The Homans Family in American Surgery

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Within the Homans family is a display of duty to country and service to humanity that is as old as our country, and the contributions of this American family should not go unappreciated. In addition to the Homans’ sign, 5 generations of John Homans have contributed much to our current understanding and practice of surgery. Herein we briefly outline the contributions that the Homans family has made to American surgery.

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Like many eponymous names in medicine, the Homans’ sign is referred to often with few knowing much about its origin. Two surgeons named John Homans spent decades teaching and practicing at the Massachusetts General Hospital and the Peter Bent Brigham Hospital (which became the Brigham and Women’s Hospital in 1980) in Boston, yet few there are even familiar with these men. The history of the Homans family is truly a remarkable story that parallels the birth and development of surgery in the United States. Indeed, for students of surgery, the Homans name should be associated with not only pain with passive ankle dorsiflexion but also with innovation and a selfless dedication to service within the fields of medicine and surgery.

THE HOMANS FAMILY IN EARLY AMERICA

The first John Homans to become known in the family’s history was born in 1703 in Kent, England, into a family that may have been of Dutch origin. He left the family’s farm at the age of 15 to take a position as clerk in an importing house in London. He graduated from this position to that of sailor and eventually captain of a merchant ship sailing between England and New England. Benjamin Franklin mentions a chance encounter with Captain Homans on the Isle of Wight in his writings.1 Captain Homans is also credited with bringing the first Harvard-owned microscope during one of his voyages.2 Captain Homans married the English-born Hannah Osborne in Bristol, Rhode Island, in 1725.

By 1739, Homans had transitioned from sailing to farming and trading and had purchased 2 properties: one in Milton, Massachusetts, and the other in the Mount Bowdoin area of Dorchester, the latter located on a hill which had an extensive view of the Boston Harbor. Hannah died childless in 1747 and in 1748 Homans married his second wife, Rebecca Gray. Together they had 11 children, but 7 died at a young age. Only 4 children—John II (born 1753), Thomas, Stephen, and Lucy—survived to adulthood. A portrait painted by Joseph Badger depicting the eldest son, a 2-year-old John Homans, holding a silver rattle may be testament to the wealth and status the family had already achieved by that time. John Homans II attended the Boston Latin School and graduated from Harvard College in 1772. He then studied medicine with Dr Joseph Gardner and became an acquaintance of Dr Benjamin Church, Jr, the first Surgeon General of the US Army.

Both Captain Homans and his son John took active roles in the American Revolution. Captain Homans voted for the Suffolk Resolves, a 1774 statement which promised a boycott of British goods until legislation giving British control over the local Massachusetts government was repealed.3,4 In March of 1776, the family’s Mount Bowdoin property served as the meeting place for George Washington and his staff when planning of the capture of Dorchester Heights. In April of 1775 Dr John Homans II cared for the casualties of the Battle of Lexington and Concord, and in January of 1776 he cared for casualties of the Battle of Bunker Hill.4

Captain Homans died in a hay field in 1778 at the age of 74 and never witnessed the end of the war of the American Revolution. After his father’s death, John Homans II sold the family’s property and began a medical practice on Marlborough Street in Boston. He married Sarah (Sally) Dalton, daughter of Irish immigrant James Dalton, in 1785. Together they had 1 son, John Homans III, and 1 daughter, Sarah, who died in infancy. By 1798, at the age of 45, he was becoming ill. In June of 1800, he set out on a sea voyage in an attempt to remedy his health but died at sea within days of this voyage. He was well regarded as a physician. A biographer of the time wrote as follows:

[H]e received from nature a great share of good sense, which was well cultivated, and as a physician he was much employed and highly approved, being considered inferior to no one of his age. He discharged the duties of his profession with tenderness and humanity, and to the poor with disinterested benevolence.5

