

Benjamin Castleman (1906–1982)

ROBERT E. SCULLY

BENJAMIN CASTLEMAN (figure 8.1) was born in Everett, Massachusetts, on May 17, 1906, the eldest of three sons, to religious Jewish parents who had emigrated from Russia and owned a small grocery store. The family soon moved to Dorchester, Massachusetts, where, as a teenager, he worked, contributing his income to support the education of his younger brothers, who became lawyers and moved to Detroit to join a relative in a legal firm.

After high school, Castleman worked his way through Harvard College, gaining entrance despite the quota for Jews in existence at the time. He was unsuccessful, however, in his attempt to enter Harvard Medical School (HMS). Having a prosperous relative in New Haven with whom he could live, he applied to and was accepted by Yale Medical School, where he excelled. His idol and champion there was Dr. Milton C. Winternitz, Chairman of the Pathology Department and later Dean of the medical school.

Eager to return to the Boston area to practice medicine, Dr. Castleman volunteered to spend the summers of 1929 and 1930 as an unpaid assistant in the Pathology department at the Massachusetts General Hospital (MGH). He was accepted by Dr. Tracy B. Mallory, Chief of Pathology at MGH (see chapter 5). During his second year as a volunteer, he had an attack of rheumatic fever; there was no evidence of residual cardiac damage, according to Dr. Paul Dudley White, to whom he had been referred for evaluation.

Dr. Mallory assigned two projects to his pupil: the first a study of carcinoid tumors in the ileocecal region, and the other the organization of specimens that had been fixed in jars in a conference room. Dr. Mallory was impressed with Dr. Castleman's work on his projects as well as his popularity with other personnel in the department. Upon graduation from Yale Medical



Figure 8.1 Benjamin Castleman

School, Dr. Castleman applied to the MGH for an internship in pathology, and at the same time to Peter Bent Brigham Hospital and Johns Hopkins Hospital for a medical internship. Two months before he was to report to the MGH, he had a second attack of rheumatic fever, this one with arthritis of the left elbow and an apical systolic murmur. He apologized to Dr. Mallory because of his illness and expressed his eagerness to get back to work, but Dr. Mallory delayed his return and convinced him that he should pursue a career in pathology instead of medicine because of his heart disease. He trained at the MGH from 1931 to 1935.

In 1935, Dr. Castleman joined the MGH staff as an Assistant Pathologist. About that time he began to court his future wife, Anna Segal, who was four years younger than he. She was also the daughter of Russian immigrants, who were prosperous friends of his parents; she had graduated from Wellesley College in 1934. Ben and Anna agreed to stop dating until he earned a salary of \$4,500, which he attained in July 1937. They were married in December of that year. Anna was a charming, attractive woman who adored her husband; she was well known to his friends (including his staff, residents, and fellows) as a gracious hostess. The couple had three children, a son, who graduated from Harvard and became a medical computer entrepreneur, and two well-educated daughters, one of whom married a physician who became Professor of Medicine at Jewish Hospital in St. Louis, and the other who married a space physicist in Florida.

Preparation for Dr. Castleman's first major paper began when he was still a resident. Dr. Edward D. Churchill, Professor of Surgery, asked Dr. Mallory to appoint a resident in pathology (Dr. Castleman was selected) to locate and remove all four parathyroid glands for microscopical examination during 30 autopsies, in collaboration with Dr. Oliver Cope, the surgical resident chosen by Dr. Churchill. The two residents became close friends and later collaborators in

research. (Subsequently, residents doing autopsies were required to locate all four parathyroids and submit them for microscopical examination.)

In 1935 Drs. Castleman and Mallory coauthored the classic 73-page paper on the pathology of the parathyroid glands. This paper was the first of many published throughout Dr. Castleman's career that covered various areas of pathologic anatomy.

