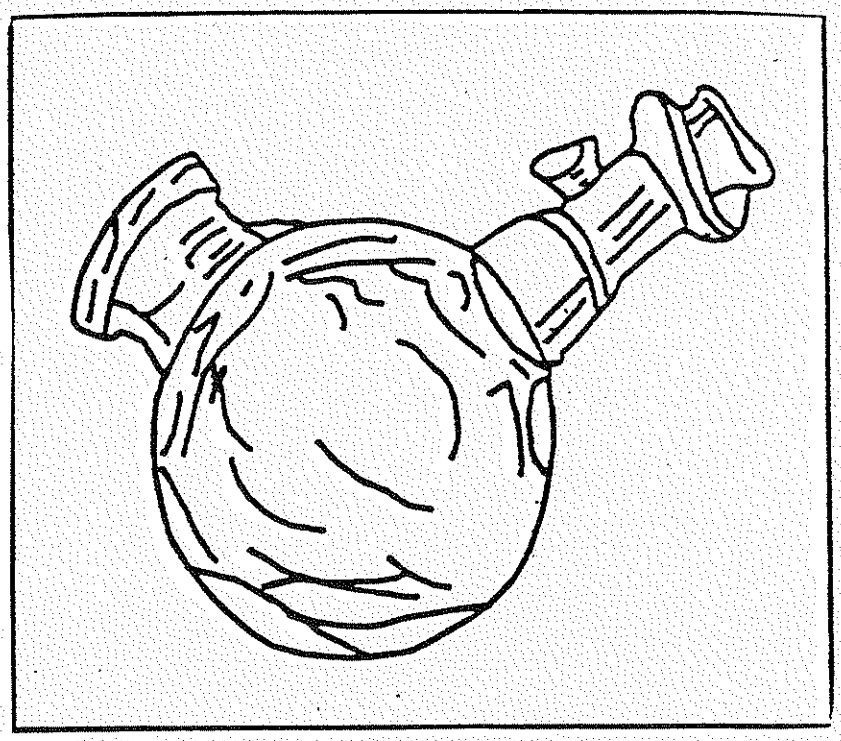
ANESTHESIA HISTORY ASSOCIATION



SPRING 2003 MEETING

Boston, Massachusetts

ANESTHESIA HISTORY ASSOCIATION

10th Annual Spring Meeting Program

Westin Copley Place Hotel
10 Huntington Avenue
Boston MA 02116
617-262-9600
617-424-7483 [fax]

Wednesday, April 30, 2003

**Morning Tour of the Ether Dome and Bullfinch Building*
9:00am-11:00am
Elliott Miller, MD

**Lunch on your own*
**Afternoon Tour of Mount Auburn Cemetery, Cambridge*
Elliott Miller, MD
12:30pm-3:00pm

SEE
**Alper MH. The ether controversy revisted. Anesthesiology 25:560-563, 1964*
**Gifford GE Jr. A medical tour of Boston. JAMA 245:1931-5, 1981*

4:30pm
Anesthesia History Association Council Meeting
Location to be determined

**Opening Reception*
Westin Copley Place
6:30pm-8:30pm

Thursday, May 1, 2003

All events at the Westin Copley Place

**Registration/Continental Breakfast*
7:00am-7:45am

**Opening Plenary Lecture*

Introduction by Douglas Bacon, M.D.

"Lt. Kornfield, World War II Physician-Anesthetist: Why His Story Matters"
David Waisel, M.D.
8:00am-8:50am

[See Waisel DB. Norman's war: Norman B. Kornfield, M.D., World War II Physician-Anesthetist. Anesthesiology 98:995-1003, 2003]

**Concurrent Sessions*

A: 9:00am-10:30am
Moderator: William Hammonds, MD

**Dr. Mary Botsford (1865-1939) of San Francisco: More Answers*
Selma Harrison Calmes, MD

**Stuart Cullen: My Years with Him in Iowa*
Kenneth Sugioka, MD, FRCA

**John Snow: Midwife of "Shock"?*
Kim Pelis, PhD

**Perspectives on Ambulatory Anesthesia: The 60s, 70s and 80s*
Burdett S. Dunbar, MD

B: 9:00am-10:30am
Moderator: Mark Mandabach, MD

**Keeping the Airway Open: Who Was First?*
Ray J. Defalque, MD and A.J. Wright, MLS

**Impact of Benevolence and a Golden Age of Anesthesia for Obstetrics*
Donald H. Wallace, MD

**A Bridge to Two Worlds: Shih-Hsun Ngai and Sino-American Anesthesia*
Patrick Sim, MLS

*Refreshment Break
10:30am-11:00am

Concurrent Residents' Sessions
C: 11:00am-12:00noon
Moderator: Doris Cope, M.D.

*James T. Gwathmey: An Advocate for Colonic Analgesia During Labor & Delivery
L. Tungpalan, MD; D. Bacon, MD; P. Mergens, MD; R. Caswell, MD; G. Vasdev, MD

*Memories of Sir Robert Macintosh's Last Resident
Radha Arunkumar, MD; William Hammonds, MD, MPH
[winner of the 2002 Anesthesia History Association Resident Essay Award]

*Restarting the Heart
Miriam Anixter, MD

D: II:00am-12:00noon
Moderator: Douglas Bacon, M.D.

*The Use of Dextran in the Korean War
K. Bockstahler, MD and D.B. Waisel, MD

*Blue Skies Forever: The Enduring Legacy of Sir C.V. Raman and the Origins of the Ohmeda RASCAL
Senthilkumar Sadhasivam, MD and David Lai, MD

*The History of Subcutaneous Oxygen Therapy
Timothy Curry, MD, PhD; Douglas Bacon, MD; Richard Rho, MD

*Luncheon Plenary Session
12:00noon-1:30pm
Introduction by Douglas Bacon, M.D.

"Subspecialty Training in Pediatric Anesthesia: An Historical Audiovisual Perspective."
This presentation will feature two training films made by the prescient M. Digby Leigh. The first, a silent film, was made in 1942 at Montreal Children's Hospital. The second film was made in 1962 at Los Angeles Children's Hospital.

Robert S. Holzman M.D., FAAP
Senior Associate in Anesthesia, Children's Hospital, Boston
Associate Professor of Anaesthesia, Harvard Medical School

Burdett S. Dunbar M.D.
Chief of Pediatric Anesthesia, Texas Children's Hospital
Professor of Anesthesiology, Baylor College of Medicine

Patrick Sim,M.L.S.
Librarian, Wood Library of Medicine

**Concurrent Sessions*

E: 2:00pm-3:30pm
Moderator: David B. Waisel, M.D.

**The Image of the Anesthesiologist in the Movies*
Yoel Donchin, MD; Michael Beigel, PhD

**The "Phantom Anesthetist of Mattoon": Dispelling the Hysteria*
Scott Maruna

F: 2:00pm-3:30pm
Moderator: Ray J. Defalque, M.D.

**The History of Pediatric Caudal Anesthesia*
Mark Mandabach, MD

**The Expansion of Practice by Mid-level Practitioners, an Historical Perspective*
William D. Hammonds, MD, MPH

**"Hatch": A Failed Aqualumnus*
Selma Harrison Calmes, MD

DR. MARY BOTSFORD (1865-1939) OF SAN FRANCISCO: MORE ANSWERS

Selma Harrison Calmes, MD
Olive View-UCLA Medical Center, Sylmar, CA 91342

Dr. Mary Botsford was the West Coast's first physician anesthetist; she was also one of the earliest physicians to practice anesthesia nationally, beginning her work in anesthesia in 1897. She trained numerous women physicians in anesthesia, founded the first state section of anesthesia in a state medical society and was its first president, was responsible for a state law requiring teaching of anesthesia in medical schools, was president of the Associated Anesthetists of the U.S. and Canada in 1931-2 and was the first faculty member in anesthesia and first chair of anesthesia at the University of California, the state's leading medical institution. She wrote numerous papers, including research papers with Arthur Guedel and Chauncey Leake. In spite of these many achievements, she is little known, and the story of her life is incomplete.

