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Annual Reception

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Please send to Editorial
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The MASSACHUSETTS GENERAL HOSPITAL SURGICAL SOCIETY

Newsletter

Summer 2003

Volume 4, Issue 1

A MESSAGE FROM THE PRESIDENT

On July 1 a new regulation regarding duty hours for residents was put in place by the ACGME, the Accreditation Council for Graduate Medical Education. As with other requirements that come down from this Council, and from the Residency Review Committee in Surgery, which acts as the agent of the ACGME, failure to comply will result in loss of accreditation. Most other residency programs have already been restructured to meet this requirement, and it is education in surgery that is now on the block.

The movement toward limitation of working hours for residents has grown over several decades. It comes from a belief that residents are by tradition abused by their residency programs. It perhaps grows out of the idea that residents are students who pay for their education by service to their hospital, and that hospitals, for their own nefarious reasons, choose to maximize this service component. Actually, it is perfectly clear that the presence of residents in a hospital is not required to achieve excellent patient care. When the Lahey Clinic instituted a general surgery residency program a few years ago, one can be certain that one result was not better care for patients. But there has come to be a conviction, held by many students and leaders in medical education, that surgical residents are being deprived of an acceptable life style by their training programs. To add strength to the argument that duty hours should be limited is the further assertion that tired residents will make more mistakes, likening them in this to airline pilots. There is, of course, little similarity between the requirements for safely delivering surgical care as a resident and those of flying a commercial passenger plane.

As best I can tell, the heart of surgical training is placing residents in the position to take responsibility for making and implementing decisions about the care of individual surgical patients. It is the obligation of the program to insure that the resident has the opportunity and knowledge to do this without harm to the patient. This involves specific knowledge of each resident by the next senior person in the system and providing ready and effective assistance when needed. I think it is the exercise of this kind of responsibility in a structured education environment that leads to the development of wise and capable sur

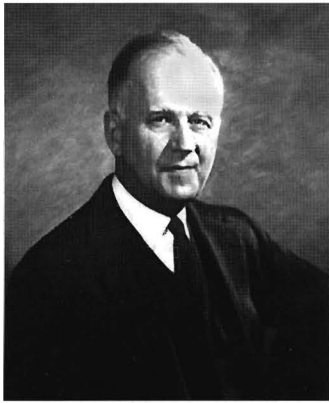
geons. It is a process that, by experience, we know takes many years. In general surgery, the five-year length of programs grew out of experience as residency programs evolved, and was not an arbitrary choice. Efforts to decrease it have never proven successful.

The new regulations will limit duty hours to 80 per week, averaged over a four-week period. Duty hours include, in addition to work and on call hours in the hospital, in-house conferences and administrative time. Residents may take call only every third night. Continuous time on duty is limited to 24 hours, though further hours are allowed for transfer of care to insure continuity. After a work day and a night on call, a 10 hour "rest period" must elapse before a resident may assume responsibility for new patients, perform or assist in operations, or render care to surgical patients.

It is mainly in the better general and specialty surgical residency programs that this new regulation will bring about restructuring. The effect will be to decrease the actual training time of residents, and also to proportionally increase the "service" component while decreasing the "education" component of their time in the hospital. For example, the best programs seek to avoid coverage circumstances, especially for junior residents, in which the resident is called upon to take responsibility for the care of patients unknown to him or her – "cross coverage". There will be fewer residents available and more such coverage. Junior residents do not make many "mistakes" in a proper setting for education, but when they do, it is almost invariably because of a lack of familiarity with the patient. In truth, tired and knowledgeable is considerably more to the patient's advantage than rested and ignorant.

Residency programs, as we know them, developed largely after the war years of the 1940's. The best programs were the product of devoted and gifted chairmen and teachers. Since then, beginning mainly in the 1970's, the regulating bodies have taken gradually more intrusive control. The effect had been to improve poor and marginal programs but to bring a stifling uniformity to the rest. The requirements with respect to content have long since eliminated flexibility and innovation. The requirement for increased outpatient experiences and "counting cases" as a means for judging the quality of surgical training had added nothing positive to resident education. The further control of duty hours will prove to be, I believe, another unfortunate and misguided regulation. *Les Ottinger ♦*

RICHARD HARWOOD SWEET
By Earle Wilkins



A Master among Masters. This was the mantra bestowed on Richard H. Sweet by his chief, Edward D. Churchill, on April 17, 1962 at the forty-second annual meeting of the American Association for Thoracic Surgery in St. Louis. Among the resident staff of his day he was known as Sir Richard or even, to one resident at least, as The Cardinal (because of the red necktie he usually wore). Whatever the recognition, he was a leading surgeon in the developing years of thoracic surgery and by all standards the preeminent esophageal surgeon. His teachings and example are still observed today.