The most memorable of his publications were:

- Those on parathyroid disorders, about which he wrote many articles and two Armed Forces Institute of Pathology (AFIP) tumor fascicles, the second with his coauthor Sanford I. Roth (MGH).
- Those on diseases of the thymus and mediastinum, about which he wrote an AFIP tumor fascicle.
- A paper with V. Pardo (Cuba) and L. Iverson (AFIP) on a newly recognized lymph node disorder that led to the eponym "Castleman's disease," and a later paper senior-authored by Albert R. Keller (MGH) reviewing 81 cases of the disease and dividing them into hyaline-vascular and plasma cell types.
- Coauthorship with S. H. Rosen (AFIP) and A. A. Liebow (Yale Medical School) of the initial description of alveolar proteinosis.
- Coauthorship with David Korn (MGH) and others of a paper first reporting multiple minute chemodectomas of the lung.
- Coauthorship with A. A. Liebow (Yale Medical School) of a paper describing initially multiple clear cell (sugar) tumors of the lung.
- Many articles on the clinicopathological features of pulmonary vascular disorders, some written with the renowned radiologists Aubrey O. Hampton and Felix Fleischner (both MGH).
- Coauthorship, mainly with R. H. Smithwick (Boston University) of multiple articles on essential hypertension, proving that renal

arteriosclerosis is secondary to, instead of preceding and causing, the hypertension.

- A paper senior-authored by William M. Thurlbeck (MGH) reporting a high incidence of atheromatous emboli to the kidney after aortic surgical operations, which resulted in improvements in surgical techniques accompanied by a greatly improved survival.
- A series of papers on diseases of the heart and aorta, coauthored by P. D. White, Edward Bland, and other MGH cardiologists, reviewing large numbers of cases of various disorders, mostly confirming previous findings in the literature rather than presenting new observations.
- Coauthorship with Richard R. Kelley and Fairfield Goodale (both MGH) of an article on the dynamics of rheumatic and calcific aortic valve disease. (The article was based on construction of a machine into which a human heart could be inserted and made to contract, simulating contraction of a heart *in vivo*). Motion pictures of normal human hearts as well as those with valvular abnormalities were made. These movies were widely used at HMS and elsewhere in teaching cardiovascular pathophysiology.
- Papers on medical education, mostly dealing with the use of clinicopathological conferences (CPCs) for teaching medical students, residents, and senior physicians.

Dr. Castleman also authored the proceedings of two prestigious slide seminars (the 50th Anniversary of the American Society of Clinical Pathologists Seminar and the Penrose Hospital Slide Seminar). In these sessions he and other experts discussed in detail 50 and 15 cases, respectively.

Objectivity requires the admission that Dr. Castleman coauthored four papers on large-intestinal adenomatous polyps, concluding that they were not premalignant, a view shared by

another great pathologist, Dr. Lauren V. Ackerman (Washington University, St. Louis). Their opinion was eventually deemed incorrect by a great majority of pathologists and surgeons.

Many of these papers were written in the 23 years (1951–1974) during which Dr. Castleman was editing the Case Records of the MGH, which were published in the *New England Journal of Medicine (NEJM)*. Being Editor usually included presentation of the pathological findings of the case in addition to presiding at the exercise and editing the recorded version of the discussion. During his years as Editor, Dr. Castleman participated in almost 1,200 cases. His feats as Editor were celebrated in an *NEJM* editorial entitled “Ben Castleman—Champion of the CPC” (1).

After Dr. Mallory’s death in late 1951, Dr. Castleman initially became Acting Chief of Pathology. In 1953 he became the official Chief of Pathology at MGH (figure 8.2). As chief, Dr. Castleman was responsible for naming the hospital’s pathology laboratories when they were moved into a newly constructed building facing the Charles River in 1956. Before the move, he had reviewed Dr. James Homer Wright’s great contributions to pathology and medicine and suggested to the hospital Trustees that the entire building be named in Dr. Wright’s honor, but the Trustees preferred that the Warren family receive that honor, and that the new laboratories be named the James Homer Wright Pathology Laboratories. A spacious library on the second floor was named the Tracy Burr Mallory Memorial Library.

The move to the new building also marked Dr. Castleman’s establishment of two annual post-sophomore fellowships, during which a student spent half a year at MGH in diagnostic pathology, and the other half in research. The program yielded many leaders in pathology, oncology, and research, including one Nobel Prize–winner (J. Michael Bishop).