Dr John Homans III

John Homans III (Fig. 1) was born on September 17, 1794, in Dorchester, Massachusetts. He was only 7 years old when his father, John II, died. He graduated from Phillips Andover Academy, then Harvard College in 1812. He was 1 of 15 graduates of the Harvard Medical School Class of 1815 and went on to practice medicine in Worcester, Bromfield, and Boston, Massachusetts. John Homans III married Caroline Walker soon after graduating medical school, and together they had several children. Their first child, named John, drowned at the age of 17. Dr Charles D. Homans and George H. Homans were the 2 oldest surviving children. Their youngest surviving child, also named John (subsequently referred to as John Homans IV), was born after the drowning death of the elder son John.

John Homans III served as the 20th president of the Massachusetts Medical Society from 1859 to 1862. It was to this group he delivered the address “Character and Qualifications of the Good Physician,” in which he discusses the importance of not only scientific...
knowledge (including physiology, mechanics, optics, hydraulics, and pneumatics) but also character qualities such as sympathy, honesty, decisiveness, self-reliance, and “independence of mind”. In addition to his activities in the medical community, he also volunteered his time in many civic activities, local government and the Bunker Hill Monument Association. He died in 1868 at the age of 75 after a fall down a staircase in his home. He was described as having “the highest characteristics which adorn and elevate man—those which emanate from the pure, upright, conscientious performance of life’s duties.”

Dr John Homans IV and Abdominal Surgery at MGH

John Homans IV (Fig. 2) was born in Boston in 1836. After graduating from Boston Public Latin School and graduating from the Harvard College Class of 1858, he attended Harvard Medical School. While there, he first began thinking of the possibility of performing an “ovariotomy” (ovariectomy) after finding an ovarian tumor at the autopsy of a woman who died after several years of progressive “pressure and dropsy” (edema). Despite the first successful laparotomy having been performed some 40 years earlier by Ephraim McDowell, the performance of a diagnostic laparotomy was “not dreamed of” in this era before the advent of antiseptics and ether anesthesia. These challenges and the recent outbreak of the American Civil War forced him to postpone any thoughts of working further on the problem of ovarian tumors. So, after spending 1 year as a house pupil at the Massachusetts General Hospital from between 1861 and 1862, John Homans IV graduated Harvard Medical School with the Class of 1862 and joined the Armed Forces.

In February 1862, he began his military service. He was initially commissioned in the US Navy after having chosen this branch “because he had been fond of yachting” and served as an assistant surgeon on the USS Arnoostook, a steam-powered gunboat. Disappointed with the “confined” and lack of surgical experience aboard this ship, he requested and received a transfer to the US Army. He was sent with the 19th Massachusetts Volunteer Infantry to New Orleans a few months after it was seized by the Union Army. In New Orleans, he served at the St James Hospital, a Union infirmary (and now a boutique hotel) but also attended to sick and wounded Confederate prisoners. Toward the end of his military service, he served as surgeon-in-chief of the Nineteenth Corps in Shenandoah Valley under General Sheridan. He resigned from Army service in 1865. He spent time between August 1865 and November 1866 in Vienna, Paris, and London learning from European surgeons. Upon his return to the United States, he married Helen Amory Perkins, and together they had 3 sons and 3 daughters.