Dr. Sweet was born in Newark, New Jersey on May 30, 1901, years before the date was known as Decoration Day or later Memorial Day. He pursued his education at Columbia University and the Harvard Medical School, receiving his medical degree in 1926. He became a house pupil at the MGH that year and completed his residency on the East Surgical Service in 1930. From that time until his voluntary retirement in 1961 his career was continuously and intimately an integral part of the MGH. His early practice was as an assistant to Daniel Fiske Jones, a prominent Boston surgeon of the time. He was thus a product of the old apprentice system.

His interest in surgery of the thorax developed early in the decade of the thirties and of the esophagus by 1940. Resection of the esophagus in the USA dates back to Franz Torek (1913) but successful intrathoracic anastomosis of the stomach to esophagus did not occur until 1938. Churchill and Sweet reported the initial MGH experience with esophagogastronomy in 1942. The importance of this paper was the technical creation of the anastomosis. Prevention of leakage was critical to the success of the operation. Gordon Scannell and

I often discussed the pairing of Churchill and Sweet, collaborators yet rivals. We think Churchill fathered the technique of the interrupted fine silk anastomosis and Sweet, the smoothly thorough dissection of the carcinoma and the careful preservation of the gastric blood supply. Whatever, this anastomosis with its technique developed so early is still a basic fundamental tenet of successful esophageal resection today.

With Churchill's departure in World War II Sweet was declared "essential" to homeland surgical duties. Surgery of the thorax became his responsibility. He braved the largely uncharted regions of the chest with a consummate knowledge of anatomy and a masterful skill of hand that gained him recognition as the premier craftsman of his day. His basic tenet, however, remained; performance of thoracic surgery must be grounded on training as a general surgeon. One of his favorite sayings was a paraphrase of Lord Nelson, "the battle of thoracic surgery is won on the playing fields of the pelvis".

By 1943 his clinical work load, and thus his experience had become enormous. Partly because of this and partly for better supervision of chest surgery on the depleted and accelerated residency services, he established a thoracic surgery residency position. This position was successively held by Emerson Drake, Rodolfo Herrera and Charles Findley, a period totaling 27 months. When Dr. Churchill returned, the concept was abandoned. As Hermes Grillo has noted, however, this was an "early forerunner of the distinct general thoracic surgical unit established a quarter century later".

Meanwhile, the Baker OR Room 4, with its makeshift pipe observation stand supporting many South American visitors, was busy with Sweet's surgical innovations. Here he performed the first American esophagectomy with a supraaortic anastomosis. He actually was the first at the MGH to do a splenorenal shunt. He vied with Robert Gross for the distinction of having first divided a tracheoesophageal vascular ring. Upon the suggestion of cardiologist Edward Bland he developed the shunt technique for mitral stenosis between a pulmonary vein and azygo vein. As Scannell has noted, this so-called Bland-Sweet operation was an "ingenious method of decompressing an engorged lung— incidentally, an operation of great technical challenge". He standardized the technique of thymectomy for myasthenia gravis. He ventured into cardiac surgery with pericardiectomy, patent ductus ligation, and

insertion of the Hufnagel aortic valve. All the surgical techniques of this self-made thoracic surgeon were beautifully described in his then pioneering textbook *Thoracic Surgery (1950)*, such as this exquisite description: "the performance of an anastomosis...in the esophagus must be carried out with the greatest gentleness...The most important single aim is to prevent necrosis of the edges...to be sutured. Continuous sutures which cause necrosis because they compress the entire sutured edge must be avoided..." Crushing clamps and cautery were not permitted. The MGH general thoracic surgical residents, I am told, continue to follow these principles today.

Assisting Sweet in his operations and patient care have been MGH-trained surgeons: Carroll C. Miller, Lamar S. Soutter, F. Thomas Gephardt, Earle W. Wilkins Jr. and John M. Head. In all his operating years he had only two scrub nurses: Cleo Richardson and Peggy O'Brien. As a team, combinations of these people contributed to his reputation as a surgeon with technical precision and unhurried speed. The late French surgeon Henri LeBrigand perhaps described this best. There was nothing to "prevent his surgical performance from being brilliant and remarkably executed. Everything was neatly and clearly exposed; his team was perfectly rehearsed, and each gesture followed the next without any rush, yet without the slightest delay." This teamwork can be seen in a videotape (converted from the 1952 original 35mm movie) still available at the MGH. It is also remarkable that in his 32 years of active private practice he had only one secretary, Dorothy Saunders Starrett. She joined Dr. Jones just two weeks before Dr. Sweet in 1930 and was with him until his retirement on July 14, 1961.

The Sweet composure in the operating room was matched by his reassuring, comforting manner with his patients. With his superlative OR technique, especially in managing surgical problems complicated by prior mismanagement, he was held in awe by his residents. I recorded in an *In Memoriam* tribute that, as a founding member of the Board of Thoracic Surgery and later its chairman, he was concerned with the education and training of the resident surgeon. "He was always a stern critic, insisting on accuracy of observation and reporting and accepting no less than the finest of technical detail." Scannell, in his 1978 presidential address before the American Association for Thoracic Surgery, captured the special character of the man. (SWEET continued on page 9)

WHO WAS HURLBUT?

