

Ashley W. Oughterson, MD: Surgeon, Soldier, Leader

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Ashley W. Oughterson, MD, (1895-1956) was a longtime faculty surgeon at Yale University. He performed some of the earliest pancreatic resections in the United States. During World War II, Colonel Oughterson was the primary “Surgical Consultant” in the South Pacific and present at nearly every major battle. His meticulously kept diary is regarded as the foremost source detailing wartime surgical care. Colonel Oughterson led the initial Army team to survey Hiroshima and Nagasaki following the nuclear attacks. Throughout his academic career at Yale, Oughterson was a key leader in several medical and surgical societies. As scientific director of the American Cancer Society, Oughterson lectured widely and guided research priorities in oncology following World War II. Oughterson also authored numerous benchmark papers in surgical oncology that continue to be cited today. These extensive contributions are examined here and demonstrate the wide-ranging impact Oughterson exerted during a formative period of American surgery.

INTRODUCTION

Ashley W. Oughterson, MD, was a remarkable American surgeon and a leading clinician of the 20th century. He was a longtime faculty surgeon at Yale School of Medicine, a colonel and surgical consultant of the U.S. Army Medical Corps during World War II, a prominent leader in multiple medical societies, and the author of several seminal research papers that still resonate. While Oughterson’s untimely death at the height of his career has limited his posthumous recognition, his significant contributions to 20th century American surgery remain undiminished.

EARLY LIFE AND TRAINING

Ashley Webster Oughterson was born in 1895 to Nathan Oughterson and Mary Ann Hatch in the Finger Lakes region of upstate New York. Raised in the tiny village of Hall, a hamlet of the town of Seneca, Oughterson received his primary education in the nearby city of Geneva [1]. Due to his Scottish heritage, he was known to his acquaintances as “Scotty” throughout his life. He matriculated to Syracuse University and later attended

medical school at Harvard University. In his second year at Harvard, Oughterson earned a partial academic scholarship and graduated in 1924 [2].

Oughterson interned at the Peter Bent Brigham Hospital, where he first met Harvey Cushing. Cushing, often regarded as the founder of neurologic surgery, was already a legendary figure at that time, a stern disciplinarian who demanded that his trainees pay the utmost attention to detail, yet he was well-loved by his patients [3]. Following a second year of postgraduate training at Bellevue Hospital in New York City, Oughterson returned to Boston as assistant resident in surgery on the Cushing service at Brigham. Oughterson was exposed to Cushing’s style of practice, which affected him deeply. He excelled and was named the Harvey Cushing Memorial Fellow in Surgery at Yale University in 1928, initiating a long association with Yale that lasted until his death.

After a successful fellowship, Oughterson was appointed Assistant Professor in Surgery at Yale in 1929. Foreshadowing a lifetime of busy clinical practice, Oughterson had operating privileges at the New Haven Hospital (now Yale-New Haven Hospital), the Hospital

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of St. Raphael (now part of Yale-New Haven Hospital), and the New Haven Hospital Dispensary, which catered to the city of New Haven's poor and immigrant population [4]. Oughterson was a one-time Chief of Surgery at the Hospital of St. Raphael and also consultant surgeon to the West Haven Veteran's Administration Hospital in West Haven, Connecticut, later in life.

AN ACADEMIC SURGEON

Dr. Oughterson was promoted to Associate Professor in Surgery at Yale in 1934 (Figure 1). During this period in his career, Oughterson gradually came to be regarded as a surgeon of considerable technical proficiency, even among the distinguished group in practice at Yale. His initial academic efforts were focused on vascular surgery, with particular interest in vasomotor tone and the effect of tobacco on the vascular system [5-7]. In one paper of note, Oughterson reported on the effects of sympathectomy on blood supply in patients with Reynaud's syndrome and peripheral vascular disease [8]. Objective measurements supported the efficacy of the procedure, and Oughterson incorporated the procedure into his practice in the 1930s. One of Oughterson's most famous patients underwent the procedure in an attempt to salvage a gangrenous toe.

