Society for Head and Neck Anesthesia (SHANA) Newsletter

Issue 1, April 2013

President's Report from the SHANA Meeting

Dear SHANA Members,

We are now into our second year as a society. October's annual meeting was a great opportunity to share our achievements of the past year, and look toward our future opportunities and challenges. It was great to see so many of you in attendance and hear your views regarding our development.

The year saw the launch of our society website (www.shanahq.com) our primary point of contact for membership enquiry and interaction through forums. The site is a rich source of educational content exploring the perioperative care of patients undergoing head and neck surgeries. Much of the content is exclusive to SHANA members, including a downloadable library of noteworthy articles, and an image gallery with access to comprehensive advice and guidance.

We have continued to recruit expert opinion leaders to our education, scientific, and communications boards. These boards guide our development and endeavors, providing the content to our site and forums. Our membership has increased to become truly global, with members from anesthesia and surgical specialties on all major continents. Our society moves

Inside this Issue

Going Global in 2013

Did you know that SHANA is one of the fastest growing Societies in Medicine? There are currently 211 members from 20 countries. With generous financial support from the University of Michigan Medical School, the Cleveland Clinic, and Stanford University, SHANA has been able to develop a state-of-the-art website. Visit us at www.SHANAHQ.com to learn more.

toward our goal of providing a great environment to stimulate communication and fellowship between everyone with an interest in the perioperative and anesthetic care of patients undergoing head and neck surgery.

So as an existing member, how can you contribute to our success? Please spread the word about our society, encourage membership to other anesthesiologists and surgeons in your departments, and contribute to our forums.

Best wishes,

David

David Healy, M.D., is an anesthesiologist committed to the improvement of medical care received by patients undergoing head and neck surgeries. As the inaugural President of the Society for Head and Neck Anesthesia (SHANA), he wants to link anesthesiologists to encourage communication, education and coordinated scientific endeavor.

Dr. Healy is the Director of Head and Neck Anesthesia at the University of Michigan in Ann Arbor, where he has been a faculty member since 2005. Raised and educated in Cambridge, England, he completed his medical school training at St Bartholomew's and The Royal London Hospital in 1996. He completed both Internal Medicine and Anesthesiology boards in the UK, becoming both a Member of The Royal College of Physicians (MRCP) and Fellow of the Royal College of Anesthetists (FRCA). His interests include novel airway device development and performance assessment and clinical outcomes research.

Dr. Healy has lectured, published book chapters and original articles on airway management and devices. He is the course director of the Annual Interdisciplinary Airway Management Course of the University of Michigan. He is an advisory board member of M-HEAL (Michigan Health Engineered for All Lives), a biomedical engineering group that applies novel engineering solutions to the health problems of the developing world.

Address all comments, questions, letters, and suggestions to:
to:

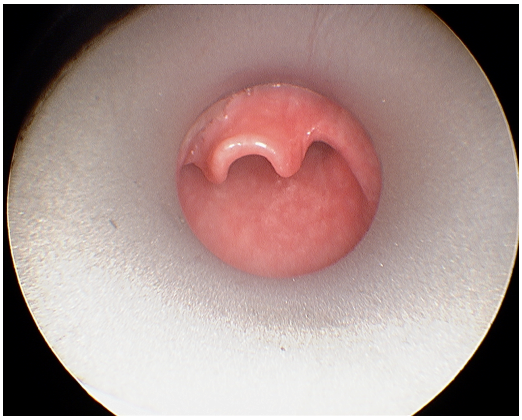
Michael Chen, M.D.
300 Pasteur Drive, H3580
Department of Anesthesia
Stanford University School of Medicine
Stanford, CA 94305
e-mail address:
2006chen@stanford.edu
Phone: 650-723-5728

Case Report: Emergent Tracheostomy in an "Un-intubatable" Patient with Hunter Syndrome

Zoel A. Quinonez, M.D. and Louise Furukawa, M.D.

Introduction

Patients with Hunter syndrome (mucopolysaccharidosis II), an X-linked recessive lysosomal storage disease, provide unique airway management challenges to the pediatric anesthesiologist. Accumulation of glycosaminoglycans (GAG) throughout the tissues of the body results in macroglossia, subglottic stenosis, tracheomalacia, pulmonary restriction, cardiomyopathy, hepatosplenomegaly, joint contractures, and variable degrees of CNS involvement, causing developmental delay. A thick short neck, limited TMJ mobility, and possible cervical spine instability make airway management in these patients all the more challenging. Most patients with Hunter syndrome die in the second decade of life as a result of airway or cardiac compromise. While largely thought of as inhabiting only the world of pediatric anesthesiology, some patients with more attenuated forms of the disease have been known to live into the fifth and sixth decades of life. With improved morbidity and mortality from enzyme replacement therapy (ERT) and the emerging benefits of hematopoietic stem cell transplantation (HSCT) for the treatment of lysosomal storage diseases, we may see an increasing number of patients surviving to adulthood. As anesthesiologists, we should thus be familiar with the anesthetic challenges presented by these patients. We highlight this case of an emergent surgical tracheostomy in a patient with Hunter syndrome.