By Charlie Ferguson



With the opening of the newly renovated Hurlbut room, I was inspired to review what little is known of the short life of Robert Satterlee Hurlbut. From this review, I believe we will see the image of what a surgeon should be, and perhaps be refreshed in our goal to accomplish the best that we can. We will also see that the more things change, the more they remain the same.

Robert Satterlee Hurlbut was born in Cambridge, MA, January 1, 1912. His father was the Dean of Harvard College, and he spent his childhood in the family home on Ash Street, attending Belmont Hill School. I have not been able to learn much of his childhood, though I am told by one of his younger neighbors, Francis Brooks, that he was quite athletic, playing football with “a leather helmet and an iron will”. Mr. Brooks wrongly accused him of smoking a pipe behind the big rock wall surrounding the family home, an accusation for which Mr. Brooks paid dearly, with a broken nose. Hurlbut attended Harvard College and Medical School. During this time he continued to be athletic, skiing in the winter and sailing in the summer. He was very successful racing 110s, an Olympic class open boat, and sailed extensively throughout the northeast. He spent two summers at the Grenfell Mission, St Anthony, Labrador with Dr. Alexander Forbes, sailing there by coastal schooner. On graduation from college, Hurlbut married Sally Drew of Newton and then entered The Medical School. He applied for the House Officer Examination Dec 9, 1937, listing Thomas Lanman, Robert Zollinger, and Henry Jackson as references. Lanman described him as “one of the outstanding men of his class from the point of view of his qualifications for internship, well above average in the school and is outstanding in his ability to apply his knowledge should place Hurlbut (sic) first on the list with Burbank a close second.” Zollinger’s letter reads in full: “This chap is a nice appearing fellow with an excellent personality. He worked his cases up well and did not shirk. I can recommend his as very desirable intern material.” The letter of Jackson has not survived.

His summary sheet for intern examination suggests that he was in the middle third of his class, with a nice appearance. O. Cope pronounced him good to excellent, Gustafson OK, and Hamlin A-1 IN EVERY PARTICULAR.

Hurlbut endured the traditional intern examination. On the written exam, he described his attraction to surgery, tracing it to an elementary course in human anatomy by Dr. R Heben Howe, “a most stimulating and interesting man”, at Belmont Hill. He describes having worked with Sir Wilfred Grenfell in Labrador, caring for various surgical problems and performing simple operative procedures. He describes his fondness for operative manipulation as: “The feel of instruments gives me a keen sense of pleasure. The cleanness, skill, speed and technique of an operation seems to be the height of what one can do manually”. He summarized the reasons for why he wished to go into surgery as: “1) Because I love to use my hands and 2) Because you are doing some definite material thing for the patient.” He stated that he expected to be in training for at least 5 to 6 years (this was at a time when there was no set period of surgical training). As to the future, “I do not expect to be any great figure in the surgical field, but I should like to have the reputation of being a good doctor to whom any man would be willing to entrust his case. My plans for the future are that if it is humanly possible, I should like to practice in Boston. Surgery in Boston is difficult for there are so many good men in the field, but I sincerely hope that the old adage of “where there’s a will, there’s a way” will hold true”. Little did he know that the world would soon enter a war that would change all of his plans.

The second question he answered on the written exam describes the management of a patient with small bowel obstruction. He accurately and succinctly describes the alkalosis with the consequent serum and urine electrolyte abnormalities to be found. His recommendation of administering 5 liters of saline might be a little generous by today’s standard, as is the recommendation of giving 1 to 2 liters as a clysis to “keep the fluid in.” Unfortunately, his patient never got past fluid resuscitation before time was called.

He received a grade of A- for the written and A- for the oral, and was admitted to the East Service as Pup Jan 1, 1939, serving as such through March 31, 1939. He then served on urology, outpatient department and emergency ward, and junior ward for the remainder of that year. The following year he served as third assistant resident from January through June 11, and then at his request was second assistant resident in pathology (without stipend) June through February. There followed a five month stint on Baker/Phillips House, five months in OPD, a two-week vacation (the only one of his residency), and four months each on male and then female ward before being released for availability to the Armed Forces July 1, 1942. We know little of his performance as a resident, the evaluations being about as comprehensive as those of the present day. Dr. Smith-Peterson stated he made an excellent impression on the entire orthopedic staff. “His presentation of cases is done with great accuracy and emphasis of important points and apparently with the greatest of ease. He has a fine mind; we hope his hands will function as well as his brain when he gains more surgical experience”. Dr. AW Reggio stated “Dr. Hurlbut handles the patients very well. Absolutely satisfactory”. These are the only evaluations we have of his performance—a situation which we have improved upon in the present day, though perhaps still not to a level completely satisfactory to the RRC. We do know that during this period he fathered two children, the eldest of whom, Robert Jr. is with us here today. Throughout residency he maintained a property at Marblehead, where he hosted many picnics and clambakes for members of the House Staff and groups of medical students. I am told that it was at one of these parties that *(HURLBUT continued on page 9)*

A HISTORY OF CARDIAC SURGERY AT THE MGH

By Willard M. Daggett, Jr., M.D.

