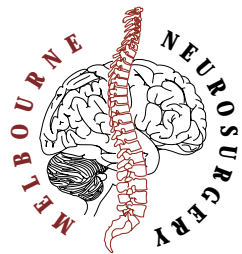


INFORMATION LEAFLET

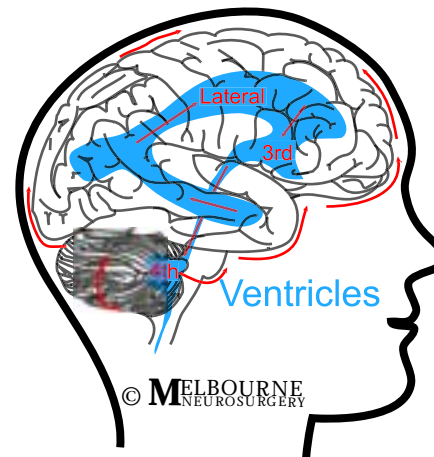
HYDROCEPHALUS

including
Normal Pressure Hydrocephalus



WHAT IS HYDROCEPHALUS ?

This where the normal fluid that bathes the brain (Cerebrospinal Fluid C.S.F.) builds up on the inside of the brain causing the pressure inside the head to rise and the cavities inside the brain (Ventricles) to enlarge. The term comes from the common name of water(hydro) on the brain(cephalus).



WHAT HAPPENS ?

The Brain usually produces C.S.F. in the ventricles and this works its way through the brain in special channels to get out at the bottom of the brain through the 4th ventricle. It then flows over the surface of the brain to get to the top of the brain where it is absorbed in special areas along a large vein that runs just under the top of the skull. If the pathway is blocked at any point the fluid builds up behind the blockage as the fluid is still produced.

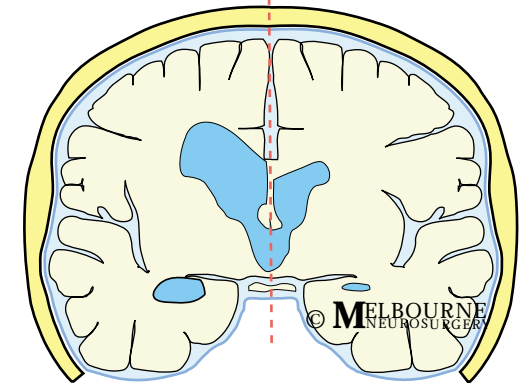
WHAT CAUSES THE BLOCKAGES ?

Blockage to the pathways in the brain

- Tumours
- Infection
- Blood(Intracerebral bleeding)
- Abnormal brain development

Blockage over the surface of the brain

- Blood(Trauma or Sub-arachnoid bleed)
- Infection
- Tumour
- Old age(normal pressure hydrocephalus)



Section through middle of brain
showing enlarged ventricle on left
side of picture

WHAT PROBLEMS CAN THIS CAUSE ?

- Nothing at all
- Headaches
- Drowsiness
- Disturbance of vision
- Weakness
- Disturbance of balance
- Memory problems
- Nausea/vomiting
- Sudden death
- Epilepsy

HOW IS IT DIAGNOSED ?

Your doctor may suspect the problem based on the symptoms that you have. Sometimes it is found by accident. You may have had a cat scan of your brain because of something else. Your doctor may see something in the back of your eyes when he examines you to give him a clue that you have hydrocephalus.

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

The specialist will listen to your story examine you and look at your CAT scan. He will probably organise an M.R.I. scan if the CAT scan or your history give non obvious cause for the hydrocephalus.

WHEN IS IT TREATED ?

This depends on the cause of the hydrocephalus. If it is caused by a tumour the aim is to treat the tumour and the hydrocephalus should disappear.

If it is caused by infection then treatment with antibiotics may relieve the hydrocephalus. If it does not resolve after treatment then you may need a "shunt".

If it is caused by bleeding then once the body resorbs the blood the hydrocephalus should resolve.

If there is a structural abnormality in the brain (which may have been there since birth) something may have happened recently to cause the normal pathway that has developed to be affected. This can be something simple like a viral infection. This may not need to be treated but if it does the you may need a shunt.

HOW IS THIS TREATED ?

This depends on the cause and other factors. Sometimes nothing is required and the abnormality on the CAT scan is not to be worried about. You may need a temporary catheter placed into the middle of the brain to allow time for the treatment or resolution of the problem causing the hydrocephalus. If this does not work you may need permanent treatment. This is either with a Ventriculo-peritoneal Shunt or with a Third ventriculostomy. VENTRICULO-PERITONEAL SHUNT(see Leaflet) Tube passed under skin from middle of brain to abdomen. THIRD VENTRICULOSTOMY(see Leaflet) A hole is made through a thin part of this ventricle to allow bypass of the fluid from the middle of the brain to the surface of the brain.

IS SURGERY ALWAYS NEEDED ?

No. In some cases things will settle but in the acute setting something usually has to be done.

SOME SYNDROMES and CAUSES

COLLOID CYST

This is a cyst that occurs in the 3rd ventricle. It may produce headaches. Problems with memory may occur as it can press on the memory circuits of the brain. Even a small lesion can produce hydrocephalus and there is a tiny risk of sudden death if it blocks the pathway acutely. The colloid cyst is best treated with either removal or a shunt to both sides of the brain.

AQUEDUCT STENOSIS

The passage of the fluid from third ventricle to the fourth ventricle is blocked. This usually has been present since birth. This may be found on a scan done for other reasons and is the least likely condition to require any treatment.

NORMAL PRESSURE HYDROCEPHALUS(N.P.H.)

This is a condition that affects the elderly. It is usually due to blockage of flow of the fluid over the surface of the brain or because of reduced absorption at the top of the brain. The reason for this is uncertain. It causes an enlargement of all of the ventricles. This is the cause of your symptoms.

1. Problems with your memory
2. Difficulty walking (unsteady and difficulty with balance)
3. Incontinence

There are lots of tests to try and confirm this diagnosis when you have these symptoms and we find the enlarged ventricles on your CAT scan. These may or may not be conclusive. The problem is that with increasing age the brain shrinks and the ventricles enlarge any way.

If we suspect you have N.P.H. then a shunt will be suggested. This does not always cure the problem. It may only work in 50%. In some patients the shunt may only work for a short period of time (if your symptoms return the we will reinvestigate you to make sure it has not blocked). There can be a very large improvement of your symptoms with the shunt .

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