INTRODUCTION
Post-operative nausea and vomiting (PONV) can impact recovery, with an average incidence of 38.3% (1). Predictors include: female gender, history of PONV, non-smoker, perioperative opioids, and surgical procedure. Increases in intracranial pressure from Valsalva in craniotomies can result in tissue swelling, hemorrhage, or hematoma, compromising outcome (2). PONV the first 24 hours after craniotomy ranges from 10% to 74% (3).

In 1986 visiting China, J W Dundee was impressed by acupressure at Pericardium 6 (P6; aka Neiguan) for prophylaxis of hyperemesis gravid. Dundee conducted the first study of acupuncture at P6 on patients under general anesthesia(4). Further data demonstrated effectiveness of electrical stimulation at P6 in preventing and treating nausea and vomiting (2,5,6). While well-established in preventing PONV (6), P6 electrostimulation as protection in patients who failed pharmacologic therapy is unknown.

METHODS
Various methods of stimulating P6 may not differ in effectiveness, but do vary in ease and cost of implementation. Neuromuscular blockade monitors (NMBMs) stimulate P6 intra-operatively at a frequency of 1 Hz at one pulse/second throughout the anesthetic (7,8,9,10).

IRB approval was obtained for this case series, and appropriate consent was obtained from these patients.
DISCUSSION
PONV can increase discomfort, unwarranted side effects, and hospital costs (ie. readmission). Current pharmacological approaches for craniotomies focus primarily on selective serotonin receptor antagonists (5HT3) because of favorable safety profiles and lack of sedation (eg. ondansetron) (3). However, the cost of these drugs can be expensive. Single-drug prophylaxis of PONV has a very high failure rate, with the consequential addition of hundreds of millions of dollars annually to the cost of post-op care (11).

The effects of different classes of anti-emetics are additive; thus the standard of care for patients at moderate/ high risk of PONV is multi-agent prophylaxis (12). P6 stimulation should be considered as an adjunct due to low cost and ease of use. The results of this retrospective study suggest that while reducing the incidence of PONV overall, unilateral stimulation of P6 using NMBM also reduces the amounts of antiemetic medications required post-operatively. Furthermore, application of P6 electrostimulation was achieved without skin penetration, or inconvenience/ additional time for the anesthesia team, implying that this is a relatively simple method of preventing PONV that may be utilized.

CONCLUSION
This retrospective study suggests that P6 electrostimulation with NMBM may decrease PONV when used as an adjunct to pharmacological prophylaxis. Furthermore, its use requires minimal training and additional time or expense. However, a randomized controlled trial is needed to verify that P6 electrostimulation decreases PONV beyond that which would be achieved with pharmacological prophylaxis in the at risk population.

References:


150736 - CAN WE INTUBATE WITH THE LEKSELL HEAD FAME IN-SITU?

Author(s)
Melissa A. Brockerville
University of Toronto
Presenting Author

Lashmi Venkatraghavan
Department of Anesthesia, Toronto Western Hospital
Primary Author

Co-Authors(s)
Zoe Unger - University of Toronto
Nathan Rowlands - University of Toronto
Francesco Sammartino - University of Toronto

INTRODUCTION
Deep brain stimulation (DBS) insertion involves the placement of electrodes into specific deep brain structures that are identified using sterotactic frame-based imaging, microelectrode recordings and macrostimulation of the awake patient. The electrodes are placed in the brain structures via burr holes while the patient is in the operating room; for the procedure, the patient is given local anesthesia with monitored anesthesia care (MAC) or conscious sedation (1-4)). The Leksell headframe used for sterotactic frame-based imaging remains in situ during the procedure. The frame provides limited access to the airway because it covers all or part of the mouth and nose and limits neck extension (2-4)). There are currently no studies in the literature examining the ease of emergency airway management with a laryngeal mask airway (LMA) or of intubation using direct laryngoscopy (DL) and video laryngoscopy (VL) with the Leksell headframe in situ.

METHODS
The study was approved by the local research ethics board. Twenty-six anesthesia-provider volunteers were recruited. A Leksell sterotactic headframe was placed on a mannequin in the OR. The OR table was placed in a semi-sitting position (30 degrees) to simulate the standard surgical position. The anesthesia providers were asked to insert a #3 LMA with the Leksell headframe in situ. The OR table was then leveled. Next, anesthesia providers were asked to intubate the mannequin using DL and VL (CMAC®) with the Leksell headframe in situ. The anesthesia providers’ number of attempts and time to successful LMA insertion and intubation were recorded.
RESULTS
A total of 26 volunteers participated in the study (6 residents, 11 fellows and 9 consultants). Ninety-six percent of participants (25/26) were able to insert the LMA on the 1st attempt. The average time to insert the LMA was 38 seconds (+/-13 seconds). Ninety-six percent of participants (25/26) were able to intubate the mannequin with DL on the first attempt. The average time to intubate the mannequin with DL was 59 seconds (+/- 23 seconds). All participants were able to intubate the mannequin on the 1st attempt using VL, and the average time taken to intubate was 56 seconds (+/- 29 seconds).

DISCUSSION
This study provides useful information for anesthesia providers about the ease of emergency airway management during surgery for DBS insertion in patients with a Leksell headframe in situ. It is the first study to report that LMA insertion and intubation with DL and VL can be performed with the Leksell headframe in situ.

References:

INTRODUCTION
Macroglossia is a potentially devastating airway complication (1-2). The purpose of this study was to review published case reports of macroglossia following neurosurgical procedures, possible causes, treatment, and prevention.

METHODS
A literature review was conducted using Pubmed (1974-2015). Additional articles were manually located by reviewing article references. Twenty articles were reviewed.

RESULTS
A total of 26 cases of macroglossia following neurosurgical procedures were reported. Seventy percent occurred after posterior fossa/suboccipital craniotomies. Results are in Table 1. Duration of macroglossia varied, lasting from 24 hrs to 3 months. Fourteen patients had macroglossia lasting ≥ 1 week. Information about duration was missing for 8 patients. In 13 cases the swelling was isolated to the tongue. There was documentation that four patients had bite blocks, 3 patients had oral airways and 6 patients had throat packs. Complications due to macroglossia included airway obstruction, difficult intubation, need for emergency and late tracheostomy, prolonged intubation, tongue necrosis and need for glossectomy. Treatment in case studies included head up position, steroids, analgesics, and keeping the tongue moist to prevent desiccation (2-6).

DISCUSSION
The incidence of macroglossia has been reported at 1%. We found that macroglossia was most commonly reported after posterior fossa/suboccipital craniotomies in the parkbench, sitting and prone positions. The pathophysiology of macroglossia is likely multi-factorial. Potential contributing factors may include local mechanical compression interfering with venous and/or lymphatic drainage and/or arterial inflow, regional venous and/or lymphatic obstruction, local or regional venous thrombosis, reperfusion injury, and neurogenic origin. As there is no standardized treatment for macroglossia, prevention measures should include avoiding use of an oral airway, use of a soft bite block, avoidance of mouth crowding and extreme flexion of the head against the chest.
or shoulder. The onset of macroglossia can be acute or delayed. Prevention is the best way to avoid the potentially serious complications of macroglossia (2-6).

References:

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