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New Evidence Shows Brain Recovery after Traumatic & Spontaneous Intracerebral Hemorrhage using NICO Minimally Invasive BrainPath Approach

SAN DIEGO, April 23, 2019 — The use of Minimally Invasive Parafascicular Surgery (MIPS) techniques for removal of traumatic hematoma is encouraging, innovative and promising. Those are the insights from Julian Bailes, MD, Chair of the Joint Section on Neurotrauma and Critical Care for the American Association of Neurological Surgeons (AANS) and Congress of Neurological Surgeons (CNS), following the evidence highlighted in two abstracts on the subject at the recent AANS Annual Scientific Meeting.

Results from the 10-patient multi-center study, led by Jefferson Chen, MD, PhD, from the University of California Irvine, concluded that techniques using Minimally Invasive Parafascicular Surgery (MIPS) "may be used effectively and safely to remove deep subcortical hemorrhages" and "may improve the patient's hospital course and ultimate neurological outcome". Technologies used in the MIPS approach include the NICO BrainPath® for subcortical access and Myriad® for hemorrhage evacuation.

"This is the first multi-center experience in which minimally invasive techniques were used to remove tICH," said Chen. "These centers demonstrated that removal of tICH can be done safely and when done in a timely fashion may mitigate the toxic effects of the hemorrhage on surrounding brain. It is particularly promising for patients with subfrontal contusions."

Traumatic ICH occurs in 40 percent of severe traumatic brain injuries and may result in primary injury to the epicenter, as well as to the surrounding brain tissue. There are an estimated 120,000-150,000 severe traumatic brain injuries per year in the U.S., with tICH representing 36,000-60,000 of that number. Those numbers are even higher when including mild to moderate traumatic brain injuries.

Currently, there is no recognized standard of care for surgical management of tICH due to a lack of existing evidence; surgical care is often guided by individual clinical judgment on a case-by-case basis. The evidence presented in this new study suggests that surgical options exist through the use of a novel surgical approach and technologies, which may offer benefits to patients.

The second abstract included a four-patient retrospective series and is the first demonstration that removal of a hemorrhage using MIPS techniques and technologies may positively influence cerebral metabolism in the region surrounding the ICH, as illustrated through the use of cerebral microdialysis in three patients with spontaneous ICH and one patient with tICH.

"We were able to demonstrate statistical improvement in cerebral metabolism in the perihematoma area after evacuation of the hemorrhage," Chen said. "Although these patients had normal intracranial pressure (ICP), other areas of the brain were adversely affected by the hemorrhage. We don't know if this is caused by local mass effect or the toxic byproducts of the hemorrhage, but it is likely that both are involved."

Tissue damage and brain swelling still occur even when hemorrhagic blood is removed from the brain, added Chen. In this study, brain metabolic measurements were abnormal immediately pre- and post-intervention, but they corrected themselves 24 hours after intervention.

Spontaneous intracerebral hemorrhage (sICH) and tICH are major clinical challenges in the intensive care unit. They are typically associated with high levels of early mortality and long-term morbidity.

“These preliminary reports are exciting, and we look forward to further research findings in this area,” Bailes said. “As more centers get more experience using the MIPS approach, the potential benefits to how we will treat traumatic and spontaneous ICH will become even more clear.”

NICO Corporation is a leader in modern interventional technologies used in a new way of performing less invasive brain surgery for subcortical and skull base lesions, including hemorrhagic stroke – the deadliest and most costly and debilitating kind of stroke. It is an outcomes-based company dedicated to revolutionizing minimally invasive neurosurgery through evidence-based, improved clinical and economic outcomes. More than 80 peer-reviewed independent papers, posters and abstracts have been published suggesting improved clinical outcomes for appropriate patients and economic benefit to the healthcare institution using the technologies.

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