New material on Dr. Botsford recently became available, and a new research strategy was also developed. These led to more information on her life and her role as a leader in the state and nationally. This new information forms the basis of this paper. The information centers on five issues: Why she entered medicine, her war service, her situation at the University of California, her situation at the Children's Hospital of San Francisco, and her relation with Ralph Waters, who was assuming national leadership as her career was ending.

1. Why she entered medicine: Her obituaries typically stated something like, *"After a happy marriage and the unfortunate sudden loss of her husband, she resolved with rare courage to undertake the practice of medicine..."* In fact, her husband was alive and well, practicing medicine in San Francisco and living separately from her until he died in 1905. She graduated from the University of California medical school in San Francisco in 1896, well before his death. The 1900 census listed her as "divorced." The 1910 and 1920 censuses listed her as "widowed." Creating a story of her husband's death must have covered up a most difficult social situation for Dr. Botsford, who was an Irish Roman Catholic educated in convent schools. There are many possible reasons for her entry into medicine, given this scenario.
2. What was her war service? Her obituaries stated that she served in WW I. Women physicians were not allowed to serve in U.S. military forces in WW I except as contract surgeons. Dr. Botsford initially planned to go to England, which did commission women physicians, and later signed up to go to France with the Lakeside Unit. Most likely for economic reasons, she ended up as a contract surgeon, teaching nitrous oxide and ether to nurse anesthetists and female contract surgeons at Letterman General Hospital. Her official service was from October 1918 through January 1919, but she had been teaching informally at Letterman since mid-1917. This local position allowed her to continue to earn private practice income. Dr. Botsford usually had 2-3 other family members to support.
3. Her situation at the University of California: It is not clear exactly when she was appointed chair of anesthesia at UC; she became Clinical Professor in 1931. UC positions were without salary, and she was expected to generate private practice income. She did this at other private hospitals. She was able to run the UC service with several other women physicians, who she had trained, and interns. Nurse anesthetists never were used. Several teaching courses in anesthesia were given under her leadership, but it was difficult to get anesthesia as a curriculum item.
4. Her situation at the Children's Hospital of San Francisco (CHSF): Botsford's professional life was based at this hospital, founded by women physicians in 1875. She was chief of anesthesia for years, finally being "retired" in 1934 at age 69 after a 3 year period of conflict, primarily about whom was to replace her. This hospital was where she trained most of the women physicians. Nearly all women medical graduates on the West Coast came to CHSF for internship and all had to rotate on anesthesia. Botsford was an effective teacher, and many of her students went into anesthesia, especially in the Bay Area.
5. Her relation with Ralph Waters: Waters knew of Botsford, writing to Arthur Guedel in 1926 that the Bay Area was "her area" and that she did a good job. Botsford finally met Dr. Waters at a meeting in Chicago in 1929. Their final meeting in 1933 in Chicago led to an argument about how anesthesia should advance. Although their stands were not clearly stated, it seems Botsford advocated "fighting"—legally—against nurse anesthetists. Waters had a more measured approach of developing the specialty through better training, teaching and research and proving clinically that physician anesthesia was superior.

This new material fills in some of the gaps in this first generation physician anesthetist's life, but numerous questions still remain to be answered.

STUART CULLEN: My years with him in Iowa

Stuart Cullen, born in Milton Junction, WI, in 1909, did his undergraduate work at the University of Wisconsin and received his M.D. from there in 1933. He completed his residency in anesthesiology at Bellevue Hospital in 1938 under the tutelage of E.A. Rovenstine and from there went to the University of Iowa as head of anesthesiology, then a division of surgery. He rapidly developed a residency program which attracted trainees from many parts of the country and also found time to publish two of the first papers on the use of curare (1),(2), in a large population of patients. In 1948 he wrote one of the first and most widely read texts on clinical anesthesia. (3)

My residency under him began in 1950 and upon completion in 1952 I stayed there as a lecturer for an additional 6 months. Out of a group of about 14 residents at that time, 8 went on to become heads of academic divisions or departments of anesthesiology. He was an ideal role model, not only as a superb teacher, clinician, and investigator but as a person whose outstanding feature was equanimity.

References.

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3.Cullen, S.C. "Anesthesia" Year Book Publishers 1948. Chicago, Illinois

John Snow: Midwife of "Shock"?

"I formerly said that chloroform might be used with advantage in all cases of injury requiring amputation, save one....when a thigh has been carried off by a cannon-shot, ...there is so great a shock ...some do actually die....Much difference of opinion having taken place on the subject of chloroform, I requested Dr. Snow, who has superintended its use in many of our hospitals, and in almost all the cases of serious operation in private life, to draw up his observations". - George Guthrie, 1855

At the end of the Napoleonic Wars, George James Guthrie, a young British army surgeon, wrote a treatise on his recent experiences. Notable among his observations was his attention to the "shock and alarm to the constitution" that followed upon certain severe wounds, and that frequently led to speedy dissolution if the surgeon amputated before "reaction" took place. At the start of the Crimean War, Guthrie, now three time president of the Royal College of Surgeons and nearing the end of his life, requested the advice of the country's most acclaimed expert on anesthesia, to help him determine whether chloroform would permit operation on wounded soldiers in such a condition. He asked John Snow.

John Snow was Britain's leading "anesthetist." It was a position he himself helped forge, not out of traditional social connections, but out of the growing opportunities available to "general practitioners" of the day – medical societies, journals, and educational opportunities – into which he fitted his enthusiasm for the burgeoning "scientific" medicine. We may understand, then, why Snow in particular, and anesthesia's revolutionary introduction into medical practice more generally, have been the subject of extensive historical study. We have looked at the debates that ensued from 1846 concerning the "safety" of anesthesia; at changing ideas about the nature and effects of pain; at obstetrical resistance, credit-mongering, and mesmeric challenges. Within these discussions, we have seen historians note in passing that anesthesia was thought by some to obviate the "shock" that followed in pain's wake. What historians have not commonly noted was that "shock," in the sense of a generally recognized "state," did not exist in a stable form before mid-century. "Shock," when noted at all, was an external jolt to the nerves. What historians have wholly overlooked is that the "state of shock" was an inadvertent product of activity around anesthesia at mid-century.

My paper will use an array of primary sources to trace the "state of shock" as it emerged out of physiological experiments on respiration and nerves, debates about pain and safety, and clinical experiences of surgery and childbirth, all within the unique environment of early Victorian Britain. At its center will be John Snow, who did not so much *cause*, as *facilitate*, this shift. In so doing, he helped assure his position as "expert": the man even the greatest doctors of the day called upon to administer anesthesia at their operations, and to advise their army surgeons on the limits of its safe employment. In turn, army medical officers and noted civilian surgeons alike would show increasing concern with "shock" following injury – and following surgery itself.

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Perspectives on Ambulatory Anesthesia: The 60's, 70's and 80's

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In contrast to slower changes in some medical practices in the 20th century, ambulatory surgery and anesthesia developed rapidly after their establishment in the late 1960's. This presentation will outline milestones in the evolution of ambulatory anesthesia in surgery in the early years of its existence.