He then returned to the Boston area and began his career as a general practitioner. His first attempt at an ovariectomy in 1872 led to the death of the patient, as did additional 4 attempts between 1873 and 1875. His next attempt, undertaken in 1877 using carbolic acid (phenol) spray for antisepsis, was successful. Excited by this success, his oophorectomy volumes increased over the subsequent years, growing to 45 in 1882. During this time, he also began pioneering the technique of hysterectomy; as with ovariectomies, his volume and success increased, and by 1887 he had performed 27 cases with a 63% survival rate. In contrast to contemporary abdominal surgeries, these earliest abdominal operations were all performed in patient’s homes. The first he performed in Carney Hospital in 1882 represented the first inpatient abdominal surgery in Boston. As his ovariectomy volume grew, he transitioned his practice to St Margaret’s Home, a private infirmary founded in the convent and adjoining buildings of the Sisters of Saint Margaret in Boston’s Louisburg Square (Fig. 3).
His association with the Massachusetts General Hospital began with an appointment as outpatient surgeon. This association soon grew much stronger, as the latter half of Homans’s career appears to have been devoted predominately to teaching and clinical practice at the Massachusetts General Hospital. Homans, along with other notable Boston physicians such as John Collins Warren Jr, MD, Frederick C. Shattuck, MD, David W. Cheever, MD, and Maurice H. Richardson, MD (himself an abdominal surgeon and former trainee under Homans IV during his years at Carney Hospital and St Margaret’s House), formed the core clinical teaching faculty for the Harvard Medical School. He often operated in the Bradlee Ward surgical amphitheater at the Massachusetts General Hospital, where his observations and teachings apparently catalyzed the acceptance and refinement of abdominal surgery at that hospital. Of note is that John Homans IV was among the surgeons at the Massachusetts General Hospital for whom the then medical student Harvey Cushing first administered anesthesia. He published his experiences in abdominal surgery in multiple reports to the Boston Medical and Surgical Journal (the predecessor to the New England Journal of Medicine) as well as a book on the topic. Although Homans was reportedly among the first physicians in the United States to consider himself a surgeon rather than a physician, he did maintain a “family practice” that included primary care and obstetrical deliveries.

Contemporaries and former trainees of Homans IV remembered him for his courage, energy, honesty, and sense of humor. He had only seen laparotomies in Europe before his attempts at abdominal operations, yet he would remain steadfast in “undertaking difficult feats of surgery.” Like an army general, he planned a difficult operation well beforehand—“often waking in the night and arranging in his mind its details”—and then forged ahead with the planned operation “with no idea of retreat or failure.” His energy was directed at all aspects of patient care, and one might be as likely to find Homans operating as they were to find him “in his shirt sleeves hoisting a patient on the Crosby bed while the sheets were changed.” He had an honesty that extended not only to his interactions with others but also toward his reflections on his own works. His contemporaries noted not only would he share his self-criticisms with his patients but that his “transparent honesty was so winning a trait that it strengthened no matter how greatly the hold he had on his [patients and colleagues].” He was described as the “best of company” because of his frankness, wit, and “charming bonhomie.”

During his career, John Homans IV was a member of the Boston Medical Association, the Medical Benevolent Society, and the Boston Society for Medical Improvement. Like other members of the Homans family, John Homans IV also participated in a multitude of civil activities. In June 1902, and at the age of 66, John Homans IV resigned from the faculty of the Harvard Medical School after 21 years of teaching. He died in Boston in February 1903.

Dr John Homans V and the Beginnings of Vascular Surgery

John Homans V (Fig. 4) was 1 of 6 children of John Homans IV. As did the previous 3 generations of John Homans, he graduated from Harvard College in 1899 and as class valedictorian from Harvard Medical School in 1903. He then served for 5 years as a “house pupil” at the Massachusetts General Hospital under Maurice Howe Richardson, MD, a well-known Boston surgeon and former trainee of John Homans IV. From Richardson, Homans learned not only surgical skills but also the core tenets of the physician-patient relationship. It was Richardson who recommended that Homans temporarily leave Boston to get additional training elsewhere. In 1908, Homans chose to do so at the Hunterian Lab in Baltimore with Harvey Cushing, MD, a fellow Harvard Medical School graduate who was 8 years his senior. Together with Cushing and Samuel J. Crowe, MD, Homans produced a seminal publication that elucidated the role of the pituitary gland through their work on experimental canine hypophysectomies. He then returned to the Massachusetts General Hospital as a staff surgeon.