Cardiac surgery began at the MGH on July 18, 1928 when Dr. Edward D. Churchill operated on Catherine Southworth, referred by Dr. Paul D. White, in a near terminal condition from constrictive pericarditis. Churchill, aware of the work of Rehn, Sauerbruch and DeLorme in Europe from his Moseley Travelling Fellowship (See Wanderjahr, edited by J.G.Scannell), freed both ventricles by excising the thickened, scarred pericardium. The functional outcome for the patient was excellent. In 1931 Churchill was appointed John Homans Professor of Surgery at Harvard Medical School and Chief of the West Surgical Service. Subsequently, Churchill performed a series of Trendelenburg operations on patients dying of pulmonary embolism. All were unsuccessful, and Churchill abandoned the operation, calling it "an instant autopsy." However, as a medical fellow at the MGH, Dr. John H. Gibbon, Jr.*, caring for one such patient, "watched helplessly as the patient became more cyanotic with distended neck veins" (See The Evolution of Cardiac Surgery by Harris B. Shumacker, Jr). It occurred to Gibbon that if only one could withdraw the dark blood from the distended veins, put oxygen into it, remove carbon dioxide, and pump the renewed red blood back into the patient, her life might be saved. This idea came to him in 1931, but he had to wait until 1934 when Churchill gave him sufficient laboratory space at the MGH to begin his experiments on extra-corporeal circulation.** Working with a cat model, Gibbon accomplished successful "Artificial Maintenance of the Circulation During Experimental Occlusion of the main Pulmonary Artery," publishing this seminal study in 1937 (Archives of Surgery). Thereafter, Gibbon returned to Philadelphia (U.Penn. and then Jefferson). Clinical application of these studies by Gibbon was delayed by 4 years of military service during World War II, but ultimately led to the first successful operation with a heart-lung machine (ASD closure) on May 6, 1953. To quote Scannell, "The flood gates were opened."

Other milestones in cardiac surgery at the MGH, preceding the development of the pump-oxygenator, included an operation devised by Dr. Edward F. Bland and Dr. Richard H. Sweet for relief of episodic pulmonary edema in patients with severe rheumatic mitral stenosis. In this operation, which Sweet performed successfully (Annals of Surgery - 1949) in six patients, a branch of the right pulmonary vein, under high pressure from the mitral obstruction, was decompressed by anastomosing it to the azygos vein. This operation, while ingenious in concept and execution, was only palliative in the short term, and was soon overshadowed by direct opening of the valve as demonstrated by Bailey and by Harken in 1948. Scannell began performing mitral valvulotomies soon thereafter with gradually improving outcomes, as patients were referred for operation earlier in the course of their disease. The success of mitral valvulotomy led Scannell to teach residents to do this operation in the 1950's. Dr. Hermes Grillo, performing one such operation, found, instead, at left atrial exploration, a soft tumor mass prolapsing through the mitral orifice. Dr. Scannell confirmed the diagnosis of probable atrial myxoma. At a subsequent operation on June 15, 1955 with surface cooling to protect the brain and venous inflow occlusion to empty the heart, Scannell, Grillo and Sheldon performed the first removal of a left atrial myxoma in the United States (Wilfred Bigelow had successfully done a similar operation earlier in Toronto). Because the patient's temperature had drifted down into the 20's C., over two hours of

cardiac massage and warm saline lavage were required to restore the circulation. The 33 year old patient went on to an uncomplicated recovery and long term good health.***

Following Gibbon's first successful operation with mechanical cardiopulmonary bypass (CPB) in Philadelphia, Drs. J. Gordon Scannell, Robert S. Shaw, John F. Burke and W. Gerald Austen (then a Harvard Medical student) formed a team to begin animal studies of extracorporeal circulation with a goal of treating patients with advanced heart disease. Shaw and Burke were natural candidates for this endeavor, both with engineering backgrounds. Scannell, a superb technical surgeon with calm demeanor in the face of the unpredictable operative challenges so often encountered in that pioneering era, was the senior surgeon and leader of the team. Despite Dr. Churchill's apparent lack of enthusiasm for this new field, Burke recalls Dr. Churchill's unannounced appearance during one of their experiments with the heart lung machine, giving quiet tacit support to their investigative struggles. Both Burke and Grillo espouse the view that Churchill did not shy away from cardiac surgery, per se, but was concerned about the effects of specialization overall on the field of surgery, wherein he felt the basic principles were more important than the mechanics. Scannell was of the opinion that Churchill was preoccupied with lung surgery's evolution, e.g. operations for bronchiectasis, tuberculosis, and cancer, as well as the challenges of general surgery and the "rectangular" or block surgical residency which he designed at the MGH.

