SCUBA: A Novel Technique for Management of Aneurysmal Intracerebral Hemorrhage

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Disclosures

I, or any of the authors responsible for this presentation, do not have any financial or organizational relationships with commercial interests or other entities.
Introduction

• The Stereotactic Intracerebral Hemorrhage Underwater Blood Aspiration (SCUBA) technique has been well established in the literature as a safe and effective technique for endoscopic evacuation of intracerebral hematoma (ICH).

• SCUBA has primarily been studied in the hypertensive ICH population, but has not been evaluated in a patient population with intracerebral hemorrhage due to aneurysmal rupture.
Methods

• From our study population of patients who underwent the SCUBA technique for ICH evacuation, we identified patients found to have ruptured aneurysms that had caused intracerebral hemorrhage.

• Patients were excluded from this cohort if their ICH was due to a reason other than suspected aneurysmal rupture, verified by computed tomography (CT) angiography. Patient demographics collected include age, sex, smoking status, anticoagulation/anti-platelet/anti-hypertensive status.

• Radiographic and clinical parameters, as well as outcome variables were collected for each patient included in this study.
Results

• Four patients were identified who underwent the SCUBA technique for ICH evacuation due to a ruptured aneurysmal bleed.
• Three patients were male, with an average age of 48.8 years.
• One patient was a smoker, and no patients were on antiplatelet/anticoagulant therapy prior to presentation.
Results

- Three patients’ aneurysms originated from the right middle cerebral artery (MCA), and one from the left ophthalmic artery.
- Three patients’ initial CT scans had intraventricular hemorrhage (IVH) and 75% of patients received an external ventricular drain (EVD).
- All patients’ ICH were located in the frontal lobe.
- Patients underwent the SCUBA procedure for an average of 1.32 hours.
- Patients stayed in the ICU for an average 25.7 days. There were no deaths in this cohort.
Discussion

• Limited role for SCUBA following aneurysmal rupture
  • Must have favorable characteristics of intracerebral hemorrhage.
• Half of the cohort required a decompressive hemicraniectomy
  • Challenge of identifying who can benefit from minimally invasive technique
• Larger samples of aneurysmal ICH undergoing minimally invasive clot evacuation is required for further data collection and patient outcomes.
Summary Points

• In our SCUBA population, we identified a cohort who benefitted from endoscopic ICH evacuation following aneurysm rupture.
• SCUBA may be a useful technique in the surgical management of aneurysmal intracerebral hemorrhage.
• Further investigation is required for this expanded use of the SCUBA technique.