anterior soft tissue neck thickness at hyoid, pretracheal and vocal cords level, and clinical parameters of airway examination.
Results: Twenty-six acromegaly patients and 25 nonacromegalic (nonfunctioning pituitary tumor) patients were enrolled during study period. Ultrasonographic measured tongue thickness at SM level was significantly higher in acromegalic patients than controls (4.4 ± 0.82 cm vs. 3.80 ± 0.74 cm, $P = 0.017$). Tongue width (5.6 ± 0.79 cm vs. 5.1 ± 0.86 cm, $P = 0.027$) and oral cavity height (5.5 ± 0.94 cm vs. 4.7 ± 0.86 cm, $P = 0.007$) were also significantly higher in acromegaly patients than controls. In acromegaly group, majority of patients had higher grades in upper lip bite test (grades I/II/III—5/9/12 vs. 22/2/1, $P < 0.001$) and modified Mallampati grades (grades I/II/III/IV—4/5/7/10 vs. 8/12/4/1, $P = 0.006$) as compared with controls. In our study cohort, we found difficult laryngoscopy in 19% (5/26 patients) of acromegaly patients compared with 8% (2/25 patients) in controls.
Conclusions: Coherence is noted between clinical parameters of airway examination and airway USG measured parameters in the cohort of acromegaly patients. Tongue thickness measured using USG at submandibular level was more in acromegaly patients which is one of the predictor of difficult laryngoscopy. However, we suggest a study with larger number of acromegaly patients is needed for building better evidence.

References:
1. Schmitt H, Buchfelder M, Radespiel-Tröger M, et al. Difficult intubation in acromegalic patients: incidence and predictability. *Anesthesiology*. 2000;93:110–114.
2. Reddy PB, Punetha P, Chalam KS. Ultrasonography—a viable tool for airway assessment. *Indian J Anaesth*. 2016;60:807–813.

[SNACC-82] Psychiatric Outcomes After Exposure to Surgery and Anesthesia After Concussion due to Mild Traumatic Brain Injury (TBI) in Pediatric Patients: An Exploratory Retrospective Observational Study

Hunter Guevara L, Abcejo A. *Mayo Clinic, Rochester, MN.*
Introduction: Concussion represents a vulnerable neurological state for any patient, but even more so in children and adolescents. Pediatric patients with concussions are at an increased risk for new psychiatric disorders, including depression and behavioral disorders.[1] The perioperative environment, including anesthesia, may carry risk of neurophysiological stress.[2] We recently showed that anesthesia and surgery after a concussion are not uncommon—occurring within a year after injury in up to 15% of concussed patients.[3] We seek to determine the impact of anesthesia on the development of psychiatric illness following concussion in pediatric patients. We describe the postoperative psychiatric outcomes in a case series of 191 pediatric patients undergoing an anesthetic within 3 months of mild TBI. Primary outcomes include the development of major depressive disorder (MDD), attention deficit hyperactivity disorder (ADHD), or posttraumatic stress disorder (PTSD) within 10 years of mild TBI diagnosis.
Methods: Patients above 18 years old with a concussion and anesthetic between 2003 and 2017 were identified and the medical record was examined to verify date of injury, confirmation, and mechanism of mild TBI, and date/type of anesthetic administration. Psychiatric illness diagnosed after date of injury, including MDD, ADHD, or PTSD, were identified manually. Exclusion criteria included patients without consent and patients with preinjury cognitive or psychiatric illness.
Results: The most common type of injury was sports injury (40.8%), followed by motor vehicle accident (39.3%), fall (12.0%), assault (4.7%), and other (2.1%) which consisted of seizure or suicide attempt. The most common type of anesthetic used was general anesthesia (81.7%). Monitored anesthesia was second most common (11.5%), followed by general anesthesia with regional block (2.1%), and primary regional anesthesia (1.6%). While MDD was diagnosed before injury in 28 patients (14.6%), MDD was newly diagnosed in 14 patients (7.3%) after head injury. ADHD was diagnosed in 21 patients before injury, while it was diagnosed in 3 patients after injury. A new diagnosis of PTSD occurred in 5 patients after injury. Interestingly, 58 patients (30.3%) had a history of any psychiatric diagnosis before injury, while 36 patients (18.8%) were diagnosed with a psychiatric illness after the date of injury.
Conclusion: While more pediatric patients with anesthetic exposure within 90 days of concussion had a known psychiatric illness before injury, there remained a significant number of patients who developed a new psychiatric illness after exposure to anesthesia. Further work is warranted to elucidate the timing between psychiatric illness diagnosed after head injury, associations with the specific type of anesthetic used, as well as PACU outcomes.