With a degree in mechanical engineering (fluid dynamics) from M.I.T., W. Gerald Austen joined the cardiac team as a Harvard medical student and began to work in Shaw's research laboratory. Shaw and Austen**** constructed the first pump-oxygenator (a bubbler*****)- to quote Shaw: "in my garage on a budget of \$1,500." Initial operations were performed in 1956 by Scannell, assisted by Burke, with the heart lung machine run by Shaw and Austen. Austen, who started his surgical internship at the MGH July 1, 1955, was assigned to care for the patients overnight. Burke recalls that while mitral valvulotomies had been done by Scannell in the Baker Memorial O.R., anesthesia in that setting did not meet the demands of this new and highly technical field. Accordingly, it was agreed that all cardiac operations would be

*footnote:Indeed, Gibbon and Churchill performed experiments to define the hemodynamic consequences of partial pulmonary artery occlusion to mimic pulmonary embolism.(J. Clin. Invest., 11:543-553, 1932).

** Of note are Gibbon's and others' statements that neither Churchill nor Dr. Walter Bauer were particularly encouraging about the likely success of his proposed experiments.

***In a letter dated February 13, 1995 (a copy of which was given to me by Dr. Grillo) written to Dr. Scannell by Dr. Gabriel S. Aldea of Boston University Medical Center. Dr. Aldea states that he performed successfully on this 72 year old patient a quintuple coronary bypass. The patient having presented with unstable angina 40 years after the operation for removal of a left atrial myxoma that Drs. Scannell, Grillo and Sheldon had accomplished.

**** Austen and Shaw later performed important experiments on left heart bypass, providing a basis for operations on the descending thoracic aorta, such as dissecting aneurysms.

***** First developed clinically by Richard DeWall, M.D. at the University of Minnesota.

(MGH CARDIAC SURGERY continued page 12)

PLASTIC AND RECONSTRUCTIVE SURGERY
AT THE MGH

By Bradford Cannon, M.D.

Plastic surgery as we now picture it is not new in New England. In the late 19th century, Dr. Jonathan M. Warren wrote on cleft palate. In the early part of the 20th century, Dr. George Monks described a pedicle flap, Dr. William Ladd dealt with a host of congenital anomalies including facial clefts, and Dr. Ernest Daland used plastic and reconstructive methods after major cancer surgery. But it wasn't until 1922 when Dr. V.H. Kazanjian was given a joint appointment at the MGH and the Mass Eye & Ear, and the joint outpatient clinic was established that it became possible to recognize plastic surgery as an independent surgical specialty. Kazanjian limited his practice to deformities and trauma to the face and neck with an occasional release of joint contractures following deep burns.

Kazanjian had graduated from the Harvard Dental School in 1905. He remained with the School to care for the facial fractures referred to the School for treatment. He was thus well prepared to serve with the British Forces in Europe during WWI where he earned the accolade "The Miracle Worker on the Western Front" and was decorated by King George V. Trained as a dentist Kazanjian returned to Harvard to earn his MD degree in 1921. He was then appointed as noted above in 1922.

My first exposure to Plastic Surgery was at the MGH when, as a medical student, I watched Dr. Kazanjian reconstruct a nose with a forehead flap (the Indian method). Little did I anticipate my future relation with the MGH and my close association with Dr. Kazanjian as his successor.

Having spent my childhood in Cambridge and eight years at Harvard as an undergraduate and as a medical student, an experience elsewhere seemed appropriate. When I learned about an opening at Barnes Hospital in St. Louis, I submitted my application and was admitted as an intern. The training program at Barnes differed from that at the MGH. The intern moved through six special programs of two months each. My first was at the Shriner's Hospital for Crippled Children. There were many victims of poliomyelitis and patients with recent and late burns requiring skin grafting. It was here that I met my lifelong mentor and close friend, Dr. James Barrett Brown, who demonstrated skin grafting for burns in a most skilled fashion. Throughout the years of our association he was, as a teacher, willing to delegate a wide variety of responsibilities to trainees inspiring each trainee to outperform the teacher. He had the ability to get the best from younger men under his tutelage. These same characteristics were seen repeatedly during the four years we spent together during WWII.

After four years in the several specialties and serving one year as chief resident, I found that plastic and reconstructive surgery interested me the most. A position with the renowned St. Louis group headed by Dr. Vilray Blair was given to me. Eighteen months later, after an extraordinary learning experience, I realized that my future lay elsewhere. I returned to Boston in January 1940. Dr. Churchill appointed me Assistant in Surgery at the MGH, and I was also appointed at the Huntington Cancer Hospital near the Medical School.

Shortly after my return, Dr. Kazanjian under whom I worked at the MGH, and I were approached by Dr. Huber, head of the State Crippled Children, to learn whether we could help with the backlog of children under his program. I realized that the MGH was ill

prepared to accept a host of children with facial clefts, burn contractures, and assorted congenital deformities. We agreed that a Clinic started at the Mt. Auburn Hospital would be ideal. There was clinic outpatient space, a highly skilled pediatric ward.