In the 1960's ambulatory surgery and anesthesia were practiced intermittently in highly individualistic ways. They had not established themselves as popular.[1,2] Beginning in the mid-60's, organized medicine recognized that hospital bed shortages were occurring and had no easy solution. In his 1968 AMA Presidential Address, Dwight Wilbur, M.D., expressed his concerns about this nationwide problem. He turned attention specifically to managing bed occupancies with a reference to ambulatory surgery.[3]

In the early 1970's Drs. Wallace Reed and John Ford demonstrated, in Phoenix, that ambulatory surgery and anesthesia were feasible, when they opened their Surgicenter.[4] The House of Delegates (HOD) of the American Society of Anesthesiology (ASA) in 1972, adopted a resolution to "investigate" ambulatory anesthesia and surgery.[5] In 1973 HOD passed resolutions 9 and 10 from the annual report of the Surgical Anesthesia Committee, chaired by Otto C. Philips, M.D. These resolutions "approved" the concept of ambulatory anesthesia and adopted guidelines for facilities, construction and for medical direction of ambulatory surgical care centers.[6] Thus, the initial concerns expressed about bed shortages in the mid-60's were being addressed in the early to mid-70's with the establishment of ambulatory surgical centers across the country.

From the mid and late 70's into the 1980's enthusiasm for this kind of care increased. The ASA appointed a Committee on Ambulatory Care Surgery, first as an Ad Hoc Committee, in 1977. It became a standing committee of the scientific council in 1978.[7] The chairmanship of this committee passed to Dr. Bernard Wetchler, in 1983.[8] Dr. Wetchler subsequently was elected president of the ASA. Dr. Wetchler's chairmanship, beginning in the 1980's, coincided with the establishment of the Society of Ambulatory Anesthesia (SAMBA), of which he was also President. SAMBA held its first meeting in 1986, following its organization in 1984.[9]

In summary, the documentation of the early days of ambulatory surgery in anesthesia is fascinating and well defined. The role played by innovative practitioners of anesthesia and surgery, is also well documented. The archives of the Wood Library-Museum of Anesthesiology, Park Ridge, Illinois holds the records of the ASA House of Delegates, as well as committee reports and personal reminisces which will be used to flesh out this story.

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Keeping the Airway Open. Who Was First?

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Introduction

M. Hall in 1856 was the first to describe upper airway obstruction by the tongue under anesthesia[1]. The "jaw thrust", i.e., pulling the mandible forward and upward to relieve that obstruction, was introduced in Germany by the noted surgeon F. von Esmarch in 1877[2]. In Germany and on the Continent, Esmarch is generally considered to be the discoverer of the "jaw thrust" which is known as "Esmarch's maneuver" (Esmarchs Handgriff)[3,4].

One of us (DJW) reported in 1992[5] that Jacob M. Heiberg, a professor of surgery at Christiansen (now Oslo) had already described the "jaw thrust" in a British medical publication in 1874[6], thus preceding Esmarch by three years. One British textbook[7] also quotes Heiberg as the maneuver's inventor. The history of the discovery of the technique, however, appears to be more intricate.

A Complex Story

In the same year (1874) that Heiberg reported his maneuver in Great Britain[6], he published an identical article in the *Berliner Kliniche Wochenschrift*, a widely read German medical weekly[8]. His paper promoted C. Langebuch , a German surgeon, to write to the journal's editor[9]. Langebuch disputed Heidberg's priority and claimed to have learned the technique from Esmarch in 1866 when he was his student at Kiel. Heiberg answered Langebuch's letter in a later issue of the *Berliner Klinische Wochenschrift*[10]. He had, he said, written to Esmarch to apologize for his hasty and mistaken claim. Esmarch had answered the he had indeed used the "jaw thrust" since 1866, but that he was not its inventor. He had learned it from J. S. Little, a British surgeon who had visited him in Kiel in 1866, before leaving for India in 1868.

Esmarch's remark may have prompted O. Kappeler to mention "a Dr. Little (?)" as the possible discoverer of the technique in his textbook *Anaesthetica* in 1880[3]. An extensive search of the British medical directories and surgical rosters of the period has failed so far to identify a J.S. Little answering Esmarch's description.

In fact, priority for the discovery of the "jaw thrust" should probably go to J.T. Clover who described it in minute details in an 1868 lecture to London dentists[11] and emphasized its importance for anesthetists in later articles in 1871 and 1874 [12,13].

So Who Was First?

Who then invented the "jaw thrust"? Was it J.S. Little? Or was it J.T. Clover? Or was Little a student of Clover? Answering those questions will call for further researches. But we can be certain that the inventor was not Esmarch or Heiberg.

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Impact of Benevolence and a Golden age of Anesthesia for Obstetrics

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Introduction. A dramatic and continued impact of benevolence punctuated progress in anesthesia from the era of the pioneers of inhalational anesthesia for obstetrics (1); and the great initial controversy over its use (2). The successful administration of ether for surgery in Boston on October 16th. 1846. stimulated James Young Simpson the Professor of Midwifery in Edinburgh, Scotland, to first administer ether for obstetrics (January 19, 1847). Soon after he administered inhalational anesthesia with ether for the delivery of a parturient with a deformed pelvis, Simpson wrote - "of a need to ascertain anesthesia's precise effect both on the action of the uterus, and on the assistant abdominal muscles; its influence, if any, upon the child; ...or other complications". (3). After John Snow administered chloroform to Queen Victoria (1853) for the birth of Prince Leopold, this beneficence subsequently (4) had great societal impact for the acceptability of obstetric anesthesia. Although Paul Zweifel 1874, (5) had reported use of a chemical reaction to demonstrate the presence of chloroform in the umbilical blood of neonates, few studies published between 1880 and 1950 considered the effects on the newborn, or defined apnea, oligopnea, or asphyxia.

In 1953, one hundred years after Queen Victoria was administered chloroform, a great American woman, Virginia Apgar (6), described a simple reliable system for the evaluation of the newborn, **the Apgar Score** (7). A golden age for analgesia and anesthesia for obstetrics began in the **Fifties** at a time of advances in obstetric medicine. J. Selwyn Crawford, who had worked with Virginia Apgar, was the first Consultant Anesthetist appointed to full-time work in an obstetric hospital in the U.K.. In the **Sixties** Crawford welcomes the formation of the Obstetric Anesthetists Association (OAA), comments on its widespread support, and a its vigor and influence. In the United States the subspecialty society SOAP had been founded; major advances in obstetric anesthesia have continued to the present from the work of the founders, and members of the Society.

In the **Nineties** beneficence has been evident in the demonstrated safety for the mother and the newborn from a rebirth of spinal anesthesia: spinal anesthesia is popular for obstetrics and has been found cost-effective. Importantly there has been a reappraisal of its use in severe preeclampsia (8). Also at Parkland Hospital the findings of Apgar in her 1962 report have again been confirmed (9), and the Apgar Scoring System found to be as relevant for the prediction of neonatal survival today as it was fifty years ago.

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A Bridge to Two Worlds: Shih-Hsun Ngai and Sino-American Anesthesia

Patrick Sim, MLS
Wood Library-Museum of Anesthesiology

TWO WORLDS & A CATALYST

The world of Chinese anesthesia has strong influence from America. Peter Parker brought Morton's discovery to China; a century later China turned to America to continue that tradition.[1] This cross-cultural medical exchange benefits humanity in both worlds. This paper explores the origins of a mid-20th century medical movement centered upon the catalytic role of one of the three trainees dispatched from China to America a century after the first exchange.