Harvey Cushing was lured back to Yale from Boston late in his career in 1933; however, by this time he was suffering a gradual decline in health with his peripheral vascular disease becoming particularly problematic. In November 1934, Cushing's left third toe became gangrenous and his former resident "Scotty" Oughterson was the attending surgeon. In an effort to avoid amputation, Oughterson and Chairman of Surgery Dr. Samuel Harvey attempted to temporize the situation by performing a local sympathectomy of the nerve roots in the affected foot under local anesthesia. As recorded by Cushing's biographer:

"H.C., supporting himself on his elbows, looked on over the drapes while the surgeons un- easily attempted to find the tiny nerve twigs. He thoroughly enjoyed the operation; it gave him satisfaction to watch and comment on his colleagues in their capacity as worried surgeons..." [3]

Oughterson enjoyed the experience somewhat less. When it became clear the toe must be amputated, he saw to it that the procedure was carried out under general anesthesia. Cushing made a full recovery.

As the 1930s came to an end, Oughterson's academic interest gradually shifted to surgical oncology. This was first reflected in the dual nature of a grant awarded to him in 1937 to "continue experiments on the effect of tobacco on the vascular system, and for investigations relating to tumors" [9]. From this humble statement, Oughterson's interest in cancer grew to a lifelong passion with a bibliography to match. In that era, oncologic databases did not



Figure 1. Ashley Oughterson, MD, Associate Professor of Surgery, in front of the Sterling Hall of Medicine, Yale School of Medicine in 1940. Photo courtesy of Yale University, Harvey Cushing/John Hay Whitney Medical Library.

exist, and outcomes research was in its infancy, largely limited to so-called "ward patients," usually meaning those with limited means to pay for care and assumed to receive less than ideal care as a result [10]. Oughterson felt that the reported data greatly misrepresented the true efficacy and morbidity of surgery for malignancy and wrote:

"If an adequate idea of the effectiveness of the profession [surgery] in combating a given disease is to be obtained, the results should be expressed in terms of the total disease existing in the community" [11].

As a result, Oughterson published several inclusive case series of all patients examined at Yale for a variety of gastrointestinal malignancies. These reports were extraordinarily thorough for the era and included survival data for surgical versus non-surgical patients stratified by extent of resection as well as operative morbidity. In general, Oughterson was in favor of surgical therapy for cancer, even in cases where radical resection was required [11-13]. For example, in one manuscript authored by Oughterson that examined 77 patients with rectal or sig-

moid carcinomas, he noted that long-term survival was superior in patients undergoing radical resection [13]. In all patients undergoing surgery in this particular series (including exploration only, resection with palliative intent, or resection with curative intent), 43 percent were alive at 1 year versus 24 percent of patients who refused surgery or were deemed inoperable. However, among those undergoing radical resection, operative mortality was a staggering 30 percent. If this could be improved upon, considerable progress could be made as nearly 60 percent of those who survived surgery lived more than 1 year.

In no small part to his growing reputation as a master surgeon, Oughterson performed the earliest pancreatic resections at Yale, again with Harvey. Just a few years after Allen O. Whipple and colleagues presented their landmark work on pancreatic surgery [14], Oughterson and Harvey reported six cases at Yale at that time [15]. Four of those cases were performed by Oughterson, with one operative death recorded. As was the case in Whipple's original report, three of the five radical resections were conducted in a staged manner, with the first stage being limited to decompression of the biliary tract to limit the coagulopathy of cholestatic liver failure. However, the two surgeons considered this risk to be overstated and recommended single-stage resection in all but the most severe cases. They proposed that an operative mortality of 10 to 15 percent was a reasonable goal for pancreaticoduodenectomy. Modern case series demonstrate a mortality rate of 2 to 4 percent for the same surgery in centers of excellence [16].

