Cleveland Clinic Innovations

Catheter or Guide Tube with Slidable Balloon for Neuro Access

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PRODUCT

IVC or a guide tube with inflatable and slidable balloon that that helps place and secure the device for neuro access.

INDICATION

Medical Device, Neurosurgery, EVD, ICP, Clot removal

VALUE PROPOSITION

- Solves for the frequent occlusion of EVDs.
- Secure access helps avoid complications.
- 213,000 ICP procedures use an EVD in the US annually.

DEVELOPMENT STAGE

- Prototype developed.

INTELLECTUAL PROPERTY

US and WO Patent pending Publication:

• US20230017864A1
• WO2023003873A1

PARTNERING OPPORTUNITY

Development and commercialization

CONTACT INFORMATION

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UNMET NEED

Intra-ventricular catheters (IVCs), also known as external ventricular drains (EVDs) are routinely inserted to decompress and drain blood or fluid from the ventricular system. Currently, catheters are inserted through a small incision in the scalp and passed through a bone opening made with a drill. The catheters are tunneled out of the skin at a site 7-10 cm away and secured with sutures or external anchors. Frequently the catheters migrate or are accidentally removed by a patient pulling on the external tubing. Occlusion of the catheters is also common. Replacement procedures expose the patient to additional risk of infection or brain hemorrhage.

SOLUTION

The invention utilizes a slidable balloon that moves up and down a sleeve. The balloon can be inflated (and deflated) at the desired depth. The sleeve would be placed through the burr-hole opening and the balloon would be inflated to lock the sleeve in place. The sleeve would act as a port through which catheters could be exchanged as needed to clear excess CSF, blood, or other materials that may impair normal drainage. A self-sealing side port is used for a navigation stylet. This device, with some modification, can be used to evacuate intracranial hematoma via MRI guided focused ultrasound procedures, which require secure and accurate placement of a guide tube to provide aspiration. Telescoping catheters can be easily introduced, which will allow for multi-modal monitoring to take place via a single site. Deflating the balloon unlocks the device from the bone for easy removal.