Innovations
UNIVERSITY OF COLORADO
ANSCHUTZ MEDICAL CAMPUS

Cranial Surgery Device

Product

Neurosurgical device

Indication

Intracranial port and drainage

Value Propositions

- Minimally invasive
- Placed intracranially at bedside

Market

- $183 million—Global neurosurgical product market (4.2% CAGR 2016-2023)

Intellectual Property

- US Utility Patent Filed*
- Available for licensing

Contact

Doreen Molk
Doreen.molk@cuanschutz.edu

Ref# CU4315H

303-724-0220
innovations.cuanschutz.edu

Background on CU4315H

A subdural hematoma, generally caused by head trauma, is a collection of blood in the space between the brain and its outer membrane. Subacute and chronic subdural hematomas can usually be treated with a bedside procedure and do not require surgery. However, the current cranial port used in the evacuation procedure of those hematomas is limited in its capabilities: the hematoma is not always completely evacuated, the port does not allow for irrigation, and the device is not compatible with MRI or CT scans.

The team aims to develop a new bedside subdural hematoma evacuation device with irrigation capabilities, increased evacuation effectiveness, and imaging compatibility. Furthermore, the new cranial port is desired to be versatile in its applications. The same port should be compatible with multiple internal components each used to perform a different neurosurgical procedure. This will increase the range of patient care options available to doctors. Other requirements include durability, air tightness, and that the device is capable of being sterilized.

Technical Innovation

A team of mechanical engineers at the University of Colorado, led by neurosurgeons Dr. Zach Folzenlogen and Dr. Joshua Seinfeld, have developed a novel cranial port and drainage kit for use in the treatment of Intracerebral hemorrhage (“ICH”) and other pathologies including intraventricular hemorrhage, cerebral abscess, and subdural hemorrhage. This platform technology can be placed intracranially at the bedside by a neurointensivist, reducing overall costs by obviating the need to secure operating room time and resources for port placement. The kit includes a number of inner cannulas to enable a variety of treatment options such as aspiration/irrigation, evacuation, and potentially thrombolysis of fluid, as well as neuronavigation software to calculate the device setting for catheter placement

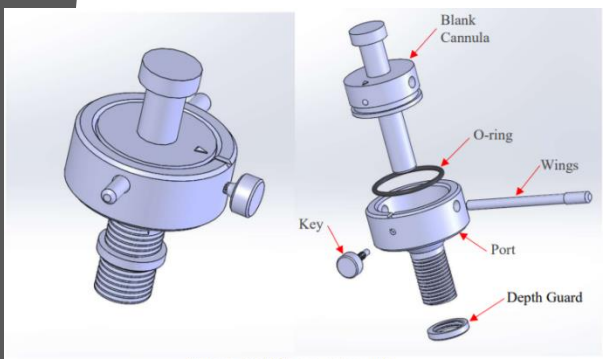

Figure 1. Port Placement Assembly.

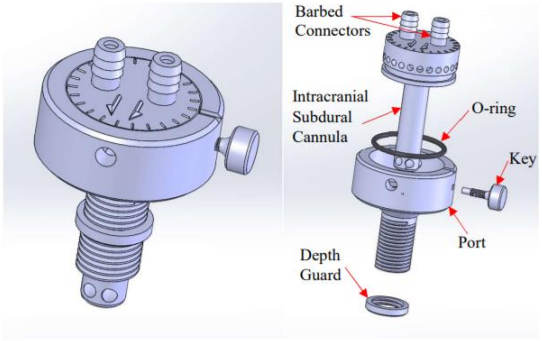

Figure 2. Subdural Evacuation Assembly.

Figure 1: - intracranial port placement device**. Figure 2-** intracranial subdural evacuation system

*US Utility Patent 16/620,678—" Subdural and Intraparenchymal Hematoma Evacuation System"—Filed December 9th, 2019