The opportunity to have total care of these children, preoperative planning, the operation itself, and the immediate and late follow-up for me and my associates was a challenging opportunity which we accepted with eager anticipation. The program continued busy until I was drafted in 1943 and resumed for several years after my discharge from army service.

At the MGH I discovered that individual members of the surgical staff were assigned to be responsible for supervising certain areas or procedures; for example, Dr. Allen, the stomach and Dr. Linton, the vascular problems. I, therefore, applied for the assignment on burns. I found that burns were treated by the topical application of tannic acid powder with an atomizer. Tannic acid powder and triple dye (methylene blue, gentian violet, and brilliant green) were in common use in Boston hospitals.

Oliver Cope suggested that I investigate the healing benefits of these recommended applications. A skin graft donor surface was used for the test. The graft was cut with a mechanical dermatome to insure uniform depth of cut. The raw donor area was divided into three sections with the central third covered with fine meshed gauze impregnated with a bland ointment. The two test agents were applied at the end thirds. It was obvious that the topical agents were injurious if they came in contact with the unprotected dermis and its intact epithelial cells. Healing took from three to four weeks. Interesting was the observation that if the blood was allowed to clot and was not sponged away, the healing took place as with the control since the cells in the dermis were protected by the blood clot.

It was rumored that as a result of our findings the armed forces disposed of a considerable amount of tannic acid collected in anticipation of burns in modern warfare. During my four Army years I encountered no instance of tannic acid use for burns.

Only a few months after our study was completed the Coconut Grove fire (Thanksgiving 1942) occurred and there was no mention of tannic acid. The night of the fire, I reported to the higher ups that there were a significant number of victims with deep burns that would require care for several weeks or more and that preparations should be made for their care. I was told that there were no deep burns. The reason for the confusion was that carbon monoxide combines with hemoglobin creating a bright red color. The victims of carbon monoxide poisoning are the picture of health but the color is fixed in the burned skin and fails to blanch on pressure.

After any pulmonary injury had been evaluated and fluid needs stabilized, the survivors were in need of surface care, debridement and repair with skin grafts. I was the only member of the staff with considerable experience in the treatment of deep surface burns and the preparation for skin grafting. Dr. Churchill recognized this and promptly gave me the assignment. The sunroom on White 6 was converted to a dressing room with all necessary supplies, light anesthesia if needed, and photographic recording. I was eager to take the opportunity to prove my worth.

At the same time the military draft board was after me but my induction was postponed until early April 1943 when I was ordered to Valley Forge General Hospital in Pennsylvania. By that time the fire victims were healed with successful split skin grafts.

I returned to the MGH in 1947 after four extraordinary years at (PLASTIC SURG continued on page 16)

SURGICAL LEADERSHIP IN ONCOLOGY

By Al Cohen

Bill Wood, Everett Sugarbaker, and I finished the MGH surgical residency in the mid-70's, and were committed to careers in "Surgical Oncology". We all had clinical and research experience at the Surgery Branch of the National Cancer Institute. Ev took an additional fellowship at the MD Anderson, and then established himself as a major presence in surgical oncology in Miami. After sequentially completing the East leadership year, Bill and I joined the MGH faculty. Surgical oncology was well-established. Ernest Daland, Grantley Taylor and Claude Welch had led the MGH "Tumor Clinic", and were joined by John Raker and Bill Rogers. However, "general surgeons" on the faculty were also well known for their interest and expertise in the treatment of cancer patients. Oliver Cope was a pioneer in breast conserving surgery for breast cancer, George Nardi in pancreatic cancer, Marshall Bartlett in GI cancers, Steve Hedberg in colorectal cancer, Ron Malt in liver cancer, and soon thereafter Ben Cosimi in melanoma, Joe Fischer and Andy Warshaw in GI cancers. General thoracic, orthopedic, and gynecological oncology were always a strong presence at the MGH. The current Surgical Oncology unit and the general surgical faculty at the MGH continue to provide national leadership in the biology and treatment of cancer.

I left Boston in 1986 to be the Chief of Colorectal Surgery at the Memorial Sloan-Kettering Cancer Center, and Bill Wood left five years later for the Chair of Surgery position at Emory.

Although Bill and I are "just general surgeons", we have both been active at the national and international level as leaders in oncology. Amongst his many activities, Bill is the pre-eminent breast surgical oncologist, active as a board member of the American Society of Surgical Oncology, and recent past-president of the Society of Surgical Oncology. I am starting my second two year term as the Chair of the Commission on Cancer of the American College of Surgeons, am President-elect of the Society of Surgical Oncology, chair the Colorectal cancer section of the American College of Surgeons Oncology Group, and sit on the Cancer Care Quality Project Steering Committee of the National Quality Forum.

Over the past two decades I have witnessed the increasing involvement of medical oncologists and radiation therapists as the "cancer specialists". At the same time surgical oncology has been unable to establish itself as a certified specialty under the American Board of Surgery. Surgeons in both university settings and private practice have stepped back or been pushed aside from their prior leadership positions in oncology. Most hospital cancer committees are chaired by medical oncologists. Only 1% of NIH cancer research funding goes to surgeons. This has occurred despite surgeons being responsible for the cures of most patients with adult solid malignancies.

