharged from hospital. This enables us to monitor any changes over a period of time. These tests will be repeated at follow-up appointments. Improvements in vision usually take place gradually over weeks and months.

If you already wear contact lenses/glasses it is a good idea to wait for 3-6 months after the haemorrhage before having your eyes tested again. This is because your vision might take a while to settle down and your glasses or lenses might need changing many times while this happens.

Memory
Memory and concentration problems are common following an SAH. You might even find it difficult to concentrate for long periods of time and this might make simple tasks like reading a book or making a cup of tea difficult and frustrating. Try to break tasks down into small steps so you only have to concentrate for short periods of time before taking a rest.

After an SAH, certain parts of your memory might be
affected. You might not remember very much about the haemorrhage itself or what happened to you in hospital. You might find that you can remember things that happened to you a few years ago but find it difficult to remember new information like the name of the person you just met. Many people find that their memory improves with time, although it might never be quite as good as it was before the haemorrhage.

You can ask your Clinical Nurse Specialist for further support with this, and they may refer you to a psychologist who will carry out a neuropsychological assessment. Typically this will involve doing a number of different tests to assess what specific memory and concentration problems you are experiencing.

Emotions

Many people find it difficult to come to terms with having had an SAH. You might feel depressed, tearful, angry or anxious for no apparent reason. These feelings can be physical (related to what has happened to your brain), emotional (a reaction to the traumatic experience), or both. Many of these changes are temporary and will improve over time. It can be helpful to stick to a routine and plan what you are going to
do each day, even if it’s just going to the shop to buy a newspaper or going for a walk in the park.

As time goes by, it can be hard to express and explain to others how you feel and how you have changed, especially as you might appear to have recovered physically. This can lead to feelings of isolation. It often helps if you can talk to a friend or relative about how you are feeling rather than keeping your feelings bottled up inside. You might want to talk to your GP, or your Clinical Nurse Specialist about seeing a clinical psychologist or counsellor.

**Feelings and worries**

It is natural to feel anxious and to worry about the future, especially when you are back at home. Many people are concerned that the haemorrhage might happen again, although this is extremely unlikely. It can be difficult recovering from a major life event. The first few weeks can be intense and you may find that family and friends treat you differently. Everybody has different ways of coping.

It is common for people to become irritable or angry after an SAH, but they might not be aware that their behaviour or personality has changed. Irritability or angry outbursts can be very difficult for friends or family to cope with.
Communication and talking openly is important at this time.

**Everyday Activities**

**Can I drive?**

You are legally obliged to notify the Driver and Vehicle Licensing Agency (DVLA) about your condition and must not drive until you have DVLA approval. Be sure to contact your insurance company.

You might be permitted to resume driving once a doctor has confirmed that you have made a full recovery. If you are experiencing problems as a result of the haemorrhage or have had certain types of treatment, you might not be allowed to drive for a given period of time (often up to one year). If you have seizures, this period might be extended until the seizures are controlled.

If you continue driving without DVLA approval, insurers will not be obliged to meet any costs and you might be uninsured. This would make you personally liable for any damage you cause to others.

If you have disabilities you will probably need a medical examination to be certain you can control a vehicle safely. Modifications to your vehicle might be required. Your vision
will also be checked.

You can re-apply for your licence before the date you are scheduled to return to driving so that it is ready by the time this date comes around. You will probably only be given a three year licence.

Restrictions are stricter for HGV (Heavy Goods Vehicle) or PSV (Public Service Vehicle) licences.

**Can I fly?**

Yes, depending on your recovery. There is nothing to stop you from flying once you are fit enough to do so.

You might experience headaches during take-off and landing due to pressure changes. You should increase your fluid intake, but try to avoid alcohol and caffeine as these can increase the risk of headaches.

You are advised to avoid flying for up to six weeks after a subarachnoid haemorrhage, as you are unlikely to feel well enough to travel. You should inform your insurance company about the haemorrhage.

It is worth bearing in mind that air travel can be stressful for people in good health so it can be especially stressful if you are feeling unwell.
Can I play sport?
Yes, but you should avoid all contact sports like rugby, boxing or martial arts for at least six months. You can then discuss with your specialist the possibility of resuming these sports if you wish to.

Can I have sex?
You can resume sexual activity as soon as your feel ready. There is no risk. Women are advised to avoid becoming pregnant for the first six months following subarachnoid haemorrhage.

Can I drink alcohol?
You should not drink any alcohol for the first few weeks. After that, small amounts of alcohol are safe, depending on any medications you may be taking, although you are likely to feel the effects more than you used to. Some people find they have more severe hangovers after an SAH. If you are taking any medication, you should check with your doctor if it is safe to drink alcohol.
When can I go back to work?

We would recommend that you take at least six weeks off work after a non-aneurysmal subarachnoid haemorrhage. Some people will need to take a longer time to recover, and it can take many months after an SAH to feel that life is getting back to ‘normal’.

Many people find it helpful to go back part-time or for a few hours each week before returning to full-time work. It depends on the individual. You can discuss a graded return to work with your Clinical Nurse Specialist.

Am I progressing quickly enough?

There is no set timescale. Each person is different. You can expect to have good days and bad days during your recovery. Tiredness and fatigue are common after any serious illness.

You will know if you are doing too much if you become exhausted and need to rest. Try to recognise when your body is letting you know that you need to slow down.

There is not a great deal you can do to speed up your recovery. The main advice is to take it easy and listen to what your body is telling you.
Friends and Family

It can be difficult for friends and family to understand what has happened to someone who has had an angiogram negative SAH. They might look fine physically, but it can take a long time to get back to “normal”.

Often, friends and family find it hard to know what to say. They do not know whether to ask someone if they are OK, or to behave as if nothing has changed. People who have had an SAH can find it difficult to talk about the problems they are experiencing and might feel isolated as a result.

**Tips for friends and family**

- Keep a routine and avoid surprises
- Try not to take remarks personally
- Try to keep calm at all times
- Try not to let too many people visit at the same time, or have too many distractions going on at the same time.
References:
The Brain and Spine Foundation Booklet for Subarachnoid Haemorrhage.
The Walton Centre Booklet for Subarachnoid Haemorrhage: No Cause Found.

Where can I get more information?
The Brain & Spine Foundation
Telephone: Helpline: 0808 808 1000
Email: helpline@brainandspine.org.uk
Website: www.brainandspine.org.uk

The Stroke Association
Helpline: 0303 3033 100
Email: info@stroke.org.uk
Website: www.stroke.org.uk

Headway
Helpline: 0808 800 2244
Email: helpline@headway.org.uk
Website: www.headway.org.uk
The Disabled Living Foundation
Helpline: 0300 999 0044
Email: helpline@dlf.org.uk
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UCL Hospitals cannot accept responsibility for information provided by other organisations.

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