It is a testament to Dr. Castleman’s remarkable drive and work ethic as chief of the department

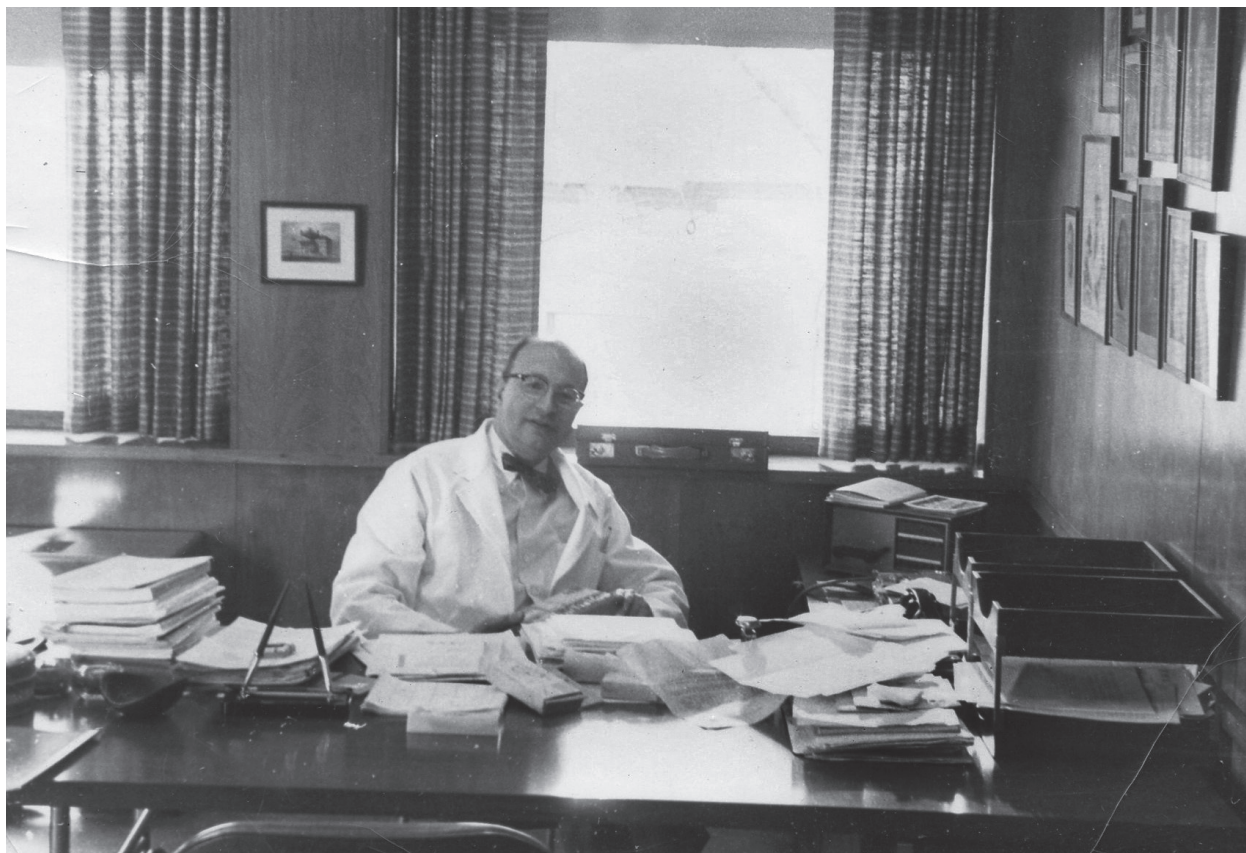


Figure 8.2 Benjamin Castleman in the chief's office, Warren Building (Photo courtesy of Fairfield Goodale)

that he was so productive a medical author and CPC Editor when he was also busy teaching at the MGH, HMS, and elsewhere in the world. Almost every workday he spent from 8:15 to 9:15 A.M. reviewing gross specimens from the autopsies of the previous day, along with the clinical history and pertinent radiologic films. His audience comprised the pathology residents and fellows and variable numbers of pathology staff members and clinicians. The emphasis was always on clinicopathological correlation and patient care. From 2:00 to 3:00 P.M. the same day, he was the maestro who conducted the surgical sign-out conference with verve and wit. After projecting the most interesting surgical slides of the previous day on a screen, he made the session exciting by challenging the residents to make the correct diagnosis. He often joked about the patterns of the stained slides on the screen. Occasionally

his wit was not as subtle as that of his audience. Once, while contemplating an appendiceal carcinoid tumor, he exclaimed: "What a beautiful tumor. I'd like to have a necktie with that pattern." An intern's instant retort was "I'd rather have the tumor!" Occasionally, if a staff member, having seen the slides directly under his microscope, disagreed strongly with the conference diagnosis, the dispute was settled by joint use of a microscope after the conference. As soon as the diagnoses were finalized, Dr. Castleman often telephoned one or more surgeons to guarantee that he would select the proper therapy. Predictably, not all of them appreciated the advice.

