

Introduction

A number of minimally invasive surgery techniques and devices have emerged to treat patients with intracerebral hemorrhages (ICH). Artemis is a novel neuro evacuation device that aspirates the hematoma while connected to the Penumbra Aspiration Pump. During the procedure, the device itself is positioned within the working channel of a neuro endoscope through a 19 F sheath.

Methods

We report our initial experience using the Artemis device with 3 patients from October to November 2017.

Results

The Artemis device was used for 3 patients (mean age 65 ± 8.2 years, 66.7% male), all with a past medical history of hypertension. 2 patients had a predominantly deep basal ganglia hemorrhage and the other one had 2 predominantly lobar hemorrhages in the frontal and parietal lobes at the same time. Median time to evacuation from symptom onset was 18 hours (range: 5 hours, 8 minutes to 73 hours). The average preoperative and postoperative hematoma sizes were 23.2 ± 18 cm3 and 1.2 ± 1.1 cm3 respectively, with a mean 96% evacuation rate. The average time of activation of Artemis pump was 54 minutes. Bleeding vessels were encountered in 1 (33.3%) case and they were all addressed with cautery. Clinical follow-up with this cohort is still in progress.

Conclusions

The Artemis device effectively evacuated a variety of intracerebral hematomas. Our evacuation rate compares favorably with other minimally invasive techniques. Long term studies analyzing a larger patient population are necessary to understand the full utility of the device.

Learning Objectives

1. Understand how the Artemis device operates.
2. Assess the efficacy of the Artemis device for ICH evacuation.
3. Anticipate future studies that analyze the clinical efficacy of the device.

References

Kellner, C. P., Chartrain, A. G., Nistal, D. A., Scaggiante, J., Hom, D., Ghatan, S., Bederson J. B., Mocco, J. (2018). The Stereotactic Intracerebral Hemorrhage Underwater Blood Aspiration (SCUBA) technique for minimally invasive endoscopic intracerebral hemorrhage evacuation. J Neurointerv Surg. doi:10.1136/neurintsurg-2017-013719