THREE CATALYSTS & THEIR PROFESSIONAL WORLDS

Post-war China in mid-20th century saw the need for modernizing surgical anesthesia. Three physicians were selected in a rigorous national selection process by the Ministry of Education to study clinical anesthesia in America. Jone J. Wu went to Madison, WI with Ralph Waters; Guang-Sheng Ding went to Chicago to join Huberta Livingstone at the University of Chicago; Shih-Hsun Ngai had residencies in Chicago with Bernard Stodsky at Michael Reese, and joined Virginia Apgar's program in New York. Dr. Wu received further training in pharmacology before returning to China. Dr. Ding went on to obtain a doctorate in pharmacology after his training in anesthesia. He contributes to pharmacology, anesthesia and toxicology, and introduced an antidote against heavy metal poisoning. He edits *Acta Pharmacologica Sinica.* Dr. Ngai's distinguished professional career spanned half a century at Columbia University.[2] These three young professionals came from different backgrounds to study anesthesia: Wu in pharmacology, Ding in biochemistry and Ngai from surgery. All became distinguished anesthesiologists.

AMERICAN ODYSSEY & NEW ROOTS[3]

Dr. Ngai's preparation and training in anesthesia included an internship in Canada, and anesthesia residencies in Chicago and New York. His early medical experience led to later contributions in clinical research and scientific investigation, as he acquired analytical skill, evaluative ability and superb journalistic acumen. All of these attributes carried him beyond his home at Columbia University. He overcome adversities and turned negative encounters to satisfying experience. Soon after obtaining his medical practice license, he enlisted in the army medical corps and contributed to research in military anesthesia.

LEAF DESCENDING TO NOURISH THE ROOTS: PROFESSIONAL REPATRIATION[4]

"Leaf descending" is a metaphor describing the return of an individual to his native roots to contribute to the society of his beginning. The descending leaf lands on the soil to nourish the roots of the tree to which it once belonged. Dr. Ngai did not return to his homeland, as he continued to contribute to his adopted country. Yet, he made available his medical and anesthetic expertise to China beginning in 1972 on his election as a Fellow to Academia Sinica. His expert service to China continued for more than a quarter century in teaching, consulting, planning and training. He was a driving force in the establishment of the Chinese Biomedical Sciences Institute, an active and valued consultant to Chinese academic anesthesia, and an untiring editorial reviewer for *Acta Anaesthesiologica Sinica.* His career came full cycle in half a century from postwar China in 1946 to modern Taiwan in1999. He died at home in New Jersey in 1999, fulfilling a mission as a bridge in medicine between two worlds across the vast Pacific.

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[2] Ding GS to Sim P. Personal communication. September 24, 2002

[3] Unpublished *Memoir of S. H. Ngai, M.D.* Courtesy of Hsueh-Hua Wang, M.D.

[4] Ibid.

James T. Gwathmey: An Advocate for Colonic Analgesia During Labor & Delivery

L. Tungpalan, MD, D. Bacon, M.D. P. Mergens, MD, R. Caswell, MD, G. Vasdev, MD
Applying under the **Resident Session**
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In 1913, James Tayloe Gwathmey, M.D. wrote in the New York Medicine Journal, "Oil-ether colonic anesthesia is an evolution from intravenous anesthesia." This statement highlights Gwathmey's lifelong support of ether-oil colonic anesthesia. In a time before epidural catheters were utilized, Gwathmey pioneered an effective obstetric analgesic technique with little to no detrimental impact on outcome to mother or child.

Born in 1863, Gwathmey studied medicine at the New York Skin and Cancer Hospital. As an intern, he observed the then unrefined practice of anesthesia and took an interest in improving upon it. After completing residency, Gwathmey initially wanted to practice dermatology and anesthesiology. However, his adept skills and upstanding reputation as a physician anesthetist soared to the point where he devoted his entire practice to anesthesiology. In doing so, he became the one of the first full-time private practice anesthesiologists in the United States. Gwathmey's boyhood attendance at Norfolk Male Academy and the Virginia Military Institute planted his leadership skills that blossomed as a physician. As the first president of the American Association of Anesthetists, Gwathmey was an instrumental figure in the development of American anesthesia.

During his prominent career, he published many articles describing his oil-ether anesthetic method. He also regularly corresponded with John S. Lundy, M.D., anesthesiologist at the Mayo Clinic. The two gentleman freely shared information about how each would conduct oil-ether anesthesia.

Observing Chief Surgeon George Brewer's demonstration on colonic anesthesia initially sparked Gwathmey's interest in this method. In addition, Gwathmey was drawn to the advantages of colonic anesthesia including: (1) decreasing the patient's fear & apprehension caused by placing a mask over the face as in inhalational anesthesia, (2) reducing the need for expensive equipment, (3) decreased side effects of the anesthetic, (4) increased relaxation, (5) increased safety margin compared to other methods at the time, and (6) an increased even plane of surgical anesthesia versus any inhalational. With George Wallace, Professor of Pharmacology at Bellevue Hospital, Gwathmey & Wallace collaboratively worked to refine the colonic technique. At first, they conducted experimental laboratory work on animal models. Initially, they used 5% solution of ether in normal saline. However, this resulted in failure as the ether parted from saline rapidly resulting in explosive losses. Next the couple pioneered the use of oil-ether mixture in a 1:3 ratio and found that heart rate, respiration, and blood pressure were smoothly maintained in dogs under this technique of rectal anesthesia. After laboratory data showed that the method was safe, in 1913, Gwathmey successfully used this technique for surgical purposes.

Ten years after effectively using oil-ether colonic anesthesia for general surgery, in 1923, Gwathmey's attention turned to using colonic analgesia in obstetrics. Gwathmey's goals were to relief labor pain and also allow the patient to be conscious with minimal sedation so that cooperation would not be hindered. The obstetrical analgesic method was developed at the Lying-in Hospital of New York City. Over the following seven years, twenty thousand cases were reported using Gwathmey's oil-ether colonic analgesia technique. His findings were published 1931's Anesthesia and Analgesia. In that paper, satisfactory results were suggested at 85-95%. Of the 20,000 cases, there were no changes in fatalities, duration of labor, neonatal outcome, postpartum hemorrhage, & forceps delivery. One draw back to this technique was the loss of colonic content with rectal examination. Of note, progress of labor was often assessed by rectal examination.

The popularity of colonic analgesia faded post-World War II as the use of other agents became more prevalent. Demerol, inhaled agents, penthrane, and trichloroethylene superseded the use of ether. However, Gwathmey's novel thinking in obstetric anesthesia paved the way to our modern day practice of providing safe, efficacious analgesia coupled with minimal sedation and active patient cooperation.

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Memories of Sir Robert Macintosh's Last Resident

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Professor Sir Robert Macintosh was a legendary figure and pioneer in the world of anesthesia. He also had the distinction of being the first Chairman of Anesthesia of the Nuffield Department of Anesthesia at the University of Oxford, England. During his chairmanship from 1937 to 1965, he established his department as a pre-eminent training center in anesthesia and shaped the careers of many anesthesiologists throughout the world. Sir Robert's last resident was Dr. Peter Jebson, Professor of Anesthesia at the University of Iowa School of Medicine in Iowa City, Iowa. Professor Jebson moved to Iowa City to direct the Surgical Intensive Care Unit in 1980, after a distinguished career in the United Kingdom. At the University of Iowa, he served in many roles including teacher, Professor and interim Chairman. He established the Hyperbaric Medicine Center, which bears his name. The first author had the privilege of having Professor Jebson as her teacher. This paper is a collection of the memories of Dr. Jebson about his days in Oxford. Professor Jebson recalls that he was one of the last two Senior House Officers to work under Sir Robert, the other being Professor Chris Brian Brown, now in New York.

