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## Accurate insertion of external ventricular drains in a neuro ICU setting: A new grading scheme

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**Introduction:** Placement of an EVD is one of the most common ICU procedures that the neurosurgery residents practice at early stage of training. The safe use of such tool demands adherence to specific anatomical landmarks and procedure-related guidelines so as to avoid the certain pitfalls. It is valuable therefore that training programs periodically revisit their training in relation to outcomes in order to minimize problems and maximize training and clinical safety.

**Methodology:** The data were retrieved for patients admitted with an aneurysmal SAH to the Montreal Neurological Hospital and Institute between July 2006 and May 2009. We included all EVDs that were planned for frontal horn. The adequacy of EVD insertion, encountering vital anatomical structures, complications and resident's level of training were analyzed based on the grading scheme.

**Results:** Around 160 EVDs were inserted in the ICU after intracranial bleeding. Of those 15.7% landed in optimum intraventricular zone "foramen of Monro" (grade I) and 47.6% landed in the third or lateral ventricles (grade II) while 36.7% had a remote landing in parenchyma or CSF space (grade III). The latter was associated with a higher risk for complications.

**Conclusion:** The practice of EVD insertion, based on external surface landmarks, is associated with a high risk of missing the intended intraventricular target and potential serious complications. The proposed grading system for EVD insertion can be a useful assessment tool to evaluate out practice but further testing is required prior to validation.

### Biography

Ahmed Al Jishi graduated from Arabian Gulf Neurosurgery, Bahrain and completed his Neurosurgery Training at McGill University, Montreal in 2012. On completion of training, he further completed Fellowships in Pediatric Neurosurgery and Spine Neurosurgery. He is recognized by the Royal College of Physicians and Surgeon in Canada. He is currently a practicing Neurosurgeon with Hamilton Health Sciences where he also carries the Lead on the Neuromodulation Program for pain and spasticity. He published many papers in professional journals and has been an active participant in international conferences. His particular interests are in neuro-oncology, functional neurosurgery and spine research.

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