

DEPARTMENT OF ANESTHESIA NEWSLETTER

Focus on the History of Anesthesia

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Upcoming Events

June 13, 2013: Resident Research Exchange Day with the University of Western Ontario at the University Club

June 15, 2013: Resident versus Staff Baseball game in Alexander Park, Hamilton

June 21-24, 2013: Canadian Society of Anesthesiologists at the TELUS Convention Centre in Calgary, Alberta

June 27, 2013: Reach for the Top at the Waterfront Restaurant (formerly the Hamilton Yacht Club)

September 26-28, 2013. International Conference on Residency Education (ICRE) in Calgary, Alberta

September 26-29, 2013. Ontario Medical Association, Anesthesia meeting at Sheraton on the Falls in Niagara Falls, Ontario

October 12-16, 2013. American Society of Anesthesia Meeting at the Moscone Center in San Francisco, California

The History of Anesthesia in Hamilton

Part 1 in a series of 3: Tracing the Early Origins of Anesthesia
By Dr. Joel Hamstra

The McMaster University Department of Anesthesia came into existence in the fall of 1972. No one really knows the exact date, but perhaps it can be best dated by a clinical milestone; the first anesthetic given at McMaster University Medical Centre (MUMC) on October 12, 1972. To properly understand the history of anesthesia in Hamilton, we need to go back further than 1972.



First Operation Under Ether, Robert C. Hinckley, 1881-1894. Painting. Oil on canvas. 96 x 115 in (243 x 292 cm). Francis A. Countway Library of Medicine, Boston.

We need to go all the way back to October 16, 1846, in Boston Massachusetts. For the story of the McMaster University Department of Anesthesia cannot be separated from the larger story of the development of the medical specialty of anesthesia.

William Morton, a Boston dentist had been invited to Massachusetts General Hospital, on October 16 1846 by Dr. J. C. Warren, a surgeon, to demonstrate a process that he had been using in his dental practice. He had been extracting his patient's teeth, and they had not been feeling any pain! Morton had written a letter to Dr. Warren, asking for the opportunity to try his technique on one of Warren's patients undergoing surgery. Horace Wells, a one-time colleague of Morton's had previously attempted what Morton was about to do, three years before. Wells had used nitrous oxide as his anesthetic. When the surgical patient moaned during the operation, Wells was laughed out of the room. Morton was well aware of Wells' humiliation¹. Yet, he was confident that he would be successful.

The first surgery done under anesthesia* began late. The surgical team was assembled in the OR, but Morton was late, having been making some last minute adjustments to the anesthesia delivery apparatus. Gilbert Abbott, the patient, was scheduled to have a mass removed from the side of his neck. When Morton finally arrived, Abbot had already been strapped to the operating table and preparations were made for the surgery to begin. William Morton held his newly modified anesthetic inhaler (which he had never before tried on a patient) to Abbott's lips. As Abbott breathed the sulfuric ether, he lost consciousness. Dr. Warren completed the operation in a matter of minutes. The patient did not stir during the procedure, and upon awakening said he had no recollection of the event. Dr. Warren turned to the public gallery, full of onlookers and said "Gentlemen, this is no humbug!" Anesthesia was born.²³

Inhaled ether and chloroform remained the mainstays of surgical and obstetrical anesthesia for the next 50 years with little further development. At the turn of the century, German scientist August Bier (of Bier block fame) and his graduate student August Hildebrandt 'discovered' spinal anesthesia. Departing somewhat from the traditional *modus operandi* of medical innovators of the time, Bier and Hildebrandt first tried their technique on patients (rather than themselves). After demonstrating the success of intra-thecal cocaine as an anesthetic on 5-6 patients, they decided it was safe enough to try on themselves. Bier went first.

Unfortunately, the pair had not thought of every eventuality. The needle hub did not fit the syringe containing the local anesthetic (cocaine). While Hildebrandt looked around frantically to try and find a way to deliver the drug through the needle, Bier's CSF dripped onto the floor. When it was Hildebrandt's turn to be the test subject, the process went much more smoothly. The block was a success. Bier wrote "[we tested by applying] a strong blow to the shin with an iron hammer, and strong pressure and traction on the testicles, none of which provoked pain."