References:
1. Brent DA, Max J. Psychiatric sequelae of concussions. *Curr Psychiatry Rep*. 2017;19:108.
2. Doshi H, Wiseman N, Liu J, et al. Cerebral hemodynamic changes of mild traumatic brain injury at the acute stage. *PLoS One*. 2015;10:e0118061.
3. Abcejo AS, Savica R, Lanier WL, et al. Exposure to surgery and anesthesia after concussion due to mild traumatic brain injury. *Mayo Clin Proc*. 2017;92:1042–1052.

[SNACC-83] Wide Interpatient Variability for Propofol is Shown Independently of Calculate or Measure Concentrations

Ferreira A*, Nunes C†, Amorim P‡. **CHP, Gondomar, Jovim, Portugal*; *†Universidade Aberta, Porto, Portugal*; *‡Centro Hospitalar do Porto, Porto, Portugal.*
The importance of personalized medicine is becoming increasingly recognized as high variability is identified among patients in what regards their response to drugs. It is assumed that propofol has a wide interpatient variability, but such variability has not been clearly quantified. Quantifying and understanding the variability in propofol requirements for induction may be important to better achieve individual titration of anesthesia. We did a study to assess inter-patient variability in propofol requirements for loss of consciousness (LOC). Under IRB approval, 64 patients undergoing neurosurgeries received 1% propofol for induction at 3.3 mL/kg/h until LOC (modified OAAS score of 0). A Fresenius TCI pump was used, and propofol cerebral concentrations (Ce) calculated (Schnider's Pk model). At LOC the amount of propofol given and the Ce were noted and the pump was switched to TCI mode. After LOC and steady-state (in a lower concentration than Ce at LOC) was achieved we collected a blood sample. The blood was then analyzed, and the propofol concentration was measured in plasma. Rugloop software collected data.
Statistics: Student t test. Data are mean ± SD. Propofol Ce at LOC was 4.2 ± 1.7 μg/mL, ranging >6-fold and the measured concentration was 1.7 ± 1.3 μg/mL ranging 11-fold. Propofol Ce and measured concentrations at LOC had the same distribution ($P > 0.9$). Variability, as the ratio between SD and the mean, was 39% for propofol Ce at LOC and 79% for propofol measured dose in at LOC. Calculated and measured concentrations are not are not statistically different ($P > 0.05$). We show a wide interpatient variability for propofol, independently of calculate or measure concentrations which demonstrate the importance of individualized approach to dosing in anesthesia. Further research should be done to identify physiological variables that contribute to the observed interindividual variability.

Reference:
1. Available at: www.accessdata.fda.gov/drugsatfda_docs/label/2008/019627s046lbl.pdf.

[SNACC-84] Change in Functional Disability Evaluated Using the 12-Item WHODAS2.0 Questionnaire After Spinal Surgery: A Prospective Observational Study

Yoshimura K, Ida M, Naito Y, Kawaguchi M. *Anesthesiology, Kashihara, Nara, Japan.*
Introduction: Spinal diseases limits patients' living function both on motor and sensory impairment. Although surgery is one of the most optimum treatment, it is invasive and therefore whether it can improve patients' living function remains unknown. We aimed to evaluate the change in living function and the factors associated with postoperative functional disability using WHODAS2.0.
Methods: The clinical research ethics committee of our hospital approved this study. Patients aged 55 years and above who were