At the MGH I always kept a red pen in my pocket for correcting written consultation notes. Whenever a medical oncologist wrote a note in a chart as "Oncology Consultation", I would use my red pen to add a word and convert to "Medical Oncology Consultation". Membership in the American Society of Clinical Oncology (ASCO) is primarily medical oncologists, although surgeons and radiation therapists have a modest presence. Their annual meeting draws 25,000!! ASCO has a major presence on Capitol Hill, and a major public relations program. A press conference was held at the 2002 meeting to announce the "breakthrough" in oxaliplatin-based chemotherapy for metastatic colon cancer – the median

survival of patients increased from 14 to 18 months! The Society of Surgical Oncology has a yearly annual meeting attendance of 1,000.

Surgeons must re-establish themselves as equal partners in the multidisciplinary management of cancer patients. Operating on cancer patients and then "turning them over to an oncologist" is not quality cancer care. Patients and families will greatly benefit by surgeons remaining in an active role.

There is no question that with improved cytotoxic chemotherapy, newer "targeted therapies", and conformal and "intensity-modulated radiation therapy", surgical extirpation seems to lack panache. However, recent data demonstrate that the "surgeon" is an important prognostic variable in many cancer sites, particularly in rectal cancer. With traditional surgical resection for rectal cancer, local recurrence occurred in 25% of patients. Adjuvant chemoradiation therapy reduced the failure to 12%. By optimizing the operation using "sharp mesorectal excision", local recurrence with operation alone is 10% or less, and with adjuvant therapy this is reduced to 3%. This paradigm demonstrates that surgical nihilism is not a valid concept, and for some cancer sites, the quality of the operation remains a major determinant of cure.

In collaboration with leadership of the Association of Surgical Education I have been working for the past year via a grant from the Foundation for Advanced Medical Education in optimizing surgical treatment of rectal cancer. This involves re-training general surgeons in the techniques of sharp mesorectal excision, autonomic nerve preservation, and sphincter-preservation. Transferring expertise in cancer surgery acquired by "master surgeons" to the general surgeons in the communities in which 80% of patients are treated is a major undertaking. Validating expertise in "low volume" surgeons is a challenge.

Medical oncology has utilized the concept of "relative risk reduction" when analyzing the benefits of adjuvant therapy. In breast and colon cancer, chemotherapy results in a one-third reduction in the risk of dying from cancer. Sounds dramatic. However, for many such diseases, the absolute benefit is only 10-12%. Market surveys amongst breast cancer patients indicate that they will accept adjuvant chemotherapy for a 1% (yes - one percentage) survival gain. I am the only surgeon on a task force defining the use of adjuvant chemotherapy for node-negative colon cancer. The absolute benefit is somewhere between nil and 5%, yet the medical oncologists on the committee have embraced the efficacy. I believe it is imperative that surgeons maintain a leadership role in the multidisciplinary management of our cancer patients, and help provide balance in regard to short and long-term toxicity of not only our surgical procedures, but also the adjunctive therapy alternatives. In addition, patient participation in clinical trials is greatly enhanced by involvement of surgeons. The bond and faith between patients and their surgeons will never be replaced by other disciplines.

As chair of the Commission on Cancer, the group that provides oversight for the 1450 cancer programs throughout the United States, it is apparent that general surgeon involvement in cancer committees and tumor boards is problematic. By default and because of availability, in most communities and universities medical oncologists and radiation therapists coordinate these meetings. Tumor boards are frequently set for noon, and everyone complains surgeons do not attend....duh! A coordinated effort at succeeding with an early morning or late afternoon time-slot with multidisciplinary attendance is crucial. The Commission on Cancer also recognized that at Cancer Centers and many Universities, *(ONCOLOGY continued on page 11)*

A MESSAGE FROM THE CHAIRMAN By Andy Warshaw

In recent years the MGH surgical services and the deployment of the faculty surgeons have spread beyond the main campus to practice sites, affiliations and collaborations distributed over a broad geography, particularly north and west of Boston (and even a bit east over the waters to Martha's Vineyard, where we have had an elective for residents). These activities have broadened our practices, increased the number of surgical patients we can care for at a time when the beds, ORs and ICUs at the MGH are at capacity, and helped to ensure a flow of tertiary level cases at "the mother ship". The expanded practice opportunities (and revenues) for faculty have made it possible to grow the surgical faculty, based upon a model in which all surgeons, even those whose primary practice site may be at an affiliate, are full time members of Surgical Associates (the Departmental practice plan), hold Harvard Medical School appointments, and have significant research and teaching responsibilities back at the MGH – a hub-and-spoke arrangement.