As surgery under the influence of anesthesia became common across North America and Europe, Hamilton most certainly would have followed along with this trend. Though there is little documented evidence of the history of anesthesia in Hamilton prior to the early 1900's, we can assume that Hamilton, given that it was a large city, and its proximity to an established medical school in Toronto, had an anesthesia practice similar to what we would find in other, similarly sized cities.



The First Use of Ether in Dental Surgery, 1846, Ernest Board, ca. 1912. Painting, Oil on canvas. 61.5 x 91 cm. Wellcome Library, London, England.

From the 1840's to the just prior to the beginning of World War I, there was little development in the practice of anesthesia. Most anesthetics consisted of a spontaneously breathing patient inhaling ether or chloroform. This one drug provided sedation,

analgesia and (relative) immo-

bility during surgery.⁴ There were no specialized gas delivery machines or advanced airway management devices.

During the First World War, Dr. J. Huerner Mullin, a general practitioner, was the first physician to use nitrous oxide for anesthesia in the city of Hamilton. Dr. Mullin eventually became the chief coroner for Hamilton. He had a particular interest in perioperative deaths, especially those in which anesthesia seemed to play a role.⁵

Hamilton received its first, full-time anesthesiologist in 1917. At that time, a full-time anesthesiologist was a rare phenomenon, for anesthesia was not yet a specialty in its own right. In fact, the first

Academic Chair in Anesthesia was set up in 1937 at Oxford University.⁶ The first hospital Department of Anesthesia was established in 1936 at the Massachusetts General Hospital.⁷ In the early 20th century, giving the anesthetic, or 'pouring the ether' was the job of the less senior member of the team. Also, many anesthetics were given outside hospitals. Stringer and Catton state that, "A gauze mask and a tin of ether were among the necessary items the V.O.N. carried in her bag"⁹ Therefore, when Dr. W. A. Cody became Hamilton's first full time anesthesiologist, he was somewhat of a rarity. However, he didn't remain alone for long. D. A. Warren joined him in 1922. These two physicians remained the only anesthesiologists until R.M. Stringer arrived in 1937. Though much of their time was devoted to anesthesia, these three men were members of the Department of Surgery.⁸

Major advances in medicine took place in the World War era as well as the decade that followed. Many of these were instrumental in helping to establish anesthesia as a specialty in its own right. There was a better appreciation of the value of regional anesthesia. New inhalational agents were developed as were IV anesthetic agents.⁹ In 1935, Dr. D. A. Warren introduced two new anesthesia 'firsts' to Hamilton; cyclopropane and endotracheal intubation¹⁰ Cyclopropane had been synthesized for the first time back in the 1880's,. However its anesthetic properties were not realized until they were discovered rather serendipitously by Drs. Lucas, Henderson and Brown, University of Toronto researchers looking for a novel anesthetic agent in the late 1920's. At that time, there was somewhat of a media storm in Toronto regarding the dangers of anesthesia. There had been several highly publicized deaths in the city that had been attributed to the adverse effects of anesthesia. In this climate, any new anesthetic agent faced intense scrutiny. To help convince their medical colleagues of the safety of cyclopropane, the three researchers enlisted Sir Frederick Banting (he of insulin fame)¹¹ With a group of physicians and administrators looking on, Banting was given cyclopropane, lost consciousness and awoke without any complications. Yet, the administrators were not convinced and they halted further clinical research with cyclopropane at the University of Toronto.

Cyclopropane remained the mainstay of general anesthesia for about 30 years after its introduction into clinical use.¹² Virginia Apgar, (originator of the APGAR score), was also a strong proponent of the use of cyclopropane for labour analgesia. Cyclopropane provided many advantages over the more traditional anesthetics ether and chloroform. It had a faster onset of action, had a more predictable dose response relationship and appeared to have a wider therapeutic window.¹³ However, Apgar was surrounded by obstetricians who felt that ether was a far better agent for labour analgesia than cyclopropane. Not willing to create a fuss, Apgar would use cyclopropane for her patients, but would also drop some ether on the drapes, allowing the room to fill with its distinctive smell and so masking her use of cyclopropane.¹⁴



Virginia Apgar. Photograph taken prior to 1968 by a staff photographer at New York World-Telegram & Sun. Library of Congress.

