Thomale Guide

- Adjustable differential pressure versus adjustable gravitational valves in pediatric hydrocephalus
- Somatic DNA Variants in Epilepsy Surgery Brain Samples from Patients with Lesional Epilepsy
- Experience in endoscope choice for neuroendoscopic lavage for intraventricular hemorrhage of prematurity: a systematic review
- The importance of routine genetic testing in pediatric epilepsy surgery
- Navigated bedside implantation of external ventricular drains with mobile health guidance: technical note and case series
- Tailored Concept for Accurate Neuroendoscopy: A Comparative Retrospective Single-Center Study on Image-Guided Neuroendoscopic Procedures
- Neurosurgical treatment of pediatric brain tumors - results from a single center multidisciplinary setup
- Angulation Toward Coronal Convexity Measure and Catheter Length Indication Improves the Quality of Ventricular Catheter Placement-A Smartphone-Assisted Guidance Technique

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see Freehand ventricular catheter placement

External ventricular drain (EVD) implantation is one of the fundamental procedures of neurosurgical emergency usually performed freehand at the bedside or in the operating room using anatomical landmarks. However, this technique is frequently associated with malpositioning leading to complications or dysfunction.

Sargut et al. from the Charité and Cantonal Hospital of Lucerne, describe a novel navigated bedside EVD insertion technique, which is evaluated in a clinical case series with the aim of safety, accuracy, and efficiency in neurosurgical emergency settings.

From 2021 to 2022, a mobile health-assisted navigation instrument (Thomale Guide, Christoph Miethke, Potsdam, Germany) was used alongside a battery-powered single-use drill (Phasor Health, Houston, USA) for bedside EVD placement in representative neurosurgical pathologies in emergencies requiring ventricular cerebrospinal fluid (CSF) relief and intracranial pressure monitoring.

In all 12 patients (8 female and 4 male), navigated bedside EVDs were placed around the foramen of Monro at the first ventriculostomy attempt. The most frequent indication was aneurysmal subarachnoid hemorrhage. Mean operating time was 25.8 ± 15.0 min. None of the EVDs had to be revised due to malpositioning or dysfunction. Two EVDs were converted into a ventriculoperitoneal shunt. Drainage volume was 41.3 ± 37.1 ml per day in the mean. The mean length of stay of an EVD was 6.25 ± 2.8 days. Complications included one postoperative subdural hematoma and cerebrospinal fluid infection, respectively.

Combining mobile health-assisted navigation instrument with a battery-powered drill and an appropriate ventricular catheter may enable and enhance safety, accuracy, and efficiency in bedside EVD implantation in various pathologies of emergency neurosurgery without adding relevant efforts [1)]

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[1)]
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