Dr. Castleman's busy schedule was also interrupted almost daily by receipt of one or more challenging cases in the mail for his expert opinion. Finally, he continued Dr. Mallory's practice of spending time in the residents' room to learn

more about each of them and to help them with any problems they might have had professionally or personally. He considered his residents “my boys” and helped them with their careers throughout their lives.

Unlike Dr. Mallory, who left Boston for professional reasons infrequently, Dr. Castleman travelled extensively to deliver lectures, conduct slide seminars, and discuss CPCs modelled on those given at the MGH. From 1951 to 1971 his destinations included many cities in the United States, as well as cities in Central America, Cuba, other Caribbean Islands, South America, Japan, India, Sri Lanka, Thailand, and Hong Kong. He was a dramatic speaker. He also made certain that the lay public as well as those in the medical profession grasped the great importance of his teachings.

Another of Dr. Castleman’s accomplishments was extending MGH pathology services to nonteaching hospitals that lacked an anatomic pathologist. These included Memorial Hospital in Worcester, Brockton Hospital, and Emerson Hospital in Concord. The MGH residents did autopsies and the staff did frozen sections at these hospitals. Eventually, the hospitals acquired their own Chiefs of Anatomic Pathology, beginning with Dr. Ronald Sniffen, who became chief at the Memorial Hospital.

Dr. Castleman’s remarkable quality was his self-confidence. On one occasion he confessed to Dr. Scully, “I love solving problems.” That proclivity was boundless in its extent and occasionally comical—when, for example he directed traffic in a snowstorm (2). At a more consequential level, Dr. Castleman led relentless and successful battles against the sale of tobacco products by the hospital’s gift shop, and later against the performance of radical mastectomy for breast cancer. The latter struggle had been inspired by his mother’s deformity and pain after that operation many years earlier.

Dr. Castleman also avoided committee meetings whenever possible. The ones he did conduct

were yearly sessions with the staff to select incoming interns. Otherwise, the closest he came to a committee meeting was when he called Austin Vickery and Robert Scully into his office on one occasion and asked their opinion about some thorny issue. They agreed on a solution, whereupon Dr. Castleman exclaimed: “That’s what I thought you’d say, so I already did it.”

When Dr. Castleman approached the customary retirement age of 65 in 1971, his staff organized a retirement dinner in his honor at the Harvard Club on October 29, 1971, that was attended by over 150 current and former colleagues and their spouses, as well as special guests.

Finding a worthy successor was not an easy task. After rejecting several out-of-town candidates, the search committee selected Dr. Robert T. McCluskey, who was then Chairman of Pathology at Boston’s Children’s Hospital. Dr. Castleman remained as Acting Chief until a new chief was appointed at Children’s Hospital in 1974.

In January 1972, after Dr. John Knowles left his position as General Director of the hospital to become Director of the Rockefeller Foundation, the hospital Trustees decided to appoint an Interim Acting General Director while searching for a new one. The obvious candidate for the temporary position was Dr. Castleman, who was admired throughout the hospital for his administrative as well as medical skills. He exceeded expectations in his new role (during which time he was still Acting Chief of Pathology) by reorganizing physician rules and practices, beginning the construction of new buildings, and, most important, obtaining a Certificate of Need and starting construction of the new Cox Cancer Center. In August 1972 Dr. Charles A. Sanders replaced Dr. Castleman as General Director.

During his career Dr. Castleman was showered with awards. He received honorary memberships in many South American and Central American pathology and medical societies. He was given a travel award from the Rockefeller Foundation

(1961) to improve medical education in countries in the Far East. (He did so energetically, as evidenced by the detailed reports of his activities that he submitted to the foundation.) In 1961 he also became President of the International Academy of Pathology (IAP). During his Far Eastern trip he enlisted many new divisions in the IAP, for which he received the FK Mostofi Award in 1981. In 1972 he delivered the prestigious Maude Abbott lecture of the IAP. He became Honorary Member of two Alpha Omega Alpha Honor Society chapters, one at Harvard and the other at Princeton University. He was awarded the Shattuck Professorship in Pathology at Harvard Medical School in 1979 and became an Honorary Fellow of the Royal College of Pathologists of Australia and the Royal College of Physicians and Surgeons of Canada.