She serves as an example to all anesthesiologists; Do what is best for the patient without upsetting the surgeon (too much).

The second 'first' that Dr. D.A. Warren brought to Hamilton was the technique of endotracheal intubation. In the 50 years since ether anesthesia was demonstrated publicly, there had been little change in anesthetic practice. Patients inhaled anesthetic vapours spontaneously, surgeons operated with lightning

speed before the anesthetic wore off, and anesthesiologists had only their hands to maintain a patent airway. But in the first two decades of the 20th century, as surgeries began to take longer

and as the dangers of airway obstruction became more apparent, physicians administering anesthesia became more concerned about airway management during surgery.¹⁵ A variety of techniques were described and various devices were developed. Though endotracheal intubation had been described as far back as 1000 AD, the first person to administer an anesthetic agent through an endotracheal tube was Scottish surgeon William Macewen. The need to provide surgical care to those injured in conflict during World War I also forced the refinement of airway management techniques. By the end of the 1930's endotracheal intubation soon became the standard airway management technique during anesthesia.¹⁶

To be continued...

For a complete list of annotated references, please visit the History of Anesthesia website. http://fhs.mcmaster.ca/anesthesia/annotated_references.html

Research News



Congratulations to **Jessica Spence** (PGY3 resident) and her supervisor, **Dr. Anne Wong**, for receiving a grant from The Canadian Physician Health Institute for her study "Anesthesia Resident Peer Support Groups for Building Resilience and Preventing Burnout."

The Research Grant Standing Subcommittee of

the Canadian Anesthesiologists' Society (CAS) recently met to review submissions to the CAS 2013 Research Program. **Drs. Norm Buckley** and **Jason Busse** submitted an application entitled "A Network Meta-Analysis of Treatment for Chronic Neuropathic Pain Syndromes", which was approved for the Canadian Journal of Anesthesia Research Award. In providing this award the Canadian Anesthesiologists' Society gratefully acknowledges the support of the Canadian Journal of Anesthesia. Congratulations!

Contemporary Acupuncture News

From May 29 to June 3, 2013, in the city of Curitiba, in Brazil, **Dr. Alejandro Elorriaga Claraco**, Director of the McMaster University Contemporary Medical Acupuncture Program, participated as the key note speaker at the 9th South Brazilian Congress of Medical Acupuncture, attended by 200 Medical Acupuncture Specialists. In Brazil, there are over 10,000 "Acupuncture and Neurofunctional Medicine" specialists.

Since 2002, Dr. Elorriaga has presented the McMaster Neurofunctional Acupuncture model in Brazil in nine opportunities with great success. As a result, in 2009, an honorary membership in GEANF (Neurofunctional Acupuncture Study Group) was bestowed on him. GEANF founding di-

rector, Dr. Claudio Couto, has been invited to share the latest studies of this group, at McMaster University, in 2014. This is one of the many fruitful International collaborations the Contemporary Acupuncture Program has established during its 15 years of existence.

Dr. Elorriaga and Dr. Couto (right) are both members of the Editorial Board of *Acupuncture and Related Therapies*, a new international peer-reviewed journal that publishes high-quality research in acupuncture and its related therapies.



Awards and Acknowledgements



"Honor. Give. Transform." is a healthcare professional recognition program at Hamilton Health Sciences. Grateful donors and or patients can make a donation to a specific hospital or unit in honour of a healthcare provider whom they believe has gone "above and beyond" their regular scope of practice. The Department of Anesthesia

is proud to announce that **John Centofanti** (PGY3 resident) and **Martin Esken** (PGY5 resident) were given this prestigious honour by a recent patient at HHS. Congratulations to you both! For further information on this program please visit <http://www.hamiltonhealth.ca/hgt>



Resident's Corner

Andrew Heikkila (PGY 4) has been chosen to receive the HHS Medical Staff Association outstanding senior resident award. Andrew is also a CAS Resident Research Finalist Presenter at the CAS conference in Calgary at the end of June.

