

Venous Sinus Stenting for the treatment of Idiopathic Intracranial Hypertension

Department of Neuroradiology

Patient information

This information is for patients having a procedure called venous sinus stenting to treat idiopathic intracranial hypertension. It explains what these terms mean and tells you about any benefits and risks.

What is intracranial hypertension?

Idiopathic intracranial hypertension (IIH) is the build up or presence of pressure around the brain.

What causes IHH?

The cause of IIH is not fully understood. One theory is that a narrowing of one or more of the large veins (sinuses) draining blood from the brain creates a build up of pressure inside the head. This creates the symptoms of headache and loss of vision.

What is venous sinus stenting?

The idea behind venous sinus stenting (VSS) is to open up the narrowing in the venous sinus. This allows blood to pass through more easily, and so reduce the build-up of pressure inside the head. A stent is small tube made of wire mesh, and this tube is inserted in to the venous sinus and expanded across the narrowed part to hold it open.

How effective is VSS?

VSS is a relatively new procedure. The medical evidence for its effectiveness in treating IIH is currently limited to a small number of reports and case series from a few centres around the world. No large clinical trials have been completed, although there is currently a small clinical trial in progress in the USA. For this reason VSS is usually only performed in people who have tried all medical and surgical options, but who still have persisting symptoms.

For every 10 people treated, around 8 patients report an improvement in either some or all of their symptoms. Some patients have complete relief of symptoms. It is not possible to know before VSS how any given person will respond to the treatment. Improvement in vision alone seems to be more common than improvement in both headache and vision.

What are the alternatives to VSS?

As stated above, VSS is usually only performed in people who have tried all medical and surgical options. This is a new treatment offered when there are no other alternatives.

Are there any tests needed before the procedure?

Before VSS can be performed, most patients will have a scan to look at the venous sinuses – either magnetic resonance venography (MRV) or CT venography (CTV), or both.

If the MRV/CTV tests suggest there is a narrowing of the venous sinus, the next step is to carry out a test called retrograde venography. This test confirms the narrowing of the venous sinuses. It involves:

- putting a small tube into the vein at the top of the leg
- passing it up through the blood vessels into the head
- injecting a special dye that shows up on X-rays to confirm the narrowing
- using the tube to take pressure measurements on both sides of the narrowing, to confirm that there is a hold-up of blood across the narrowing.

The test can be carried out under local anaesthetic (awake), but some light sedation can be given. There may be a little discomfort at the back of the head during this test.

What to expect before and after the VSS procedure?

VSS is performed under general anaesthetic (asleep), so patients must not to eat or drink anything for six hours before they have the procedure. The anaesthetist will visit you before hand, and explain what is involved in the anaesthetic, and answer any questions related to it.

After VSS, some people have a different type of headache on one side of head, near to where the stent has been placed. If this happens, most people say this improves within a few weeks.

Occasionally, there can be hearing loss and dizziness on one side, but this usually improves quickly and completely.

Two blood thinning drugs (Aspirin and Clopidogrel) must be taken for three months after VSS, **without stopping**. This is done to prevent a clot forming inside the stent while it settles in. Occasionally these drugs can cause bleeding from the nose, gums or gut. If this were to happen, you should contact St George's Hospital. You will be given a direct point of contact before you leave the hospital.

What are the risks of the procedure(s)?

There is a risk of bleeding from the veins inside the head. Although this does not happen commonly, it can be life-threatening and may require open surgery to relieve pressure from the bleeding. The bleeding could cause permanent disability, such as arm/leg weakness, difficulty with speech and loss of vision.

Even though blood thinning drugs are taken after VSS, there is a risk that the stent could become blocked by clot. If this happens, there is a risk of stroke and bleeding inside the head, and again possibly permanent disability. A further procedure may be needed to try and unblock the stent, and additional blood thinning drugs may be needed.

A general anaesthetic also carries a very small risk to life, but this can be greater depending on the presence of other significant medical problems. The anaesthetist can usually advise on this.

Are there any longer-term risks?

Occasionally, further narrowing can develop inside or beside the stent. This may require an additional stent to be put in.

The long term (lifetime) effects of having a stent in a venous sinus are not known. So far, some people have been observed for nearly 10 years after the procedure. From this follow-up, there is not known to be any commonly occurring cause for concern.

The diagnostic tests CTV and retrograde venography, and the VSS procedure itself, all involve the use of x-rays. The x-ray dose to the body is relatively small, and the risk of developing cancer later in life as a result of these tests is very low.

Any questions?

As this is a new procedure, there is little information available for us to direct you to. However, if you have any questions, please discuss them with your neuroradiologist or neurosurgeon.

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