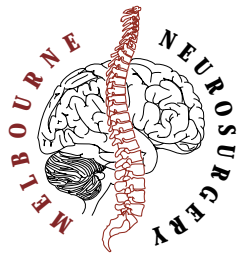


INFORMATION LEAFLET

SUB-ARACHNOID HAEMORRHAGE



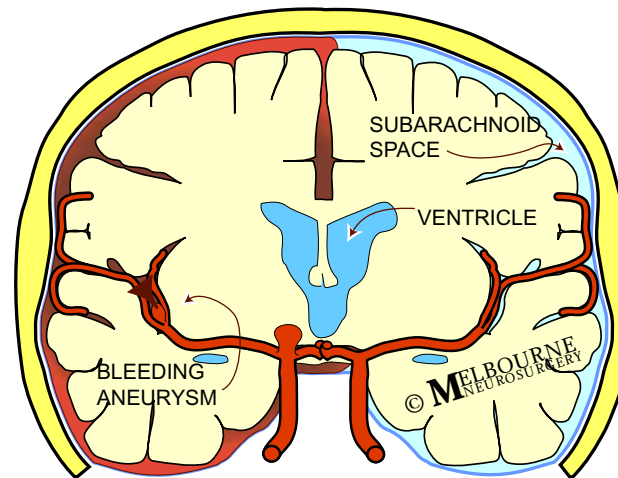
WHAT IS A SUB-ARACHNOID HAEMORRHAGE ?

The subarachnoid space is the place around the brain that contains the normal fluid (C.S.F) that bathes the brain and the blood vessels that supply the brain with oxygen and nutrients. Some of it looks like a spiders web under the microscope and this is where the term arachnoid comes from. If bleeding occurs around the brain it usually occurs in this space. So if there is blood in this space it is called a subarachnoid haemorrhage.

WHAT CAUSES THE BLEEDING ?

The commonest cause is usually trauma to the head. Other causes are bleeding from an aneurysm or arteriovenous malformation. It may occur from a bleed in the brain substance rupturing through the surface. Rarely it may occur from a blood clotting abnormality or from a vein rupturing.

THIS LEAFLET WILL EXPLAIN THE
CONSEQUENCES OF THE WORST CAUSE:
BLEEDING FROM A CEREBRAL ANEURYSM.



IS IT SERIOUS ?

VERY The death rate is 45% at 30 days and of those who survive almost half will have some residual problems.

HOW DO YOU KNOW YOU HAVE HAD A HAEMORRHAGE ?

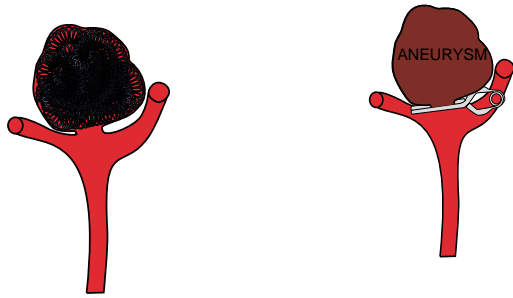
The typical patient will complain of a severe headache, the worst that you have ever had. It comes on suddenly and is often described as being like a blow to the head. It is commonly associated with severe nausea and vomiting. The light will make the headache worse. If the blood lost is large then you may become unconscious or even die.

HOW DO WE CONFIRM THIS ?

Your history is usually the biggest clue. If we are suspicious then we would do a CAT scan to look for the blood around the brain. This is usually positive. If there is no blood seen on the scan then we will perform a LUMBAR PUNCTURE(spinal tap)(see leaflet) to look at the fluid around the brain to see if there is any blood in it. Once we have confirmed the fact that you have had a bleed you will need to have a CEREBRAL ANGIOGRAM(to look at the blood vessels in the brain)(see leaflet). This will hopefully find the cause. What happens next depends on what the angiogram shows.

WHAT COULD THE ANGIOGRAM SHOW?