Professor Jebson went to Oxford from York in 1965, which was the last year of Sir Robert's chairmanship. In this paper, he fondly remembers of those years of his residency under Sir Robert's leadership. He recounts the story of how Sir Robert happened to become the Chairman of Anesthesia at Oxford. Dr. Jebson also talks about his chairman's teaching methods, the textbooks that he wrote and taught from, his various inventions such as the Macintosh laryngoscope and about how Sir Robert was a pioneer in not only general anesthesia and regional anesthesia, but also in the field of critical care. Sir Robert's personality was greatly enhanced by his sense of humor.

Even after Dr. Jebson left Oxford, he maintained contact with Sir Robert and invited him to give a lecture at Sheffield where Dr. Jebson was running the ICU. The lecture was about he developed the "May West" during the World War, a life vest that saves a pilot from drowning if his plane went down in the sea. Sir Robert also visited with Jebson's family at the time.

Sir Robert Macintosh rose to the heights of greatness by basically being a champion of simplicity. This remarkable man insisted on the need for physicians to focus on the fundamentals and essentials of anesthesia. He often said that patients usually die during anesthesia not from lack of knowledge about obscure biochemical disorders, but due to simple but lethal mishaps and accidents.

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Restarting the Heart

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The heart has always thought to be central to life. The cessation of that beat has marked the end of our lives as both the last event in dying, and as a cause of death. In the last half-centrury, cardiac arrest has been transformed from a death sentence to a public health concern culminating recently in its treatment by laypersons with public automatic external defibrillators (Caffrey SL, Willoughby PJ, Pepe PE et al, 2002). This project was a literature search looking at the events that led to this change.

Although internal cardiac massage could support circulation, the ability to transform a malignant arrythmia into a perfusing cardiac rythym was a first necessary step in the journey. In the 1930s, power companies began investigating the deaths of their linemen from electric shock. They called for research in the effects of electricity on the human body, as a way of preventing these deaths (Kouwenhoven WB, Langworthy OR, 1973). The clinical fruits of this research were realized after the first successful termination of ventricular defibrillation by electric shock occured in a young boy after 45 minutes of open cardiac massage (Beck CS, Pritchard WH, Feil HS, 1947).

The begining of the change of cardiac arrest from an inevitable death sentence to a treatable event is chronicled by Briggs et al (1956). They noted that the rate of cardiac arrests was no longer paralleling the rate of operative deaths because more of the patients who were arresting were surviving-- up to half of them in the last 5 years of their 1925-1954 study. The standard of care at that time was to open the chest for manual cardiac massage (Dripps RD, Kirby CK, Johnson J, Erb WH, 1948; Zoll PM, Linenthal AJ, Norman LR et al, 1956). Dripps et al (1948) even recommended opening the chest as a differential diagnosis of pulselessness, stating that the EKG tracing "unfortunately cannot be relied upon". He emphazied the importance of the rapid restoration of circulation and the fact that definative therapy at the time,either with cardiac massage or electrical defibrillation, required an open chest. Survival was fairly good, approximating one third of arrests (Briggs BD et al, 1956; Crehan JP, Nicholson MJ, 1963; Pierce JA, 1966, Zoll PM et al, 1956). However, it was not applicable to patients outside the operating room or in patients deemed unable to tolerate the incision; these patients simply died.

The transfer of electroshock defibrillation from open chest to closed chest allowed its use as an initial step in cardiac resuscitation or an alternative when opening chest was not possible. Zoll et al (1956) describes using the defibrillator to terminate intraoperative cardiac arrest in 8 patients without having to open the chest. It also could be used as both a pacer and a defibrillator, in conjunction with a monitor; in a series from 1955-62, authors noted that survival was approximately 80% in patients experiencing arrest with this device versus 30% in non-monitored patients (Crehan JP, Nicholson MJ, 1963). It was evident that the ability to rapidly diagnose and treat arrest improved survival.

Then patients got one more chance to escape a thoracotomy; external cardiac massage was found to be effective in 20 patients in an initial series (Kouwenhoven WB, Jude JR, Knickerbocker GG, 1960). It was not as effective as open massage, but was infinitely more practical where time or equipment did not permit opening a patient's chest. External cardiac massage could be the first-line therapy before a perfusing rythym was restored, supporting circulation in those crucial

first seconds. It also brought cardiac resuscitation to the world outside the operating room, requiring no equipment and little training.

The existence of effective resuscitation procedures is becoming even more important. The population is older and sicker on the whole, as extremes of age and chronic medical conditions are being treated in the outpatient setting. These men and women are more likely to need resuscitation not just in the hospital setting, but outside it as well. The groundwork of public education in closed-chest resuscitation (Winchell SW and Safar P, 1966) and the development of automated external defibrillators have enabled us to provide this service.

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The Use of Dextran in the Korean War

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War encourages medical advances. Physicians have opportunities to have first-hand observation of the large number of similar injuries in a homogenous group of healthy young individuals, note inadequacies of treatment and to initiate change. During war, doctors have great discretion in treatment and implementation.

In World War II, one of these tremendous leaps of medicine occurred in the treatment of hypovolemic shock with early fluid resuscitation. The use of plasma as a volume expander was common and considered safe. The most notable problem was the risk of hepatitis that was felt to be around 7%. At the conclusion of WWII the soldiers who had received plasma dispersed throughout the United States. Because there was no central reporting agency, neither the medical community nor the military realized the high number of soldiers who had contracted hepatitis.

As such, the military continued the practice of early plasma resuscitation when the Korean War began. While this practice worked well clinically it presented many practical problems. Plasma could only be stored in bulky, difficult to transport glass bottles, poorly compatible with the duties of a front line corpsman funning from bunker to bunker. Plasma froze easily, contributing to breakage of its glass containers. Despite these difficulties, corpsmen were committed to using plasma. Front line medical personnel saw daily how well plasma saved the lives of their buddies.

Further, reports began to indicate that an increasing numbers of individuals who received plasma were developing hepatitis – up to an incidence of 25%. The military had a problem. Plasma saved lives in the short-term but caused hepatitis in the long-term. The military tried to walk a fine line, changing the use plasma as soon as possible to use plasma only if absolutely necessary. Medics had difficulty embracing this policy. The policy asked front-line personnel to quickly assess whether plasma was necessary to save the lives of their friends. The lack of a good alternative gave these men little choice.

A different colloid, Dextran, was cast aside by the military at the end of WWII in light of plasma's efficacy. It was used in Scandinavia, however, and no apparent problems had been noted. The military decided to experiment with the agent in front line resuscitation. Dextran had many advantages and was rapidly and enthusiastically accepted by military physicians and corpsmen.

The attributes that made Dextran so popular were not only its apparent safety but also how it was packaged. Dextran was sent to the troops in plastic bags similar to the bags used today. This allowed corpsmen to carry fluids in the pockets of their fatigues. The bags were virtually indestructible and did not freeze so not only was there no breakage but also the fluids could be provided in the coldest weather. The compressible plastic containers permitted it to be given rapidly. Corpsmen soon discovered that placing the bags under the injured on the litter carry resulted in rapid transfusion while under transport. As an added bonus Dextran was easy to produce, inexpensive to make and free of any virus. The use of Dextran was so complete in its superiority that by the end of the Korean War no plasma was to be used and the military had switched over to the use of Dextran as the main initial fluid resuscitation agent for treatment of shock.

