



ARTICLE OF THE MONTH

Identification of Factors Associated with Morbidity and Postoperative Length of Stay in Surgically Managed Chronic Subdural Haematoma Using Electronic Health Records: A Retrospective Cohort Study

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Welcome to the August 2020 edition of the SNACC Article of the Month. The article by Stubbs et al highlighted here uses electronic health record data to look at in-hospital morbidity and associations between intraoperative events and postoperative stay in patients with chronic subdural hematomas evacuated surgically. Our commentators this month are Drs. Wan Zakaria Wan A and Val Luoma.

Dr. Wan Zakaria Wan A is an anesthesiologist from University Malaya, Malaysia. She is a Clinical Fellow in Neuroanesthesia at the National Hospital for Neurology and Neurosurgery, University College London Hospitals NHS Foundation Trust, London, United Kingdom. Dr. Val Luoma is a Consultant Neuroanesthetist at the National Hospital for Neurology and Neurosurgery. Her clinical interests include anesthesia for complex spine and neurovascular surgery. She is a member of the SNACC Trainee Engagement Committee and the Scientific Affairs Committee.

As always, readers are welcome to join us for further discussion and feedback on the SNACC [Twitter](#) feed, or on [Facebook](#).

- Oana Maties, MD, Amie Hoefnagel, MD, Shilpa Rao, MD, and Nina Schloemerkerper, MD

Commentary

By Wan Zakaria Wan A, MD and Val Luoma, MBChB, FRCA

Chronic subdural haematoma (cSDH) is a common neurosurgical disease of older patients and often considered a 'sentinel life event' due to the associated increased 1-year mortality.

A recent epidemiological study over a 26-year period from 1990 to 2015 in Finland, reported a doubling in the overall incidence of cSDH, with a higher incidence in the population aged 80 years and older¹. Despite effective neurosurgical intervention with improvements in neurological outcome, there are still significant non-neurological morbidities which are reflected in the high number of patients (up to 26%) with an unfavourable modified Rankin Scale (mRS) score at the time of discharge.^{2,3,4} The recurrence rate for cSDH is approximately 10% and mortality is high, with 6-month mortality up to 26% and 1-year as high as 32%^{5,6}. The high incidence of morbidity and mortality in this patient group has raised awareness amongst healthcare providers of the need to focus on all aspects of perioperative care, including pre-operative optimization, and reduction of postoperative complications.

This well-designed retrospective study of 530 patients with cSDH provides a detailed evaluation of inpatient care in surgically managed patients. The authors not only modified the Electronic Postoperative Morbidity Score (ePOMS) to improve detection of neurological morbidity, but also identified intraoperative events that may cause secondary brain injury allowing identification of factors that may impact patient outcome. Complications are clearly defined using ePOMS and the carefully planned methodology and application of appropriate statistical analysis minimize the effects of heterogeneity, thereby enabling a reliable comparison and a more accurate interpretation of data. This study highlights the high incidence of post-operative morbidity (over 50%) and the degree of clinical deterioration in patients between admission and surgery using ePOMS. It also notes the premorbid risk factors associated with increased length of stay, notably pre-operative anticoagulation and cognitive dysfunction. As mentioned by the authors, the main limitation of this study was the difficulty with capturing all information from the electronic health records and ensuring accurate coding.

This study provides a clear baseline from which to build future quality improvement initiatives and research proposals to ensure we are providing the highest standard of care for patients with cSDH. A number of quality improvement or audit networks already exist for other surgical pathologies such as the UK-based hip fracture (<https://www.nhfd.co.uk/>) and emergency laparotomy (<https://www.nela.org.uk/>) networks. The framework and learning from these could be used to further improve the care of patients with cSDH. Although cSDH is a common neurosurgical pathology, there is still limited evidence on the best perioperative care to ensure excellent patient outcome.

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