There were four honors that Dr. Castleman

probably considered his greatest. He received an honorary doctorate in medicine from the University of Göteborg in Sweden because of his outstanding work in endocrine pathology in 1961 (figure 8.3). He was elected a Fellow of the American Academy of Arts and Sciences in 1960. The Benjamin Castleman Professorship in Pathology at Harvard Medical School was established in 1977. Finally, a Benjamin Castleman Young Investigator Award was funded by his former trainees and associates in 1980. The award is given annually, at the meeting of the United States–Canadian Division of the IAP, to a pathologist under the age of 40 who has published an outstanding article in the field of human pathology in the previous year.

Dr. Castleman had two major diseases during his lifetime, rheumatic heart disease and Waldenström's macroglobulinemia. His heart disease,



Figure 8.3 Benjamin Castleman receiving an honorary doctorate in medicine from the University of Göteborg in Sweden

accompanied by a mitral valve murmur, had been active sufficiently recently for the Army to reject his application to join Dr. Mallory in Europe during World War II. Greatly disappointed, Dr. Castleman successfully persuaded the U.S. government, the Rockefeller Foundation, and the Eli Lilly Company to award him funds to mail CPCs to all nine U.S. Army commands (see chapter 24) and to travel throughout the world to improve medical education.

Neither the rheumatic heart disease nor the Waldenström's macroglobulinemia diminished the extent of Dr. Castleman's achievements during his tenure as Chief of Pathology. The hematologic disorder ultimately led to his death, however, preventing completion of an investigation he was pursuing in the Pathology Department eight years after his retirement (a comparison of the results of large series of cases of breast cancer treated by radical mastectomy and those managed by more conservative surgery and irradiation).

In early 1982 Dr. Castleman's macroglobulinemia evolved into a malignant anterior mediastinal tumor. A biopsy gave him his last opportunity to solve a problem. The tumor was very malignant and had many giant cells. The staff members who were responsible for the diagnosis ordered immunohistochemical stains. Dr. Castleman could not wait, however, for them to be done. He left his hospital bed, hurried to the laboratory, looked briefly at the routinely stained slides, and exclaimed: "I don't care what the 'immuno' shows. It's a highly malignant lymphoma." As usual, he was right.

Shortly after the diagnosis was made, Harvard Medical School and Massachusetts General Hospital decided to activate the Benjamin Castleman Professorship and award it to Dr. Robert T. McCluskey before their esteemed colleague died. The event, which took place in mid-June, was for Dr. Castleman, Anna, his colleagues, and his friends a mixture of celebration and deep sorrow. Dr. Castleman listened smilingly to speakers praising him for all he had accomplished

and then, still smiling, thanked them for the opportunity to serve so great an institution as the MGH. Two weeks later, still alert mentally, he died suddenly.

Ben Castleman was greatly appreciated by his residents and associates because of his many fine qualities. He was generally a happy man, outgoing, optimistic, and loyal. He had a lifelong interest in how "his boys" were doing and always attempted to place them in the best positions he could find. Many of them had brilliant careers in research or teaching; almost all the rest had leadership roles in pathology throughout the world. Ben had strong convictions, and he did not hesitate to express them to achieve his goals. He read widely and was a stimulating conversationalist. He supported good causes and was a perpetual fund-raiser. He and Anna, who is still alive, often invited friends, colleagues, and the resident staff to their home. For all who worked with or under him or received his messages from one of his lectures or publications, he propelled pathology from the laboratory into the clinic with his credo: keep your mind on the patient's care as you look through the microscope. His name is perpetuated in the hospital he loved by the bestowal on his successors as Chiefs of Pathology the title Benjamin Castleman Professor of Pathology.

One would have to search far and wide to find a contemporary pathologist, if, indeed, one existed, who did more for his department, his hospital, and the medical world by elevating pathology to a vibrant clinical level than Benjamin Castleman.

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SELECTED PAPER OF
BENJAMIN CASTLEMAN, M.D.

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