Blue Skies Forever: The Enduring Legacy of Sir C. V. Raman and the Origins of the Ohmeda RASCAL

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On board a ship, while other minds would have been occupied by dreams, the blue of the sky intrigued Sir. C. V. Raman and inspired the revolutionary idea of *scattering of light by water molecules*. This observation set him off on the path of optics, which led to the discovery of "the Raman Scattering" and the 1930 Nobel Prize for Physics.

Biography: Chandrasekhara Venkata Raman was born in Trichy, India on November 7, 1888 into a house of learning. Raman did his earliest researches in optics and acoustics as a student - the two fields to which he dedicated his entire career after obtaining his masters degree in physics with the highest distinctions. At that period of time in India science as a career did not hold a promising future. But, motivated Raman found opportunities to do experiments in the laboratory of the Indian Association for the Cultivation of Science at Calcutta. Raman's hard work earned him a scientific spotlight. In 1917 Raman became the Palit Chair of Physics at Calcutta University. He founded the *Indian Journal of Physics* in 1926. He established the Indian Academy of Sciences and initiated the *Proceedings* of that academy, in which much of his work is published. He was also President of the *Current Science Association.* In 1922, he published his work on the "Molecular Diffraction of Light" which made him an internationally recognized figure. This was the first of a series of his investigations, which ultimately led to the discovery of the Raman effect[1], which earned him the 1930 Nobel Prize in Physics. Then, Raman became the Director and Professor at India's most prestigious scientific institution - the Indian Institute of Science at Bangalore - from 1933 to 1948. In 1948, he established the Raman Institute of Research at Bangalore. The numerous honorary degrees and memberships of scientific societies bestowed upon Raman validate his glowing reputation among his fellow scientists. Few can match Raman's incredible triumvirate of accomplishments within a seven-year period: Fellow of the Royal Society (1924), Knighthood (1929), and Nobel Laureate (1930). After a long and productive career, Sir C.V. Raman died on November 21, 1970 in Bangalore, where he was cremated on the grounds of his beloved Raman Research Institute.

Noble prize: The Nobel Prize in Physics for 1930 was awarded to Raman for his discovery of "Raman Scattering[1]." In 1928, he discovered that scattered light showed not only radiation derived from primary light, but also radiation that contained wavelengths foreign to the primary light. When a photon from a light source collides with a molecule of gas, some of the kinetic energy from the photon may be absorbed resulting in the scattered photon having a lower energy level and hence a longer wavelength (Raman scattering). This discovery has proved to be of great importance for our knowledge of the structure of molecules (e.g. measurement of individual components of a gas mixture).

Clinical Anesthesia and Medicine: Anesthetic and respiratory gases can be simultaneously measured by Raman scattering with accuracy comparable to a mass spectrometer.[2-3] The Ohmeda RASCAL[3] employs this Raman technology. The advantage of Raman scattering over infrared gas analysis is that it is capable of measuring all anesthetic and respiratory gases including symmetric molecules like nitrogen and oxygen. The complexities of visible laser excitation are part of the reason why Ohmeda has stopped manufacturing the RASCAL. Although many anesthesia technicians were happy when the finicky "Little Rascal" was retired, a valuable monitor for sitting craniotomies and adequate pre-oxygenation was also lost. With advancements in laser technology (e.g. near infrared excitation) and charge coupled device array detection, the RASCAL may yet resurge back into our anesthetic armamentarium. Raman scattering is also used to confirm unitary hypotheses relating general anesthesia to lipid perturbations. Raman spectroscopy has also made rapid chemical analyses and identification of narcotics possible. Raman analysis has other potential biomedical applications, including: noninvasive *in-vivo* glucose monitoring, identification of tissue types, *in vivo* cancer diagnosis, retinal visual field evaluations, and deep tissue functional imaging.

Conclusion: To continue his interests, he founded the Raman Research Institute in 1948. Raman proved to mankind that a Nobel Prize could be earned through hard work and determination *without* the need of expensive, sophisticated equipment. Sir C.V. Raman's enduring legacy is that he still continues to motivate budding scientists around the globe. As Raman's memory and work live on through various worldwide institutions, many more practical clinical tools can be anticipated to emerge from the vision of this great man who saw the blue of the sky while on the ship of dreams.

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resident session

THE HISTORY OF SUBCUTANEOUS OXYGEN THERAPY

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Background: Since the discovery and self-administration of oxygen by Joseph Priestly in 1772 many different methods of administering oxygen have been tried, including the subcutaneous injection of the gas. The history of the use of subcutaneous administration of oxygen was explored with specific attention given to published studies describing the physiology, benefits, risks, and technical aspects of its use.

Methods: Index Medicus and Medline were searched under the Medical Subject Headings: "oxygen, therapeutic use" and "oxygen, toxicity." Bibliographies of available publications were reviewed for additional publications not found using the above search methods.

Results: Sixty-one manuscripts were found searching Index Medicus and Medline. References to the use of subcutaneous infusion of gas dated as early as 1799 and as recently as 1999. Papers discussing the use of subcutaneous oxygen were found in journals from a wide range of medical disciplines including anesthesiology (1-3), surgery, and internal medicine. The manuscript publication dates by decade showed a bimodal distribution with most papers published in the 1920's and 30's (primarily American and European studies) or 1960's and 70's (largely by Russian authors). While references to the injection of oxygen subcutaneously were found prior to this time, the first published use of it was in 1914 (4) and the first description of a special apparatus for the administration of subcutaneous oxygen was by Bayeau (5), who used it to treat acute mountain sickness. Subsequent publications advocated its use in more than sixty different disease states. The initial enthusiasm for subcutaneous administration of oxygen was tempered by studies refuting the physiological benefit of administering relatively small volumes of pure oxygen compared with the overall metabolic demand of the body; the number of publications on subcutaneous injections of oxygen further waned once the use of inhaled oxygen was accepted by the medical community. Current interest in the medical literature primarily centers on the local effects on the tissues in which the oxygen is infused.

Conclusions: Clinical use of subcutaneous oxygen therapy spans more than 200 years despite a lack of good clinical trials and a physiological basis to support its use. Novel uses for subcutaneous oxygen therapy continued to be reported in the literature into the late 20th Century. Notably, anesthesiologists have played a role in subcutaneous oxygen therapy in its use for providing oxygenation of tissues, relief of pain, and in providing anesthesia for its administration.

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The image of the anesthesiologist in the movies

Donchin Yoel MD , Beygal Michael PhD.

The discovery of pain relief was a turning point in medicine which might lead us to imagine that the anesthesiologist would be a central figure in medical folklore. Instead, the surgeon, the general practitioner and the nurse are the traditional heroes and heroines of popular movies. The portrayal of physicians and medical teams in the cinema has such an influence on the public, that it determines what the public expects from treatment and how it evaluates such procedures as surgery, ER treatment and CPR. The family physician of the movies is a good hearted, caring, grey haired doctor. Old heroes like TV's Markus Wellby, MD, and the esteemed Dr Kildare paved the way towards the new generation of physicians.
Until recently, the anesthesiologist usually played a supporting role, although a few have had the honor of being villains. While it's true that the founding father of anesthesia, Morton, was the hero of a full length movie (Great moments, 1944), the movie completely distorted his character, portraying him as a loving husband, a scholar, and a man dedicated to medicine, when, in fact, he was greedy more than everything else.