In 1910, Cushing had been appointed to the staff of the yet unbuilt Peter Bent Brigham Hospital (currently the Brigham and Women’s Hospital) in Boston. Homans was among the first surgeons Cushing recruited in 1912 for a full-time teaching appointment for the new hospital. While awaiting completion of the hospital’s construction, he spent a year with Professor Starling in London. Upon his return to Boston in 1913, he married and took his position as the third of 3 full-time surgical teaching faculty at the Peter Bent Brigham Hospital, marking the beginnings of a new chapter in his family and professional life.

With the exception of military service at an evacuation hospital in Europe between 1918 and 1919, Homans’ professional work was almost exclusively focused at the Brigham for nearly 3 decades. His early years were characterized by clinical practice, experimental research work, and publications on a wide variety of surgical topics. At the suggestion of Harvey Cushing, he began working on what was to become A Textbook of Surgery in 1924. The first edition of the

![FIGURE 4. John Homans V (from the Yale Medical Library, with permission).](image-url)
Homans made many original contributions to the field of surgery and the understanding of venous disorders. Perhaps most important was the observation that pulmonary emboli were complications not of thrombophlebitis or phlelegmasia alba dolens but rather “bland” thrombi of the deep veins of the leg—that is, thrombi that typically cause only subtle symptoms such as mild or moderate edema. This association between deep venous thrombosis was made partly on clinical observation and partly on autopsy findings of “enormously long, insecure thrombus which had been waving, as it were, in the [venous] current.” Ligation of the femoral vein in the groin below the saphenofemoral junction was recommended by Homans for these cases, a practice which was widespread before the availability and adoption of anticoagulant medications.

Homans had also noted that patients with deep venous thrombosis commonly had decreased passive range of motion with ankle dorsiflexion. Pain often accompanied these movements, likely due to thrombosis-induced inflammation of the muscles of the posterior calf. Homans himself referred to these findings as the “dorsiflexion sign” and as an indication of the presence of deep venous thrombosis. These use of the term “Homans sign” for these same findings was apparently initiated by a group of Massachusetts General Hospital surgeons and popularized by a 1943 publication by this same group. This group’s dedication of this physical examination finding to Dr Homans is perhaps testament to both his clinical acumen and his dedication to teaching.

Other contributions to the understanding of venous disorders included recognizing the importance of perforator vein incompetence to the development of venous ulcers; the developing a classification system that incorporated perforator vein incompetence; and advocating for ulcer excision, perforator vein ligation, and skin grafting as a treatment for venous ulcers. Homans also had an interest in lymphatic disorders. In 1936, he published his refinements to Auchincloss’s excisional approach to “elephantiasis nostra” (secondary lymphedema) in a series of staged operations for lymphedema. In this operation, the edematous, lymph-filled subcutaneous tissue of approximately one quarter to one half of the circumference the leg was excised at each of 2 to 4 stages. A thin skin flap that was preserved was approximated to the superficial muscle fascia of the calf for closure. This technique was subsequently referred to as the Homans or Homans/Auchincloss operation and is still performed, though infrequently.

Homans spent a year between 1936 to 1937 as a visiting professor at Yale University. This single year apparently made a very lasting impression there, reportedly becoming “one of Yale’s most popular and best remembered teachers.” An oil painting portrait still hangs in the medical library there as a remembrance of this visit. After his time at Yale, he completed work on the book Circulatory Diseases of the Extremities, published in 1939. He transitioned from full-time faculty surgeon to consulting surgeon at the Brigham in 1940, acting surgeon in charge of circulatory diseases in 1943, and emeritus surgeon in 1946. Although limited in his function by health problems (including angina and severe left leg claudication) during his later years, he continued to attend clinics at the Brigham and teaching rounds at the Boston Veterans Hospital until his last week of life. When Homans developed chest pain after attending a medical school reunion dinner, he was admitted to the Peter Bent Brigham Hospital as a patient. Nine days later, he died a peaceful death there in the hospital to which he had dedicated so much of his professional life. He was survived by at least 1 child, John Homans VI, MD, who also graduated from Harvard Medical School, served in the Pacific theater during World War I, and spent his career as an internist in Brookline, Massachusetts (Margaret Homans, PhD, written communication, 2011).