View with rigid bronchoscope.

Case

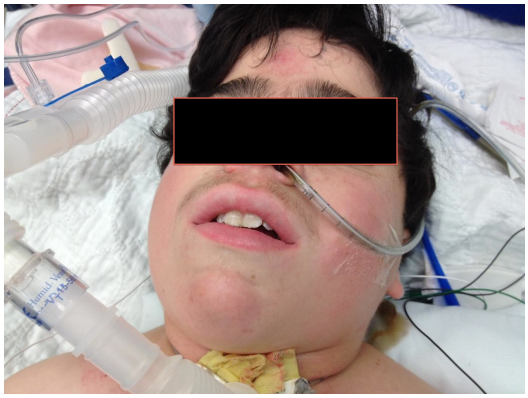
We were called to anesthetize a 40 kg, 11-year-old boy with MPS II (Hunter syndrome) and subglottic hypertrophy/stenosis for emergent tracheostomy. The surgeon states that he would like to perform an "awake tracheostomy".

The patient had presented two days earlier with an upper respiratory infection and had rapidly progressive respiratory failure. He had been diagnosed with Hunter syndrome six years previously when he presented for dental restoration after failing to be intubated at a community hospital. He was seen by genetics and deemed a good candidate for stem cell transplantation. His initial intubation for dental repair prior to transplantation proved very difficult. An anesthetic performed two years after transplantation revealed improved airway anatomy. However subsequent anesthetics revealed a progressively difficult airway. Six months prior to the present admission, the patient underwent microdirect laryngoscopy and bronchoscopy due to complaints of noisy breathing. This exam by an experienced pediatric otolaryngologist was notable for failure to visualize the larynx by both flexible and rigid bronchoscopy. Prior to admission, the patient had been in relatively good health, with a problem list notable for developmental delay, noisy breathing, hypertension controlled with clonidine, and an echocardiogram notable for mild mitral regurgitation, bicuspid aortic valve, and preserved ventricular function.

The patient was being supported in the pediatric intensive care unit (PICU) with nasal BiPAP (biphasic positive airway pressure) with pressures 18/12 on 100% O_2. Inhaled Nitric Oxide (iNO) at 20ppm had been empirically added in the face of oxygen saturations in the 80s. Improvement in oxygenation was noted. On physical examination, the patient had mild suprasternal retractions, but otherwise appeared in no distress, sedated with both propofol (40 mcg/kg/min) and dexmedetomidine (2.0 mcg/kg/hr) infusions. His vital signs included a non-invasive blood pressure reading of 111/76, HR 70 bpm, and oxygen saturations of 80-95%, with his arterial blood gas demonstrating a PaO_2 of 50 mmHg on a FiO_2 of 1.0.

The patient's developmental delay precluded an awake surgical approach. Given his known difficult airway, we felt strongly that manipulation of his airway, either for laryngeal mask airway insertion or endotracheal intubation, could lead to trauma, laryngospasm, and potential loss of airway. We chose to apply topical anesthesia with EMLA cream to the surgical site and subsequently moved the patient to the operating room (OR) with the help of the respiratory therapist and a nurse to transport the patient's infusion pumps and the BiPAP machine. Prior to leaving the PICU, glycopyrrolate 0.2mg IV was administered for its antisialogogue effect.

Once in the OR, and on standard monitors, we began administering further sedation with intravenous boluses of 0.5 mg/kg of ketamine titrated carefully to provide adequate sedation while closely monitoring oxygenation and ventilation. To provide ventilatory support, we maintained the patient on his BiPAP and iNO, and held an infant mask over the patient's mouth at a CPAP of 12 mmHg to supplement airway stenting. This maneuver increased the patient's SpO_2 to 100%. The patient tolerated infiltration of local anesthesia, transtracheal lidocaine, and the subsequent tracheostomy with a total of 140 mg of intravenous ketamine and the continued propofol and dexmedetomidine infusions. The surgeon performed a "starplasty tracheostomy," suturing tracheal mucosa to skin due to concerns of the patient potentially pulling out his tracheostomy tube in light of his developmental delay. The patient remained stable for the rest of the case. Respiratory parameters remained stable and transport back to the PICU was uneventful.



The patient status-post tracheotomy. Note the typical coarse facial features of Hunter syndrome.

Discussion

As previously mentioned, GAG deposition throughout the body in patients with Hunter syndrome complicates airway management. In the setting of acute respiratory decompensation, a surgical airway may be the only option and our role may simply be to support the patient for surgical airway access. This patient provided several challenges, but our main concern regarded both the transport of this patient to the operating room and our decision to either obtain a secure airway or simply provide non-invasive airway support until the tracheostomy was in place.

Given that the patient was in a shared and underequipped PICU room, we felt that the OR provided a more controlled environment for the procedure. The patient was sufficiently sedated to tolerate transport, and we were comfortable providing additional sedation with ketamine if necessary. Since the patient was stable on his current noninvasive ventilatory support, we decided to transport the patient while maintaining the status quo, that is, on his current infusions, BiPAP settings, and iNO.