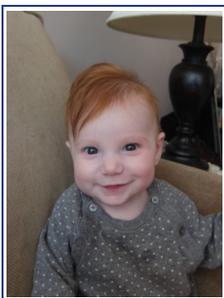
John Centofanti (PGY3) presented an abstract about his research in critical care daily goals checklists at the Society of Critical Care Medicine conference in Puerto Rico in January. Additionally, **Eugenia Poon** (PGY2), **Jaclyn Gilbert** (PGY2) and **John Centofanti** presented a poster "Pain Teaching in the Undergraduate Medical Program in the Faculty of Health Sciences at McMaster University: A Curriculum Review" at the Canadian Pain Society conference in Winnipeg in May.

Ada Hindle (PGY3) presented her poster, "*Web-based Learning for Emergency Airway Management: A Pilot Study of Feasibility and Educational Efficacy*" at the McMaster Annual Day in Faculty Development on May 1.

Jaclyn Gilbert will be taking on the role of Vice-Chair for the CAS Residents Section for the upcoming academic year.

Meghan Andrews (PGY4) and **Tristan Alie** (PGY4) were recipients of the St Joseph's Healthcare Department of Anesthesia Uganda Bursary. They will be traveling to Uganda in June to work in teaching hospitals in Mulago and Mbarara, under the supervision of **Dr. Stephen Ttendo**.

There have also been some new additions to the "extended anesthesia resident family":



Martin and Krista Esken welcomed baby Grace on November 22, 2012.



Leora Bernstein and Mayer Michalowicz welcomed twin daughters Tehila and Adena on December 23, 2012.



Nayer and Sandy Youseff recently welcomed baby Martin on May 23, 2013.

We've Moved!



After 30 plus years in the 2U area of MUMC, The Department of Anesthesia has officially moved down the hall to a much larger area.

The Anesthesia and Critical Care Medicine Residency Programs are now located in **HSC 2V2**. The offices of Drs. Karachi, Olivieri, Rieber, and Skrin-skas are here along with their Program Assistants Michele Drake, Judy Pace, and Sarah Richardson. The adjoining room, **HSC 2V3** has become the new Resident Library. The Department Administration offices of Drs. Buckley, Borges, Nandagopal, Nantha-Aree, Schichor, Wong, and Wood and the Academic staff, Bonnie Hugjill, Mary Gahagan are located in **HSC 2V9**. Also in this office is the Contemporary Acupuncture Program with support staff, Val Cannon and Dianne Homer.

Please note that all phone extensions and e-mail addresses have remained the same.

Drop by and see us!

Faculty Appointments and Promotions

Faculty Appointments

Dr. Saroo Sharda (nee Sharma) to Assistant Clinical Professor

Dr. Michele Cappello to Assistant Clinical Professor

Dr. Daniel Cordovani to Assistant Professor

Faculty Promotions

Dr. Janet Farrell to Clinical Professor

Dr. David Musson to Associate Professor

Dr. Desigen Reddy to Associate Clinical Professor

Dr. Tal Shichor to Associate Professor

Welcome

The department would like to welcome **Dr. Andrew Kirtu**, who is currently participating in a six month Fellowship in Obstetric Anaesthesia, at McMaster University, Canada, with plans of returning home to provide solutions and work in the soon to be built Women's Hospital in Kampala, Uganda.



Note from the Department

We would like to commend the faculty and staff for their consistent effort in accepting, placing and mentoring internal and visiting elective students in the Department of Anesthesia. We have received special accolades from the students and the Undergraduate MD office for our exceptional contributions. We will certainly continue to offer the best teaching possible and hope that many of these students aspire to become Anesthesiologists.

Did we miss your news?

Are you interested in submitting an article for the Department's next newsletter, a continuation of this issue's *Focus on the History of Anesthesia*? Let us know!

Contact Us

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