Finding Aid to The Robert A. Hingson Collection

The Wood Library-Museum of Anesthesiology

Collection processed and Finding Aid compiled by Judith A. Robins, CA, Collections Supervisor – May 2000

Finding Aid encoded by Felicia A. Reilly, MALS, Archivist - March 2008

Biographical Sketch by Henry Rosenberg, M.D.

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COLLECTION SUMMARY

Title:
Finding Aid for The Robert A. Hingson Collection

Collection number:
MMS 10

Repository:
The Wood Library-Museum of Anesthesiology
520 N. Northwest Highway, Park Ridge, IL 60068-2573

Creator:
Robert A. Hingson, M.D.

Accession number:
Address on envelope in collection (Jan. 13, 1995)

Extent:
Eleven folders

Language:
Most of the material is in English; One article is in Spanish.

Processing Information:
This collection was processed by Judith A. Robins, CA., Collections Supervisor in May 2000.
Robert Andrew Hingson, M.D., was not only a pioneer in anesthesiology, renowned for his introduction of peridural analgesia during labor and delivery, but was also recognized for his contributions to humanity outside his specialized field. In the field of public health, he enabled millions of people to be immunized against a wide variety of diseases in a relatively painless and efficient manner because of his development of the jet injector. Hingson also established the Brother's Brother Foundation, a volunteer, interfaith group dedicated to linking America's vast resources to global health care needs.

Early Medical Training

Born in 1913 in Anniston, Alabama, Hingson's interest in studying medicine grew as he witnessed the plight of poor African Americans and their disproportionate number of deaths by disease. After graduating from Emory University School of Medicine in Atlanta, Georgia in 1938, Hingson interned at the U.S. Marine Hospital on Staten Island, New York, and then joined the Coast Guard as a Public Health Officer. While serving in the North Atlantic before America entered World War II, he ministered to then Treasury Secretary Henry Morgenthau returning from a secret mission to Europe. When Morgenthau sought to reward Hingson for his services, he helped him obtain a one-year fellowship under John S. Lundy, M.D., at the Mayo Clinic.

Still assigned to the Public Health Service, after two years at Mayo, he returned to Staten Island in 1941 to become Chief of the Department of Anesthesia at the U.S. Marine Hospital. Because a large number of wives of enlisted men were served by this facility and since his own wife was pregnant at the time, he became interested in solving the problem of pain in childbirth at the newly converted obstetric hospital.
Development of Continuous Caudal Anesthesiology

Having observed the analgesia produced by a single peridural injection of a short-acting agent into the lumbar area when the cervix was fully dilated, Hingson and an obstetrician colleague, Waldo B. Edwards, M.D., realized the need to develop methods of pain relief throughout prolonged or difficult labor. They decided to combine the advantages of continuous spinal anesthesia with the safety, simplicity and effectiveness of extradural nerve block by using the sacral hiatus approach to the peridural space. Securing the hub of the malleable needle to rigid rubber tubing, the anesthetic agent could be introduced with the patient in her hospital room, uninterrupted during transfer to the delivery site and easily maneuvered for preparation, delivery and, if necessary, episiotomy. Of course, the needle was left in the caudal canal, and the patient labored in the decubitus position.

Because of the impressive results, Hingson suggested continuous caudal block for traumatic surgery, including at the battlefront, and his techniques were later extended to the upper abdomen by increasing the amounts of the injected solution.

Hingson was encouraged to publish his findings by Morris Fishbein, M.D., then Editor of the *Journal of the American Medical Association*. Eventually, an extensive body of writing evolved and Hingson received invitations to hold clinics in obstetric analgesia throughout Europe, Canada and the United States.

Still in the Public Health Service, he transferred to the Philadelphia Lying-In Hospital, a unit of the Pennsylvania Hospital, where he established an obstetric analgesia service. He was next assigned to the University of Tennessee School of Medicine to investigate the 13-percent infant mortality rate in Memphis. He established the university’s first department of anesthesiology, while reversing the trend of newborn deaths.

Hingson was next assigned to the Johns Hopkins University, Baltimore, Maryland, where he promoted the replacement of general anesthesia with regional anesthesia for deliveries. Retiring as a public health officer in 1951, he became the first professor of anesthesiology at Western Reserve University School of Medicine, and director of anesthesia at the University Hospital of Cleveland, both in Cleveland, Ohio. There he developed a portable anesthesia machine, nicknamed the Western Reserve Midget, capable of providing instantaneous anesthesia for dentistry, obstetrics and surgery. His machine was also adapted as a ventilator for resuscitation by firemen, military personnel and rescue workers.
Development of the Jet Injector

During his time at Staten Island, Hingson cared for a merchant seaman whose hand was exposed to high-pressure trauma. The pressure had forced oil into the man's hand without a visible surface wound. Hingson was determined to utilize the phenomenon to develop a technique of injection. Working with an engineer, he designed the "hypospray," a two-cell-flashlight-size instrument constructed so that 125 pounds of spring pressure were projected against a plunger within a metal container. Pressures built up to approximately 3,900 pounds per square inch and projected a column of liquid through the orifice of the ampule at a velocity of 600 miles per hour. Because of the minute size of the orifice, only 11 g of pressure was developed by the jet. The high pressure forced fluid into the subcutaneous tissue without a break in the epidermis.

