MELBOURNE NEUROSURGERY

INFORMATION LEAFLET

INTRA-CEREBRAL HAEMORRHAGE

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WHAT IS AN INTRACEREBRAL HAEMORRHAGE ?

This is a bleed into the substance of the brain. If it is around the outside of the brain and blood vessels it is called a Sub-arachnoid Haemorrhage. If it is into the cavities in the middle of the brain it is an Intraventricular Haemorrhage and if it is over the surface of the brain it may be a Subdural or Extradural Haemorrhage. An intracerebral haemorrhage may occur in conjunction with any of the other bleeds.

WHAT CAUSES A HAEMORRHAGE ?

There are a wide variety of causes and they include:
Hypertension - most common
Trauma - common in the young and elderly
Rupture of an Aneurysm(berry)
Rupture of an arteriovenous Malformation
Bleeding into a tumour or infection.
Bleeding into a cerebral infarct.

Is a bleed a STROKE ?

Stroke is a term commonly used, it refers to damage of the brain which can either be from a bleed or blockage of a vessel (producing an infarct).

WHAT ARE THE EFFECTS ?

This depends on the location and the size of the bleed.

If the bleed is very large then it usually does not matter where it is with the outlook being very poor.

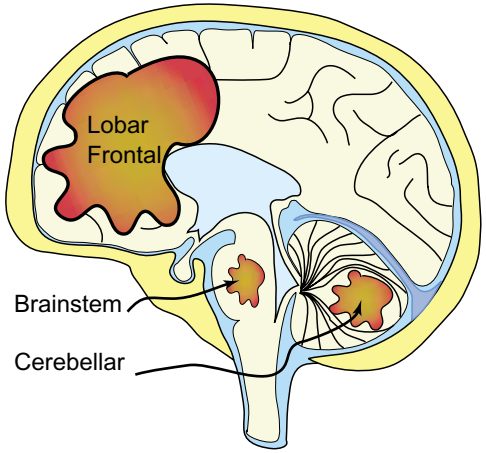
If the bleed is in an important part of the brain such as the part that controls movement or speech it may not need to be very large to produce severe effects on these functions.

If it occurs in the brainstem the prognosis is poor because of the important structures there.

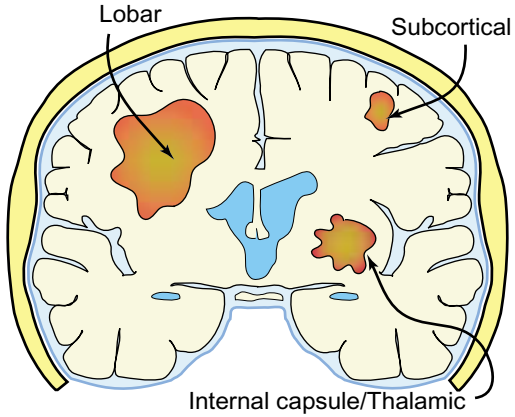
With a large bleed not only will it affect the area that it has bled into but the size will also compress other brain in the head to produce drowsiness or even coma.

WHAT HAPPENS WITH A BLEED ?

This depends on the cause of the bleeding.
If a large artery bleeds into the brain then blood is injected at a fast rate (like a hose into sand) most people do not survive long enough to get to hospital.
If the bleed is from a smaller vessel then it may stop after a while in a similar way to when the skin is cut. The size of the haematoma (blood clot) it produces varies from patient to patient.
While the vessel is bleeding the clot is enlarging and this can tear the brain around it causing more bleeding from other vessels.



The damage you suffer can be from the original cause of the bleeding, the direct damage to important structures, or the pressure of the clot on the surrounding brain.



Investigations

If it is a small bleed and only a few symptoms then you may be looked after by your local doctor. A lot of people are initially managed in an emergency department.

Your doctor will usually make the diagnosis from the symptoms that you have. There can be similar symptoms with a blockage in the arteries in the brain. The common tests are:

CAT SCAN

This is usually the first test. This is a computerised X-ray of your brain that will show the size and location of the bleed.

M.R.I. (Magnetic Resonance Imaging)

This may be done to get information as to the cause of the bleed. It produces pictures like the CAT scan but they are generated using a magnetic field and not using radiation. This test is not always needed if the CAT scan shows the problem.

CEREBRAL ANGIOGRAM

Used to look at the blood vessels that go to the brain.

You are referred to a specialist after the CAT scan in most cases and they organise any further investigations.
The common specialists to be referred to are:

- Neurosurgeons
- Neurologists
- Physicians

What happens next ?

If the clot is small then we will control your blood pressure to stop the bleeding getting worse and make sure that your blood clots normally. You may have a few CAT scans to make sure the clot is not enlarging. We hope that over time the clot will dissolve like a bruise anywhere else.

If the clot is very large and has already destroyed a large amount of brain it is unlikely that anything can be done. Even emergency surgery will not help as the brain does not stop bleeding and the clot re-accumulates. The brain does not recover from the large bleeds.

In certain circumstances surgery may be offered to remove the blood clot(and to remove the cause of the bleeding). If the clot is starting to increase in size and is either threatening your life (because of pressure on the brain) or is affecting an important part of the brain surgery may help.

This will be discussed with a Neurosurgeon.

Some clots are not accessible to surgery because of their location. More damage may be caused with trying to get to deep lesions such as small clots in the region of the thalamus(see illus). If you present as an emergency you may be rushed for an operation because you are rapidly getting worse.

Some patient deteriorate a few days after the bleed. This may be from enlargement of the clot or from swelling around the bleed. This may be transient and improve over the next week or so. It may be at this stage surgery is suggested.

Small bleeds, only producing a little weakness (and not requiring surgery) may suddenly turn into a large bleed that cannot be treated. This may be because the bleeding starts again and is faster than before. This could come from rupture of an artery affected by a blockage.

In some bleeds even though surgery may save the patients life the damage done by the bleed may be so severe that the patient will remain either in a coma or on a ventilator. In these cases surgery is not suggested. Some people have made a decision that if they have a bad stroke they do no want to be treated, this wish is respected.

Will the damage repair itself ?

Sometimes.

Some bleeding just pushes on the brain and stops it working, when the clot dissolves the function returns.

The bleeding may damage the brain permamently.

Any recovery is slow and requires a large patient and family participation.

After six months recovery will continue but much slower than before this.

Patients do continue to improve for may years.

REHABILITATION

This aims at making the most of the remaining function and also to help with the recovery (as much as is possible) of any deficit that you may have.

Depending on the problems you have this may either be as an inpatient or outpatient.

The therapists you require will formulate a special program for you and this is aimed at getting you home and independent and back to work if possible.

You will not be sent for rehabilitation until all the acute medical problems are resolved.

MELBOURNE NEUROSURGERY
neurosurgery.com.au

545 ROYAL PARADE
PARKVILLE VIC 3052

PHONE 03 9816 - 9844
FACSIMILE 03 9816 - 9877

MELBOURNE NEUROSURGERY
PTY LTD
ACN 082 289 316

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