1. Nothing abnormal. Then it will be repeated at about one week to make sure that there is no aneurysm because sometimes the sac may clot off and it may not be seen.
2. An Arterio Venous malformation. This will need to be removed if possible at some time in the future.
3. A CEREBRAL ANEURYSM(see leaflet). This will need to be dealt with to stop it bleeding again. The options are to either operate and clip the aneurysm or to coil the aneurysm via an angiographic approach. Your surgeon decides on the approach in discussion with you or your relatives.



WHEN SHOULD THE ANEURYSM BE FIXED?

As soon as is possible. In most cases it will be done on the day you arrive in hospital. If you arrive late and we do not get the angiogram till late at night then it will be done next day. This is because it is safer to do a difficult procedure with rested staff. If you are too sick for surgery we may wait to till things improve.

WHAT ARE THE RISKS OF SURGERY ?

These can be quite high but when compared to the risk of dying from a further bleed it is the preferred option. The big risk in order of severity are Death and Stroke. Other risks include infection and epilepsy. Sometime at surgery the aneurysm cannot be clipped because of its shape or position. In these cases it is usually wrapped to reduce the risk of bleeding(see leaflet CRANIOTOMY/CLIPPING OF CEREBRAL ANEURYSM).

WHAT HAPPENS AFTER SURGERY ?

If all goes well then you should get better but there are a lot of other factors that will affect your recovery. The most important is how bad the haemorrhage was in the first place. The sicker that you are when you come to hospital then the longer and more complicated your recovery will be. The chance of dying is directly related to how sick you are at presentation.

FACTORS THAT COMPLICATE YOUR RECOVERY AFTER SURGERY

Repair of the aneurysm is only the first hurdle in your illness. The blood that leaked from the aneurysm causes two other major problems.

1. Cerebral Vasospasm.
2. Hydrocephalus

Cerebral Vasospasm

When the leaked blood breaks down it irritates the blood vessels and causes them to narrow(called vasospasm). This can either slow down the flow of blood to the brain or the flow may stop completely. This may produce a stroke. To try to prevent this we do three things.

1. The main treatment is to try and push the blood through the narrowed vessels, we do this by increasing you blood pressure with drugs and fluids.
2. We give you a special drug called Nimodipine that helps to reduce the spasm in the vessel and allows the increased blood pressure to keep it open.
3. The brain needs oxygen and so we give you extra oxygen to breathe.

Sometimes these things will work to prevent a stroke or reverse damage from the narrowed vessels. Other times the spasm in the vessels does not respond to any treatment. If it is really bad you can die from vasospasm.

Hydrocephalus

This literally means water on the brain. The Brain produces a special fluid called cerebro-spinal fluid (C.S.F) this is produced in the middle of the brain (ventricles) and travels through a pathway in the brain and then over the outside of the brain in the subarachnoid space to be absorbed at the top of the brain. The blood in the subarachnoid space blocks the fluid from being absorbed. The brain still produces the fluid and the pressure in the ventricles can build up. The ventricles then enlarge which can be seen on the CAT scan.

Hydrocephalus can make you drowsy. This may be treated with a few lumbar punctures to temporarily take off some fluid. Often you will require a catheter to be inserted into the middle of the brain until things settle down (this may have been inserted at the time of the surgery). If they do not settle you may require a Ventriculo-Peritoneal Shunt (see leaflet). This is a permanent drain.

HOW LONG WILL YOU BE IN HOSPITAL ?

This depends on how sick you have been / if you get vasospasm and if you have had a stroke from your bleed or vasospasm.

A significant number of patients do require rehabilitation for some deficit.

What happens when you go home ?

It usually takes a long time to recover. Most patient have problems with memory and concentration even when things have gone well. You will be unlikely to return to work for at least 3 months. Things do improve and initially this will be quickly but continues slowly over many years.

FOR ANY OF THE ABOVE PROCEDURES SEE THE RELEVANT PROCEDURE LEAFLET

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