

# NATIONAL INSTITUTE FOR CLINICAL EXCELLENCE

## INTERVENTIONAL PROCEDURES PROGRAMME

### Interventional procedure overview of lumbar subcutaneous shunt

#### **Introduction**

This overview has been prepared to assist members of the Interventional Procedures Advisory Committee (IPAC) advise on the safety and efficacy of an interventional procedure previously reviewed by SERNIP. It is based on a rapid survey of published literature, review of the procedure by Specialist Advisors and review of the content of the SERNIP file. It should not be regarded as a definitive assessment of the procedure.

#### **Date prepared**

This overview was prepared by Bazian Ltd in December 2002.

#### **Procedure name**

Lumbar subcutaneous shunt

#### **Specialty society**

Society of British Neurological Surgeons

#### **Indication(s)**

Communicating hydrocephalus (normal pressure hydrocephalus) and benign intracranial hypertension (pseudotumour cerebri).

Communicating hydrocephalus is an uncommon condition caused by excess fluid (cerebrospinal fluid) collecting in the space between the brain and the layer of tissue surrounding it (the subarachnoid space). It may be due to a congenital abnormality, a brain haemorrhage or meningitis. Sometimes no cause is identified. The symptoms are confusion, gait disturbance and incontinence of urine. The condition may cause brain damage or death if not treated.

Benign intracranial hypertension is an uncommon condition of unknown cause, in which the pressure of cerebrospinal fluid is increased. The symptoms include headache, dizziness and visual problems. The prognosis is generally very good, although a few people may experience permanent visual loss.

#### **Summary of procedure**

A cerebrospinal fluid shunt is a system of valved tubes which diverts cerebrospinal fluid from the subarachnoid space into another part of the body to drain it and prevent damage to the brain or eyes.

Usually, a shunt is tunnelled under the skin, with the upper end is in one of the internal cavities of the brain and the lower end is in the heart (ventriculo-atrial shunt)

or in the peritoneum (ventriculo-peritoneal shunt). Alternatively, the upper end of the shunt is placed in subarachnoid space in the lumbar part of the back and the lower end drains fluid into the peritoneum (lumboperitoneal shunt).

A lumbar subcutaneous shunt differs from these types of shunt in that the cerebrospinal fluid drains into the potential space immediately under the skin. A narrow tube is inserted into the subarachnoid space in the lumbar part of the back during a lumbar puncture. It is then fed under the skin to a site where it can drain fluid, usually in the flank or abdomen. The advantage is that, unlike other shunt procedures, general anaesthetic is not required.

## **Literature review**

### **Appraisal criteria**

We included studies of cerebrospinal fluid shunts from the lumbar region into the subcutaneous space. We did not include studies of subcutaneous reservoirs.

### **List of studies found**

We found no studies.

**Validity and generalisability of the studies**

We found no published studies.

**Bazian comments**

We found no published studies of lumbar subcutaneous shunt.

**Specialist advisor's opinion / advisors' opinions**

*Specialist advice was sought from consultants who have been nominated or ratified by their Specialist Societies or Royal College.*

- only being done by one surgeon in Britain, who is collecting data on it
- most neurosurgeons do not believe it can work as subcutaneous tissues do not absorb cerebrospinal fluid