Regarding airway management, there was brief discussion about attempting intubation with a flexible fiberoptic bronchoscope, but given the expected difficulty, recent failure to visualize the larynx, and impending respiratory arrest, we kept it simple by maintaining spontaneous ventilation via his current non-invasive settings, with some additional oropharyngeal CPAP (continuous positive airway pressure). In this manner, we avoided traumatizing an already difficult airway. The surgeon was in the operating room prior to induction of further anesthesia in case a surgical airway was needed sooner than expected. One might even consider this management decision tree simpler than if the patient presented as an outpatient for elective tracheostomy in that the options were extremely limited.

In conclusion, we were able to successfully manage this difficult airway with a "less is more" approach, honest discussion with the surgeon as well as family, and anticipation of problems that fortunately resulted in a successful surgery tolerated well by the patient.

References

1. Frawley G, Fuenzalida D, Donath S, Yaplito-Lee J, et al. A retrospective audit of anesthetic techniques and complications in children with mucopolysaccharidoses. Pediatr Anesth 2012; 22: 737-44.
2. Valayannopoulos V, Wijburg FA. Therapy for the mucopolysaccharidoses. Rheumatol 2011; 50: v49-v59.
3. Wraith JE, Scarpa M, Beck M, et al. Mucopolysaccharidosis type II (Hunter syndrome): a clinical review and recommendations for treatment in the era of enzyme replacement therapy. Eur J Pediatr 2008; 167: 267-77.
4. Yoskovitch A, Tewfik TL, Brouillette RT. Acute airway obstruction in Hunter syndrome. Int J Pediatr Otorhinolaryngol 1998; 44: 273-78.

Meeting Minutes: The Annual Meeting of the Society for Head and Neck Anesthesia (SHANA)

Renaissance Room East, Washington Renaissance Hotel, Washington, DC
October 12, 2012

President's Report:

Dr. Healy addressed the attendees, highlighting the mission of the society to:

1) Link and forge relationships among ENT surgeons and anesthesiologists
2) Build the subspecialty of head and neck anesthesia
3) Promote education and research in the field
4) Facilitate communication and collaboration among stakeholders
5) Consensus building in the care of patients

In his year in review, he reported on SHANA progress, in terms of the website launch, collaboration with the elected officers to form the infrastructure for the society, start activities on different boards, and form liaisons with related organizations and entities. He also reported on his opportunity to announce the launch of this new society at the Society for Airway Management annual meeting in Toronto Canada, encouraging membership and collaboration.

Secretary/ Treasurer Report:

In his year in review, Dr. Abdelmalak reported on:

- The leadership's efforts in designing the SHANA logo, recognizing the efforts of the Cleveland Clinic (Dr. Abdelmalak) and Stanford University (Dr. Nekhendzy) on this endeavor
- Accepting membership applications, sending welcome letters to new members, and maintaining a roster and database of members. As of a few days prior to the meeting this process is being managed by the SHANA newly launched website and its webmaster, Yan Pulavskiy.
- Drafting the Society's bylaws, which were reviewed and ratified by the elected leadership to their current format which have been circulated via the list-serve to all members for comments and approval.

Educational and Communication Advisory Board's Report:

Dr. Nekhendzy, reported on the activities that went into the design and launch of the website. He went into great details explaining the functionality of different aspects and sections of the website, with an emphasis on the educational offerings presented, SHANA forum, and list-serve, and encouraged all to visit the site and make use of it. He also reported on the site's success thus far in the few days since it was launched with an extraordinary number of hits, and a number of new members that the website attracted thus far.

He also elaborated on the mission and goals of the education advisory board as presented in its respective page on the website.

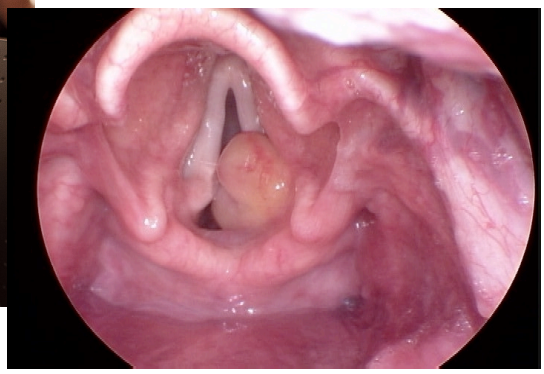
Research Advisory Board Report:

Dr. Doyle presented some of the research questions that remain un-answered which this board can and will start addressing . Examples include: the optimal fluid management in head and neck surgery, the use or avoidance of muscle relaxants, nerve function monitors, and the long term outcomes of head and neck surgery patients.

JOIN SHANA ! FREE ANNUAL MEMBERSHIP THRU JUNE 30, 2013

http://www.shanahq.com/main/content/membership

Anesthesia residents practicing fiberoptic skills at a Stanford CME Airway Workshop.



SHANA

Society for Head and Neck Anesthesia

SHANA

Society for
Head and Neck Anesthesia

www.shanahq.com