Like his previous namesakes, Dr John Homans V was perhaps best known for his honesty, modesty, and sense of humor. He was, like Homans IV, often referred to as both “Honest John” and “Uncle John” and has been described as “totally devoid of guile.” This honesty won him the trust and admiration of countless patients and many loyal friends, including Harvey Cushing and Ernest Amory Codman, MD—the Massachusetts General Hospital surgeon recognized as an early champion of measuring and publishing outcomes. Perhaps the modesty for which he was known was a byproduct of this honesty, making one well aware and accepting of the “foibles, wit and fun” of himself and his fellow humans.
of entertaining anecdotes, his witty humor and candid observations—often deliberately highlighting his own idiiosyncrasies—apparently made him entertaining company.20

Finally, his honesty seemed also to have extended to his understanding of medicine, as he “detested intellectual or factual dishonesty” and often challenged or at least doubted assumptions or other forms of “half knowledge that pervades so much of Medicine.”20 His intellectual honesty and modesty may have translated well to his teaching efforts, as he was clearly a favorite among the Harvard Medical School teaching faculty of the era.18

In contrast to Cushing (and countless other notable surgeons of subsequent periods), Homans was decidedly not a workaholic. During his time at the Hunterian Laboratory in Baltimore, Homans wrote:

Cushing was devoting himself more and more at this time to brain tumors . . . It seemed impossible for him to get home at the end of a day’s work . . . I had never seen anyone work like Cushing before and found it difficult to believe that he could enjoy life on this basis, but, as far as I have been able to discover since, his pace never varied, unless it became accelerated.11

Indeed, friends and contemporaries consistently recount the wide variety of outside interests hobbies in which Homans wound often engage, including grouse hunting, fishing, sailing, arborsim, playing squash and bridge, reading, and woodworking. He was an ardent fan of the Boston Red Sox and operettas by Gilbert and Sullivan.

The memory of John Homans V continues on in several memoirs. The fellowship in vascular and endovascular surgery at the Brigham and Women’s Hospital, one of the oldest accredited vascular surgery fellowships in the country, is named the John Homans Fellowship. The fact that the majority of graduates from this program hold academic positions is a testament to the academic tradition of this program and the Brigham and Women’s Hospital. A library of surgical texts near the main entrance of the hospital is named the Homans Library and is among other reminders of the Homans legacy at the Brigham and Women’s Hospital (Fig. 5). Finally, the Society of Vascular Surgery established the John Homans lectureship at their annual conference in 1951. This inaugural Homans lecture was given by Daniel C. Elkin, MD, of Emory University. Eight subsequent lectureships have been awarded to some of the most innovative leaders in the field of vascular surgery,26 including Rene Fontaine, Clarence Crafoord, John Kirlkin, Robert Linton, Michael E. DeBakey, E. Stanley Crawford,27 Jesse Thompson,28 and, most recently, Larry Hollier.

CONCLUSIONS

Most clinicians know the Homans name only as a physical examination finding, but to all the family name should also represent “the honor and fullness” that can be achieved through selfless dedication to the practice of surgery that this family embodies. Six uninterrupted generations of John Homans cared for countless patients, including the American soldiers of 4 wars. The careers of 2 particular Homans—John Homans IV of the Massachusetts General Hospital and John Homans V of the Brigham and Women’s Hospital—have contributed much to progress in the fields of abdominal surgery and peripheral vascular surgery, respectively. The character and personal virtues that the Homans family exemplified may be one of the predominant reasons for their achievements. Through the various references to their name that remain in use today, we hope that the Homans family will remind us of the rewards of a career in surgery.

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REFERENCES