MILITARY SERVICE

Oughterson's academic career was interrupted when the United States became an active participant in World War II in December 1941. Oughterson received a commission as Lieutenant Colonel in the Medical Corps of the U.S. Army in January 1942 and initially served in both Maryland and Massachusetts as a general surgeon. In mid-1942, the 39th General Hospital Unit, known as the Yale University School of Medicine Unit, was reconstituted, and Lt. Col. Oughterson was assigned as Chief of the Surgical Service [17]. After a training period, the 39th embarked for Auckland, New Zealand, in November 1942 and now-Colonel Oughterson was made hospital unit commander in March 1943. This appointment was short-lived, as Oughterson was reassigned as Surgical Consultant of the U.S. Army Forces in the South Pacific Area in July. The Surgical Consultant was a newly created position in which a surgeon of experience and ability would act as a roving inspector and be senior surgeon throughout his area of operation. These broad duties would focus on advising the commanding medical officer of the most efficient way to provide effective and expert care to the wounded. Oughterson was one of two full-time consultants in the South Pacific Theater [18].

Oughterson thrived in the role of Surgical Consultant as if the position had been tailored to his particular

strengths. Given the nature of the Pacific Theater of World War II, he was present at nearly every battle. In 1943 alone, Oughterson was present in New Zealand, Fiji, and multiple stops throughout both the New Georgia and Solomons campaigns. This included extensive time on the islands of Guadalcanal and Bougainville during heavy fighting. Oughterson often did find himself directly participating in surgery, but his role as Surgical Consultant was primarily one of organization and optimization. In the words of one of his commanders, Maj. General Guy B. Denit:

"I had a great admiration for Colonel Oughterson and gave him the job of 'thinking' and advising me on how surgery and care of the wounded could be improved. I didn't want him to have any administrative authority. I wanted him to (1) see, (2) think and (3) advise. Often when one tries to correct he loses his value as an adviser" [19].

During this time, Oughterson kept a meticulous wartime diary detailing his movements, initiatives, and thoughts on the proceedings of the war. The diary, *From Auckland to Tokyo*, is reprinted in its entirety with commentary in the official U.S. Army Medical History of World War II [19]. An exemplary example of first-person medical history, the diary is frank and occasionally quite personal in its commentary and criticisms; however, by all accounts, it represents "the thinking of a mature mind on a very difficult subject" [19], as stated in remarks by Brig. General Earl Maxwell upon his review of the diary.

Oughterson's impact was felt in many aspects of medical and surgical care during the war, but one of his continued initiatives was lobbying for more and better surgical personnel closer to the front lines of combat. In general, Oughterson thought highly of front line aid personnel but was appalled at the amount of gangrene and wound infection he observed in rear area field hospitals. Earlier debridement and surgical intervention at the battalion or aid station level could save many lives. In his words:

"It is desirable to have a well-qualified surgeon in the forward echelon for each of the following jobs: neurosurgery and thoracic, orthopedic, and general surgery. The latter is the most important. Too much assembly line treatment occurs in forward hospitals" [19].

In part due to his efforts, more emphasis was placed on more forward placement of surgeons, especially early after landings. In some cases, operating theaters were located less than one mile from the front lines.

Despite the austere settings, Oughterson continued his academic pursuits. During the Solomon Islands Campaign, he became convinced that a detailed study on

ATOMIC BOMB INVESTIGATION -- JOINT COMMISSION

1. Name _____ Age _____ Sex _____ Occupation or Rank _____
2. Location when injured (Locate by zone map number): _____
3. Primary Injury by: Bomb _____ Burn _____ Blast _____ Radiation _____
4. Secondary Injury by: Burning Building _____ Flying Debris _____ Falling Walls _____
5. Protection
 - a. Position: Standing _____ Sitting _____ Prone _____
 - b. Indoors: Concrete building _____ Brick building _____ Japanese building
Covered earth or concrete shelter _____
 - c. Outdoors: In open _____ Behind wall _____ In trench _____ Behind tree, post, etc _____
 - d. Clothing _____
 - e. Any other protection _____
6. Were others present _____ Where they injured _____
7. Diagnosis: _____
8. Burns: Degree, 1st _____ 2d _____ 3d _____ Area, percent _____ Part
Healing _____ Eye Injury _____
9. Radiation Effects:

Symptoms	Time Onset	Time Ceased
Nausea		
Vomiting		
Cramps		
Diarrhea		Watery Bloody
Malaise		
Anorexia		
Gingivitis		Necrotic
Pharyngitis		
Purpura		Pedecles Hemorrhage
Epilation		Scalp Eyebrow Beard Axillary Pubic

Skin pigmentation: Dirty _____ Red _____ Dark Brown _____
 Absence of sweating: Head _____ Chest _____ Genitalia _____
 Laboratory data with date: _____
 WBC _____ RBC _____ Hb _____
 Bleeding time _____ Clotting time _____ Sedimentation _____
 Plasma Protein _____ Urine: RBC _____ Alb. _____

Where indicated make special mention of shielding from gamma rays:

Figure 2. Questionnaire utilized by the Atomic Bombing Casualty Commission for collection of survey data from Japanese exposed to the effects of the atomic bombings in Hiroshima and Nagasaki, 1945-46. Photo courtesy of Yale University, Harvey Cushing/John Hay Whitney Medical Library.

wound ballistics could save many lives. Oughterson's diary frequently comments on his observations on the variable effectiveness of Japanese ordinance, and he convinced his superior to grant him a seven-man team that performed an extensive catalog of wounds suffered by American and Japanese servicemen during the battle on Bougainville Island. The resulting study on wound ballistics, still considered authoritative today, gained him further recognition, partially due to its plain-language advice on minimizing casualties, such as proper dispersal of troops under fire, optimal posture in differing combat circumstances, and first aid suggestions [20]. Also, following a short assignment at base command, the recognition of Oughterson as an able surgeon, researcher, and administrator led to his eventual assignment as Surgical Consultant to Western Pacific Base Command in February 1945 and promotion to Director of Research in June for all U.S. Army Forces in the Pacific.

As the war ended, following the atomic bombings of Hiroshima and Nagasaki in August 1945, there was an immediate need for study of the medical effects of these novel weapons. Three teams of American physicians were formed, one each from the Navy, Army, and The Manhattan Project [21]. Oughterson was the natural choice to lead the team from the U.S. Army, and as such, he was one of the first Americans to enter Japan in September, less than

1 month after the attacks. These groups eventually merged with a group of Japanese scientists to form the Atomic Bombing Casualty Commission [22]. This group extensively analyzed the medical and pathologic effects of the blasts, both from autopsy and casualty reports as well as examinations and questionnaires administered to the survivors (Figure 2) [23]. Their collective work was published in a monumental five-volume work entitled *Medical Effects of the Atomic Bomb in Japan* [24]. It was authored by Oughterson and Capt. Shields Warren, who headed the U.S. Navy contingent and was a pathologist at Harvard University. This was considered the definitive study of the medical effects of the atomic attacks. Contemporary studies of radiation exposure continue to cite *Medical Effects of the Atomic Bomb in Japan* as a reference, and research on the long-term effects of exposure of the survivors of the attacks use the data collected by the Commission as a foundation [25,26]. Oughterson and Warren remained lifelong friends and lectured widely together after the war.

AFTER THE WAR

Unlike many other members of the Atomic Bombing Casualty Commission, Oughterson chose to leave the military and return to private life following the war. He communicated to friends his disdain for the secrecy demanded by the military for those engaged in nuclear work, as Oughterson felt medical information related to the atomic attacks should be as widely disseminated as possible [1]. Oughterson was awarded the Legion of Merit with Oak Leaf Cluster for his role in the war (Figure 3).

Rather than immediately return to practice, Oughterson instead chose to take a position with the rapidly expanding American Cancer Society, given his longtime interest in oncologic surgery. As Executive Vice President and Scientific Director, Oughterson traveled widely and lectured frequently to both physician and layperson audiences. In a well-received keynote at the American Surgical Association meeting in 1947 entitled "The Control of Cancer" [27], Oughterson outlined the great need for funding cancer research. He also identified four areas of emphasis: 1) early recognition via public education; 2) early diagnosis via improved screening and diagnostics; 3) prompt treatment with minimal "doctor shopping;" and 4) adequate treatment with appropriately trained experts. These goals, familiar to physicians today, demonstrate Oughterson's clairvoyance of future challenges.