We used IMDB (the Internet Movie Data Base) to find films featuring anesthesiologists (and also intensive care doctors). Searching for anesthesiologist in the scenario yielded 48 movies. The clips relevant to the anesthesiologist were transferred to mpg format. Each scene was carefully analyzed and catalogued for use in presentations and lectures. We found more than 400 movies in which an anesthesiologist affects the plot and has at least 4 minutes of screen time- from Walter Mitty, the hero surgeon and anesthesiologist, to anonymous doctors seen sitting on a chair receiving hushed orders from the surgeon. We collected the most important of these scenes to create a multi-media presentation. What emerges from the collection of scenes and our remarks is an image of the anesthesiologist as a negative figure in the movies.

We shall make a CD available for all participants in the conference who wish to have a reference of how this important medium has shaped the publics opinion of us.

Movies included in the presentation

Great moments
Dr. Kildare strange case
Interns do not take money
Ether Anesthesia. BOC educational movie
Not as a stranger
MASH
Coma
Hospital
Intensive care
The verdict
The Doctor

ABSTRACT

The "Phantom Anesthetist of Mattoon": Dispelling the Hysteria

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Research Problem: Was the "classic case" of mass hysteria involving a "phantom anesthetist" spraying a non-existent gas into the windows of women's bedrooms in 1944 actually not a mass psychogenic illness at all?

Methodology: Through a thorough analysis of historical records, comparative case studies, reviews of chlorinated hydrocarbons, modern methods of criminal profiling and interviews with surviving victims and neighbors, the author pieces together the nearly sixty-year old puzzle incorrectly embraced by sociologists for years as mass hysteria.

Summary: In 1944, the town of Mattoon, Illinois succumbed to the "best known and most commonly cited case of mass hysteria in the twentieth century". For two weeks, a "mad gasser" or "phantom anesthetist" who sprayed gas into the bedroom windows of innocent women terrorized the small town's populace. It was, though, all in their collective imagination...or was it? Author Scott Maruna, after much research, investigation and interviewing, finally exposes the truth behind the Mad Gasser of Mattoon and manages to dispel the hysteria once and for all.

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The History of Pediatric Caudal Anesthesia

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Introduction

Two French physicians, Jean-Athanase Sicard and Fernand Cathelin performed the first caudal blocks in 1901. Both used cocaine. Sicard, a neurologist, used caudal blocks to treat patients with chronic back pain. Cathelin, a surgeon, attempted inguinal hernia repair in four patients using caudally administered cocaine; he achieved analgesia, but not surgical anesthesia. In Germany, Arthur Läwen refined the technique of caudal anesthesia and utilized it extensively for surgical procedures below the umbilicus. He first published in 1911. The future of epidural anesthesia in adults rested in the hands of Pagés, a Spanish military physician and Dogliotti, an Italian physician. They independently developed the lumbar approach to the epidural space. Pagés published in 1921, Dogliotti in 1939. Over the years, lumbar and thoracic epidural anesthesia have grown and prospered, whereas caudal anesthesia in adults is rarely used. This is in contrast with the caudal block, which remains a viable method in pediatrics for both anesthesia and analgesia. Some consider it the most useful pediatric block.

Pediatric Caudal Anesthesia

Meredith F. Campbell of NY, NY published the first report of pediatric caudal anesthesia in 1933. [1] Dr. Campbell used caudal anesthesia in 83 cases for urological examinations and minor surgical procedures in boys of age 4-14 years. She used 8-12 ml of 2% procaine injected through a 21-gauge needle. Her success rate was 90%; IV injection of procaine was reported in one case; mild CNS reactions attributable to systemic local anesthetic absorption were noted in a few patients. Another study by Dr. Roderic Sievers of Munich, Germany was published in 1936. [2] He reported a number of cystoscopy cases that were performed under caudal anesthesia, as well as 21 other operations involving the kidneys, the urinary pathways, hernias, and the appendix. Large doses of 1% procaine were used – 15 ml for a 5 kg infant and then incremental increase of 5 ml for each additional 5 kg to a maximum dose of 50 ml for a 35 to 50 kg individual. In 1962, Dr. Peter Siegel of Rio de Janeiro, Brazil published his experience with caudal anesthesia with 124 children who were 2 days to 14 years of age. [3] Sedation was initiated with IM sodium pentothal; the block was performed in the routine manner using a 22 or 24 gauge 1 to 1.5 inch short beveled needle. Dr. Siegel used lidocaine, tetracaine or a combination of the two, in various concentrations. No complications were attributed to the technique. His failure rate was 23%; 20% of those failures were due to the surgery lasting longer than the block, not to an innate problem with the block. During this same time frame, another Brazilian, Dr. Armando Fortuna, also developed and utilized caudal anesthesia for pediatric surgery, publishing in the English literature in 1967. [4] The second paper was a series of 170 infants and children ranging in age from 1 day to 10 years. Most patients were healthy. Lidocaine was used in various concentrations from 0.5 to 2 %. Doses ranged from 10-15 mg/kg. The success rate was over 90%, with ~5% frank failures and ~5% of his cases requiring supplementation. Complications included subarachnoid block, seizures, and apnea.

F. G. Ruston of Hamilton, Ontario, Canada published a series of articles on epidural anesthesia for pediatric surgery from 1954-1964. [5-7] Primarily concerned with the lumbar route, caudal anesthesia is mentioned in one of the three papers. As noted by Fortuna, Campbell and Rushton, very little was available in the literature regarding pediatric caudal anesthesia at this time. And yet, by 1970, caudal and epidural anesthesia had been combined with general anesthesia for a variety of procedures. O. Schulte-Steinberg and V.W. Rahlfs of Munich, Germany studied the spread of caudally administered local anesthetics to determine safe dosing schedules for their patients. This work was published in the British Journal of Anaesthesia in 1970. [8] They were able to postulate a regression equation using age, height and weight to determine a dosing schedule. In the past, doses had been calculated based on weight alone, age alone, height alone, and various combinations. In 1974, Dr. B. Kay of the Derbyshire Hospital for Sick Children was doing caudal blocks for circumcisions. [9] He used 0.5% bupivacaine after an induction dose of ketamine and atropine. After the block was placed, general anesthesia was maintained with nitrous oxide, oxygen, and halothane. In 1977, Dr. S. Z. Hassan of the University of Chicago reported 70 cases of caudal anesthesia for a variety of surgical procedures. [10] He used 7 mg/kg of 1.5 % lidocaine or mepivacaine. One case of local anesthetic toxicity was reported. Infants over one year required sedation to keep them still; younger infants did not. E. N. Armitage of Great Britain published a half-page report in Anaesthesia in 1979 entitled "Caudal block in children." [11] He outlined his use of caudal block for surgery below the umbilicus in combination with general anesthesia. Only light general anesthesia was required, and the children remained pain free for several hours after the surgery ended. Dr. Armitage used 0.25% bupivacaine, in doses ranging from 0.5 to 1.25 ml/kg, depending on the height of the block required. In over 1100 cases no significant complications occurred. By the 1980's, caudal anesthesia was routine and a group, which included Dr. O. Schulte-Steinberg, advocated thoracic epidural anesthesia by the caudal route. [12]

Conclusion

Dr. Campbell introduced caudal anesthesia in infants and children in 1933. Despite a report by Dr. Sievers in 1936, the technique remained unused for 20 years until Dr. Rushton in Ontario, Canada published his experiences with caudal anesthesia in 1954, 1957 and 1964. Several papers were published in the 1960's and 1970's and by the 1980's, caudal anesthesia was in widespread use and perhaps taken for granted. Dr, Bernard Dalens and Dr. Abdou Hasnaoui in France reported 750 cases of pediatric caudal anesthesia and a success rate of 94%. [13]

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The Expansion of Practice by Mid-level Practitioners, an Historical Perspective

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This paper was inspired by the Santayana quote, "Those who cannot remember the past are condemned to repeat it." An historical episode in the expansion of scope of practice will be compared to the contemporary efforts by nurse anesthetists to expand their scope of practice. Encroachment into the practice of medicine by mid-level practitioners is an important issue in anesthesiology today and may be a harbinger of things to come for medicine. I researched historical examples of expansion of practice by mid-level providers and chose the struggle between the Worshipful Society of Apothecaries and the Royal Society of Physicians as an instructive example. This presentation briefly chronicles changes in the status of the apothecaries from 1617 when they were granted a charter separating them from the grocers' City Livery Company of London, to the court ruling in 1704 giving apothecaries the right to practice medicine and ending with the passing of the Apothecaries Act of 1815 when the apothecaries were placed in charge of all general medical practice in England. The political climate, social forces, and the ineffective opposition by the royal College of Physicians are covered in this paper.

