

Distal Catheter for VP Shunt

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Technology description

Background Information

Hydrocephalus is an illness in which cerebral spinal fluid accumulates in the skull and causes the brain to swell. The cerebrospinal fluid builds up primarily in the brain cavities, which causes the ventricles to become enlarged and compresses the brain against the skull. This is caused by birth defects, meningitis, head injuries, and bleeding from a blood vessel in the brain. Hydrocephalus can be fatal if left untreated, and there is no cure available to treat this disease. The most common treatment for hydrocephalus is a ventriculoperitoneal (VP) shunt operation, which diverts cerebral spinal fluid from the ventricular space to the peritoneal cavity. The transferred fluid is safely and naturally absorbed in the peritoneal cavity. Currently VP shunts have a 40% failure rate, which is caused by distal catheter migration in up to 23% of patients. Researchers at the University of Iowa have developed a catheter capable of maintaining position in the abdomen, so that additional surgeries are not required to reposition the catheter in the abdominal cavity.

Technology Summary

Researchers at the University of Iowa have developed a catheter capable of maintaining position in the peritoneal cavity, which effectively transports cerebral spinal fluid from the brain to the peritoneum for natural re-absorption. This catheter has an inflatable portion at the distal end that can be inflated proximally. This novel feature of the technology prevents the catheter from backing out of the peritoneum, thus eliminating the surgeries needed to reposition the catheter in most VP shunt operations. Applications of this technology are not limited for the VP shunt procedure, and can have numerous application in other aspects of neurosurgery.

Advantages

- Novel distal catheter maintains positioning in peritoneum.
- Negates any additional surgeries needed due to migration of catheter in VP shunt.
- Potential applications for this catheter are not limited to this procedure.

Institution

[University of Iowa](#)

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