This high-velocity, microjet, injectable apparatus was first used clinically with local anesthetics, ephedrine, insulin and penicillin. The original hypospray underwent extensive experimentation in anesthetic administration and later for vaccination, evolving as an important public health instrument. For Hingson, the most important benefit of the hypospray was that it did not frighten children undergoing vaccination nearly as much as did a syringe and needle.

Production-line immunization began in 1956 when Hingson and his team inoculated children with the Salk vaccine in Cleveland, Ohio. Eventually more than 300,000 patients were immunized via jet injection, primarily against polio and influenza.

Brother's Brother Foundation

In 1958, in association with the Baptist World Alliance, Hingson and his team, with gifts of vaccines and transportation facilities from pharmaceutical firms, inoculated some 90,000 people throughout Asia and Africa against typhoid, cholera and polio. These large-scale medical missions were the impetus for his establishing the Brother's Brother Foundation (BBF), an agency now directed by his son, Luke. Robert Hingson left academic anesthesia in 1973 to devote his full time to BBF.

Today, along with medical and agricultural supplies, BBF receives yearly donations of millions of educational materials to be distributed to schools and medical institutions, and BBF's Intraocular Lens Program distributes and implants lenses to help restore vision to cataract sufferers.
Honors for Robert Hingson

Nearly every country in which Hingson served awarded him their highest humanitarian honors. He was nominated for a Nobel Peace Prize. He was a guest faculty member in anesthesia throughout clinics in Europe, South and Central America and in the United States. He was also honored by the American Society of Regional Anesthesia and was one of 19 recipients of the President's (Reagan) Volunteer Action Award.

Hingson’s monumental achievements were never officially recognized by ASA, probably because his major development was in the field of public health and the intensity of his effort took him out of the mainstream of ASA activities. He preferred the recognition that he received from the people who benefited from his efforts. ASA missed an opportunity to encourage and recognize one of its most innovative members.

Hingson and his wife, Gussie, had five children, all of whom accompanied him on overseas missions. He and Gussie retired to a farm in Ocilla, Georgia, where he died in 1996.

Reference:

Hingson RA, Edwards WB. "Comprehensive review of continuous caudal analgesia for anesthetists." Anesthesiology. 1943; 4:181-196 - CLICK TO VIEW PDF OF THIS ARTICLE. (This is one example of the many articles Hingson wrote on the subject in a variety of journals and monographs.)

At the time of this article's original publication in 1999, Henry Rosenberg, M.D. was Professor of Anesthesiology, Residency Director, and Vice Chair for Academic Affairs at Thomas Jefferson University, Philadelphia, Pennsylvania. He is currently Director of Medical Education and Clinical Research at Saint Barnabas Medical Center in Livingston, New Jersey, President of The Malignant Hyperthermia Association of the United States, and Professor of Anesthesiology at Mount Sinai School of Medicine in New York City.


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Further Information:

The John W. Pender Collection of the Living History of Anesthesiology

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INDEX TERMS

Subjects:

- Anesthesia, Epidural.
- Anesthesia, Obstetrical.
- Anesthesiologists—United States—Biography.
- Anesthesiology—History.
- Baccalaureate addresses—University of Alabama.
- Injections, Intradermal.
- Injections, Jet.
- Nobel Prize.
- Physicians—United States—Biography.
- Vaccinations.

Names:

- Hingson, Robert Andrew, 1913-1996.

Organizations:

- Brother’s Brother Foundation (Pittsburgh, Pa.)
- University of Alabama.
CONTAINER LIST

The Robert A. Hingson Collection is housed in eleven folders.

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Collins, Selwyn D., F. Ruth Phillips, and Dorothy S. Oliver, with the collaboration of R. A. Hingson, Norris Vaux, and Clifford B. Lull. “A Statistical Study of Delivery with Continuous Caudal Analgesia, as Compared with Other Methods.” Extract from Public Health Reports, Vol. 61, No. 48, November 29, 1946.


BIBLIOGRAPHY - CHRONOLOGICAL ORDER (Page 1 of 5)


Collins, Selwyn D., F. Ruth Phillips, and Dorothy S. Oliver, with the collaboration of R. A. Hingson, Norris Vaux, and Clifford B. Lull. “A Statistical Study of Delivery with Continuous Caudal Analgesia, as Compared with Other Methods.” Extract from Public Health Reports, Vol. 61, No. 48, November 29, 1946.