Eventually, Oughterson returned to New Haven and resumed surgical practice, again with a focus on surgical oncology. In a follow-up to his earlier work examining community-wide outcomes in cancer surgery, Oughterson and close friend Edward J. Ottenheimer (also a surgeon of note in World War II) co-authored a landmark paper examining 5,572 cases of colorectal cancer in Connecticut over a 20-year time span [28]. As predicted in his earlier manuscript, as mortality associated with radical resection

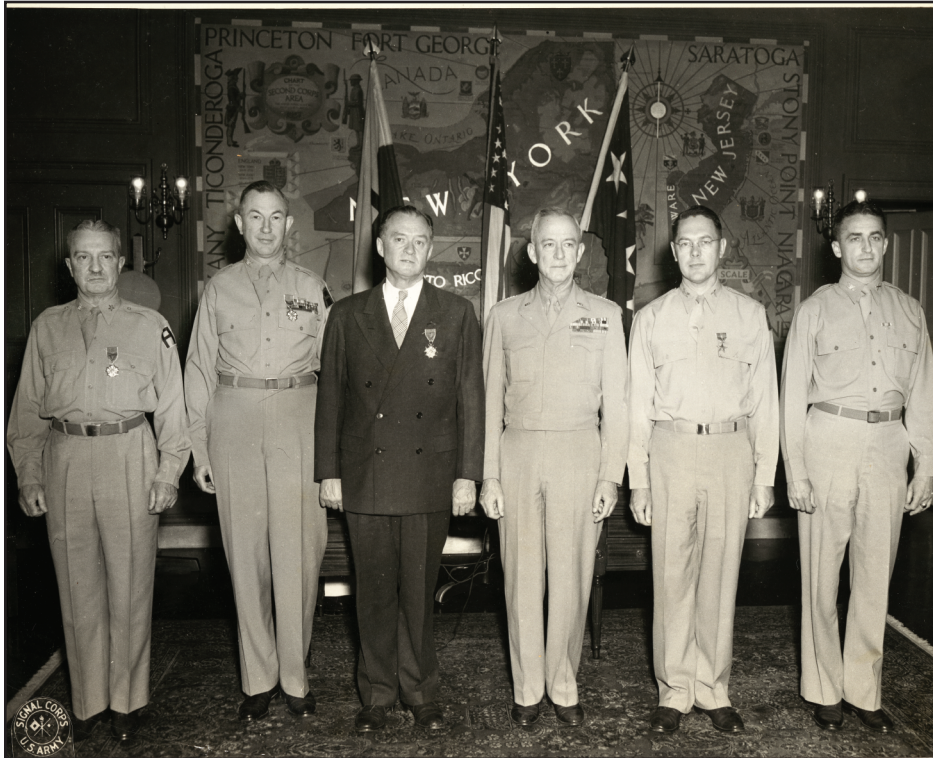


Figure 3. Group of officers receiving awards of merit in 1946, presented by General Courtney H. Hodges, Commander, U.S. First Army. Col. Ashley Oughterson, MD, is third from the left in civilian clothing; Gen. Hodges is fourth from the left. Photo courtesy of Yale University, Harvey Cushing/John Hay Whitney Medical Library.

dropped, overall survival rose. In 3,470 radical operations for cancer, mortality fell from 33 percent in 1935 to 6 percent in 1951. This paper was also an early one to utilize the newer 5-year and disease-free survival metrics as the primary outcome measures. The two authors' conclusion can be summarized by the statement:

“... progress seems to have followed largely from the ability of more and more surgeons to perform radical operations with steadily decreasing mortality. Although further progress may be anticipated along this line, any material change for the better in end results must await a plan for detecting more cancer in its localized stage” [28].

Such comprehensive early data on cancer outcomes is crucial to current research on the longitudinal study of cancer. The above manuscript, as well as other similar clinical research by Oughterson, continues to be cited by contemporary authors, especially in those studies tracking demographic trends in oncology [29-31].