The mechanics of this very successful expansion of the scope of practice will be explored and emphasis will be placed on social forces that advanced the apothecaries and the political factors that prevented physicians from stopping the expansion of practice by the apothecaries.

The presentation will conclude with a comparison between tactics of the apothecaries and tactics of nurse anesthetists to expand their scope of practice.

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"HATCH": A FAILED AQUALUMNUS

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When discussing graduates of the University of Wisconsin (UW) anesthesia training program led by Dr. Ralph Waters (Aqualumni), there is a presumption that graduates who became department chairs were "good" chairs. This means they would have carried out the Waters' triad of student teaching, excellent clinical care and research. This paper provides the first report of a UW graduate who failed as a chair. This was Hubert "Hatch" Hathaway, MD, the third chair of anesthesia at the University of California (UC), the leading medical institution in the state. Resource material was the Waters' papers at UW and the Wood Library-Museum, the Chauncey Leake papers at the UC San Francisco (UCSF), letters from other Aqualumni, and various AMA directories.

Dr. Mary Botsford, first chair of anesthesia at UC, was forced to retire in 1931when she reached the UC retirement age of 60. Her trainee and colleague Dr. Dorothy Wood then took over. (Ironically, Dr. Wood was actually the same age as Botsford. During the 1906 earthquake and fire, many records were destroyed. Dr. Wood advanced her birth date at that time.) As the strengths of the Waters' program became clear to academic surgeons nationally, the formidable chair of surgery at UC, neurosurgeon Dr. Howard Nafzinger, was determined to have a Waters-trained anesthesiologist as the next chair. However, there was no immediate, available candidate in the UW program.

Hathaway was a 1933 graduate of the University of Cincinnati Medical School and did his internship at UW. He had to rotate on anesthesia and became interested in it. He became an official resident, with a 3-year Regents' appointment, in 1934. He then became a faculty member, after spending six months with Rovenstine at Bellevue. He participated in all the department activities, including giving talks in outside institutions, doing research and writing scientific papers, and so was very familiar with what a Waters-trained chief might do. As Nafzinger turned up the pressure on Waters for a chief for UC, Hatch was the most likely candidate. Waters however wanted to hold Hatch back, to try to deal with the problems of Hatch's temper and frequent arguments with the surgeons.

Nafzinger appeared in Madison at the end of 1939. He interviewed Hathaway; negotiations continued by mail. Hathaway arrived in San Francisco July 1, 1940, to assume the position of chair of anesthesia at UC for a salary of $6,000/year. (Like nearly every other department in the US then, anesthesia was a division of the department of surgery.) There was however no office or secretary and would not be for another 5 years. Initially he was very successful. His cases went well, he was cautious about introducing new techniques and his clinical teaching was appreciated. In a letter to Waters August 26, 1940, there was a hint of what to was to come: *"I have been kept quite busy with clinical work and have had little opportunity to do anything else."* He was also active, with Dr. William Neff of Stanford, in forming a new Northern California Society of Anesthesiologists. There was extensive correspondence with Dr. Waters, usually seeking advice.

Then World War II came. Like all U.S. hospitals at the time, staffing problems became acute at UC. To cope with this difficult situation, Hatch began a descent into barbiturates, alcohol and inhaled anesthetics (cyclopropane). There were several unexplained patient deaths, and he was found asleep at the head of the table more than once. His speech was garbled and he became unable to lecture. Numerous reports of this behavior reached Waters, who stated in a March 1945 letter, *"I'm sorry about H. He was too young and inexperienced for the job and perhaps too conscientious."* The death of the son of the chief of pediatrics during an appendectomy was the denouement. Hatch was given a 6 month leave, which he took in a rehabilitation setting in Texas. As that ended, Waters wrote him that it would be impossible for him to return to San Francisco. It is still not known exactly what he did after this recovery period, or if he ever relapsed. According to Dr. William Neff, the Aqualumni paid for his rehabilitation; no documentation of this has been found. He died in 1972.

After the long tradition of excellence in anesthesia established by Dr. Mary Botsford, this failure was a true disaster for the specialty at UC. There was now no institutional interest at all in academic anesthesia. Dr. John Murphy, a Canadian who had served in US Navy, was appointed chief of anesthesia from1946 through 1957. He provided a stable of nurse anesthetists to give service, the first time nurses had been used for anesthesia at UC. A residency also existed but was grossly deficient and not approved in 1957. The next year, Dr. Stuart Cullen came from the University of Iowa to be chair of anesthesia. Anesthesia became a separate department, and modern anesthesia began at this important institution, nearly 20 years after the first attempt. Failure then was due to an overwhelming clinical load as WW II took needed staff, lack of institutional support for anesthesia and Hathaway's own personal demons.

HISTORY RESOURCES ON THE NET!!

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Anesthesia History

*anes-hist@gasnet.med.yale.edu
Discussion group started in 1995. To subscribe, send a message to listproc@gasnet.med.yale.edu that says subscribe anes-hist yourname

*Anesthesia History Association
Official site: www.anesthesia-history.org [under construction]
Current site: www.anes.uab.edu/anesthesia_history_association.htm

*Anesthesia History Files
www.anes.uab.edu/aneshist/aneshist.htm

*Anesthesia and Pain History on the Internet
www.anes.uab.edu/aneshist/anesnet.htm

*Wood Library-Museum of Anesthesiology
www.asahq.org/wlm/

Medical History

*History of the Health Sciences World Wide Web Links
www.mla-hhss.org/histlink.htm

*Specific Topics in the History of Medicine
www.med.vu.nl/org/afd/metamedica/history/links_topicrelated.html

Discussion Forums:

*CADUCEUS-L
Established in May 1992 by Inci Bowman, PhD, this electronic discussion list is devoted to the history of medicine. Now moderated by Rich Behles, the list has more than 750 subscribers. To subscribe, send the message "subscribe CADUCEUS-L" [without the quotes] to listserv@list.ab.umd.edu

*H-SCI-MED-TECH
Established in February 1997. One of the large family of H-Net family of discussion groups at www2.h-net.msu.edu/ all of which are carefully moderated. H-Net is the Humanities and Social Sciences Online project based at Michican State Universtiy. To subscribe send the message "sub h-sci-med-tech firstname lastname institution" {without the quotes} to listserv@h-net.msu.edu; the list also has a WWW site at www2.h-net.msu.edu/~smt/

*ishm
Established in September 1996, "ishm" is the official electronic discussion list for the Interational Society of the History of Medicine. Non-members of ISHM are welcome to subscribe. Moderator is Plinio Prioreschi (plinio@ creighton.edu). To subscribe, send the following message to majordomo@ creighton.edu:

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