

Ventricular Shunts

University Neurosurgery Information Sheet

General indications for the procedure:

Shunts (small tube/catheter) are indicated when a patient's brain cannot handle the normal circulation of its fluid down the usual pathways. A shunt is implanted from the brain cavities that contain the brain/spinal fluid onto different other areas of the body where the fluid can be taken back into the circulation. Typically, shunts go to the abdominal area. But sometimes they can be placed into the heart and the lungs. If the shunt is not placed, then the fluid "backs up" creating increased pressure. This is called hydrocephalus.

Description of the procedure:

After the patient is put to sleep by the anesthesiologist, some of the hair is shaved. Then a small incision(s) is made on the scalp and a small hole is performed so that a catheter (tube) can be advanced into the cavity that contains the brain fluid. This catheter is then connected to a valve (the valve will feel like a small bump under the scalp) which is designed to regulate the amount of fluid that flows out of the brain. In turn, the valve is then connected to another catheter that will typically go to the abdomen although it can also be placed onto the heart or chest.

Risks of the procedure:

Risks include, but are not limited to: Infection with the need for removal of hardware and treatment with antibiotics while in the hospital and while on drainage from temporary catheter, need for multiple re-operations for repositioning of catheter, blood clot in brain, stroke, speech problems, paralysis of one part of body (opposite to shunt generally), collapsed lung, exposed hardware with need for replacement, injury to neck vessels, injury to gut, need to re-operate to reposition catheter in abdominal area, accumulation of fluid in lungs, heart disease, kidney problems, broken off catheters, pain, and/or noticeable catheter pain.

Procedure alternatives, if any:

Sometimes a small opening can be performed inside the brain into one of the clogged pathways to get the fluid to flow again. If this can be achieved, then a shunt may not be needed. This is called an endoscopic third ventriculostomy (ETV). There has to be a very precise type of anatomy for this procedure to work.

Probable consequences of refusing procedure:

If hydrocephalus is not treated, pressure will continue to accumulate causing neurological damage which may be irreversible and even fatal.

Person(s) performing the procedure:

The surgical team for this procedure is large. This involves, but is not limited to, the attending surgeons, resident surgeons, surgical nurses, physician assistants, surgical technologists and anesthesiologists. Everyone involved will be performing important tasks related to the surgery in accordance with the hospital policies, and based on their skill set and under the supervision of the responsible practitioners.