Oughterson continued in practice in New Haven for 8 years. He was notably active in local and regional activities focusing on cancer and was president of the Connecticut Cancer Society in 1954 [32]. He was also active in organizing the first lung cancer fundraiser in the state and was an advocate for chest radiograph screening for men over 45 years of age [33].

Aside from his clinical and academic pursuits, Oughterson was a lifelong member of multiple surgical and medical societies. He was elected president of the New England Surgical Society in 1953 at the age of 58.

Oughterson had long been interested in the dilemma of rising health care costs and the role of insurance in access to care, writing to a friend as far back as 1944:

“I am glad to hear that some realize that insurance answers only a part of the health problem and does nothing to improve the quality of medical care nor reduce the cost of medical care. I am afraid that the cost may be lowered at the expense of quality” [1].

Oughterson used his presidential address to the New England Surgical Society entitled “Surgery, Science, and Society” to examine these issues [34]. This address was reprinted in the *New England Journal of Medicine* and focused on issues society still struggles with today. Oughterson advocated physician involvement in hospital administration, not just to control cost and access to care, but to prevent becoming a “technician who accepts the shortcomings ... of hospital operation.” He also endorsed voluntary insurance schemes rather than fee-for-service care that placed a premium “on keeping the patient sick rather than well.” Finally, he implored his colleagues to “overcome the inertia” of old ideas and participate in solving the problems in the medical profession.

UNTIMELY DEATH AND REFLECTION

Despite a large, regionally important, and successful surgical practice, Oughterson sought a new undertaking. While he and his wife, Dr. Marion E. Howard, an internist at Yale, were vacationing in South America in 1955, Oughterson was impressed by the medical students he en-

countered there. However, he was unimpressed by the educational facilities available. In a momentous decision, Oughterson elected to close his practice and persuaded the Rockefeller Foundation to sponsor a mission to Colombia to improve medical education throughout the country with headquarters at the Universidad del Valle in Cali, Colombia. Oughterson and his wife relocated to Cali in mid-1956. Spending the first several months practicing his Spanish and acclimating to the region, Oughterson sought to undertake a tour of the hospital facilities throughout the countryside. On November 17, 1956, while en route to Buenaventura, Colombia, Oughterson's plane, flying without a proper co-pilot, struck a mountainside shortly after takeoff [35]. All 36 passengers and crew were killed; Oughterson had just turned 61. His widow, Dr. Howard, survived him; there were no children. Eventually, a successful Rockefeller Foundation mission was established in Cali in 1960. There was a medical research focus in insect-borne diseases, but its greatest legacy was at the Universidad del Valle, which benefitted from 15 years of financial and technical support from the Foundation under their University Development Program. As a result, the institution became one of the top medical schools in South America and was well-known for integrating public health work with the teaching and practice of medicine [36].

CONCLUSIONS

The New Haven and Yale communities grieved the loss of "Scotty" Oughterson. A kind-hearted gentleman, Oughterson was well-known throughout the community for his personality and social nature. Beloved by professional colleagues as well as his patients, close friend John F. Fulton remarked about Oughterson's bedside manner:

"Few surgeons were more loved by their patients than was Scotty Oughterson ... Following Dr. Cushing's example, he never failed to keep close track of his patients. He was a passionate believer in full-time medicine; to ward patients he never sent a bill, and his charges to private patients were nearly always very modest unless they annoyed him. In this respect he was again a follower in the Cushing tradition" [1].

His legacy is foremost as an outstanding surgeon, investigator, and teacher. However, Oughterson's service to his country in wartime and to his profession as a leader in numerous societies rank highly as well. Most impressive is the foresight he demonstrated, especially later in his career, in identifying those issues facing medicine that would persist even today, especially the control of malignancy and continued growth in health care spending. As such, it seems that consideration of the insights and disposition of past luminaries such as Ashley W. Oughterson remain crucial in forming solutions to present and future obstacles in medicine.

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