Position Statement

on

Minimally Invasive Surgery (MIS) for Intracerebral Hemorrhage (ICH) Evacuation by Non-Neurosurgeons

Neurosurgical intervention has evolved through technological advancements, minimally invasive techniques, and a focus on improving patient outcomes and safety. Recent print and conference presentations have suggested that non-neurosurgeons are capable of performing minimally invasive surgical evacuation of intracerebral hemorrhage (MIS ICH).[1] Proponents contend that non-neurosurgeons can perform MIS ICH with only a short didactic course followed by 5-10 proctored cases. We believe this expansion of scope and insufficient training of non-neurosurgeons to perform neurosurgical procedures would risk jeopardizing patient outcome and safety.

In the US, proficiency in craniotomy for evacuation of ICH requires a nationally accredited seven-year neurosurgery residency training program. Optimal and safe ICH evacuation involves a carefully planned scalp incision, opening the skull (via burr hole, craniotomy, or craniectomy) incision of the dura, and dissection through the brain to locate and evacuate the ICH, followed by meticulous hemostasis and closure. Patient safety has been improved by neurosurgical innovations such as neuro-navigation, superior illumination and magnification, and advanced systems for brain retraction. MIS ICH was developed to combine these advances to perform ICH evacuation with less invasiveness and minimized tissue disruption. However, MIS ICH as a technique does not obviate the required proficiency in safe ICH localization, evacuation, hemostasis, and closure. This technological innovation is intended to provide a proficient neurosurgeon with an additional surgical option for carefully selected patients. MIS ICH is not intended to expand the scope of neurosurgical procedures for indiscriminate use by non-neurosurgeons without the requisite neurosurgical training or certification. MIS ICH is an advancement in neurosurgical technique — not a substitute for neurosurgeons.

Organized neurosurgery, represented by the undersigned associations, strongly asserts that these intracranial procedures remain exclusively the domain of neurosurgeons trained in all aspects of intracranial surgery. This training includes a rigorous examination of these procedures and individual proficiency by accredited residency programs with national regulatory oversight. Our position is not a matter of professional jurisdiction, but fundamentally patient safety and ethical responsibility. The skills to safely perform ICH evacuation and manage complications, like converting to an extended craniotomy when necessary, are acquired through years of training and experience with a range of intracranial procedures and pathologies. These skills cannot be acquired through abbreviated didactic instruction and technical training.

It is well recognized that reduced surgical mortality and improved outcomes are correlated with extended training with graduated surgical responsibility.[2] Neurosurgeons in U.S. neurosurgical residency training programs perform at least 200 craniotomy procedures, with many performing over 800 before independent practice. To suggest that a brief didactic instruction and a small number of proctored cases for non-neurosurgeons can substitute for this extended neurosurgical training is counter to the fundamental principle of ensuring patient outcome and safety. Specifically, clinical trials of MIS ICH, such as ENRICH and MISTIE III (the latter not requiring craniotomy), demonstrate that patient outcome from

ICH evacuation is directly related to surgical proficiency.[3,4] MIS ICH must be performed with proficiency of ICH removal with minimal complications to demonstrate overall benefit compared to medical management alone. Further, there are cases of presumed spontaneous ICH that are unexpected vascular malformations (AVM or aneurysm). Non-neurosurgeons are not trained to recognize or safely manage these potentially life-threatening vascular malformations. Inappropriate use of MIS ICH in these settings by a non-neurosurgeon could be disastrous.

Given the significant morbidity of ICH, institutions granting privileges for MIS ICH to any provider (neurosurgeon or non-neurosurgeon) without extensive neurosurgical training and documented proficiency in intracranial procedures will invite potential liability and ethical scrutiny. Patients undergoing intracranial procedures deserve full knowledge and confidence in the training and proficiency of their providers. The undersigned associations affirm that non-neurosurgeons with minimized training for MIS ICH risk jeopardizing patient outcome and safety. MIS ICH is an advanced neurosurgical technique that is best performed by board-certified and board-eligible neurosurgeons who have the equivalent requisite training and proficiency.

References:

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Endorsed by:

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