Residency rotations to Salem and Lynn have been popular for fifty years for the high-volume surgical experience. The North Shore Medical Center (comprising the Salem and Lynn Union Hospitals, North Shore Children's, and Shaughnessy-Kaplan Rehabilitation Hospital) is now served as well by our thoracic and pediatric surgical faculty, headed by Dean Donahue and Dan Doody, respectively. The new community cardiac surgical program at North Shore is being led by Tom Vander Salm, MGH '76, who was recruited back from the University of Massachusetts where he was the long-time Chief of Cardiac Surgery. He did his first case in March. Tom has a new building dedicated to an innovative concepts of care involving the families of patients. Cardiothoracic residents and fellows will join the general surgery residents here for a portion of their training.

Newton-Wellesley Hospital joined the Partners HealthCare System in 1999. As at North Shore, thoracic and pediatric surgery are staffed by MGH faculty. The chiefs of these units are Henning Gaissert and Dan Ryan. A multidisciplinary breast center has been designed and is well along in implementation with MGH surgical

oncologists participating. The robust bariatric surgery practice (gastric bypass) already in place at Newton-Wellesley Hospital is joining forces for clinical research with our Weight Center and has been joined by MGH plastic surgeon Catherine Hertl, who will provide "body contour remodeling" necessary after massive weight loss. A multidisciplinary hand center is on the drawing boards, and a joint recruitment for a vascular surgeon is under discussion. The new chief of surgery at NWH, Fred Millham, will have an appointment in this department and will be looking to create a level 3 trauma center which would establish links with our Level 1 center. Our surgical residents are now in the second year there, a very successful addition to the MGH residency program.

Of course there are cross-currents closer to home as well: the abdominal organ transplantation service spanning the MGH and Brigham; the plastic surgery residency which is spread across the Harvard Hospitals and the multidisciplinary Dana-Farber/Partners Cancer Care Clinics. The surgical chiefs at each of the six Partners' Hospitals (MGH, BWH, NWH, Salem, Lynn Union and Faulkner) share outcomes data both for improvement within the system and as a test site for the National Surgical Quality Improvement Project.

All of this is not without its costs. Travel time between the different loci competes with other possible uses of time and detracts from efficiency. Off hours staff coverage and the care of such surgical patients at hospitals 10-15 miles apart are daily challenges. Some community surgeons may look upon the academic surgical faculty as carpetbaggers in competition for patients. The community hospitals, which are in need of boosting their own census and surgical volume, worry about losing patients by transfer to the academic center despite our assurance that those decisions will be appropriately based on a high level acuity, patient safety, and optimal quality of care.

Change happens gradually. We and the community are learning to trust each other – slowly but with perceptible progress, driven by demonstrable mutual benefit in selected activities. More to come. ♦

EVENTS OF NOTE

- *On October 1, 2002, HMS had a reception announcing The Hermes C. Grillo Professorship in thoracic surgery at MGH/Harvard Medical School. Douglas Mathisen is the first incumbent. Grillo is considered to be the "father of tracheal surgery".*
- *Seldom Come By: A Surgeon's Stories by Clement A. Hiebert has been published by Blue Publications, Portland, Maine.*
- *The American Association for Vascular Surgery has awarded its first Distinguished Service Award to John Mannick, the Moseley distinguished professor of surgery at Brigham and Women's Hospital.*
- *John Mulliken appointed full Professor of Surgery at Children's Hospital/Harvard Medical School. John is director of the Craniofacial Center and codirector of the Vascular Anomalies Center at Children's Hospital.*
- *Richard S. Myers has been named Chairman of the Board of Trustees of Rex Hospital in Raleigh, North Carolina. Rex is a 384 bed hospital which is currently a division of the University of North Carolina Healthcare System.*
- *Maverick Among Moguls: The Adventurous Career of a Pioneer Cardiac Surgeon by Benson R. Roe has been published by Creative Arts Book Company, Berkeley, California.*
- *Jesse E. Thompson received the First Rudolph Matas Distinguished Service Award given by the Southern Vascular Society*
- *David Torchiana has been appointed CEO and chairman of the Massachusetts General Physicians Organization.*
- *On October 1, 2003 Patricia K. Donahoe stepped down as Chief of Pediatric Surgery at the MGH, a position she has held since 1984, in order to devote her full efforts to her research. Joseph P. (Jay) Vacanti (MGH Residency 1981), the John Homans Professor of Surgery, internationally renowned for his pioneering work in tissue engineering and liver transplantation in children, has been named to succeed her as Surgeon-in-Chief of the MassGeneral Hospital for Children.*

COMINGS AND GOINGS MGH SURGICAL RESIDENCY PROGRAM



*First row l to r: Roshni Dasgupta, Matthew Hutter, Patrick Jackson, Andrew Warshaw, Carrie Sims, James Balcom
Second row l to r: Antonia Stephen, Jennifer Tseng.
Third row l to r: Glenn Egrie, Richard Lee, John Mullen*

Graduating Class 2003 Destinations

James Balcom, Chief Resident/Advanced Laparoscopic Fellow, MGH
Roshni Dasgupta, Hospital for Sick Children, Toronto
Glenn Egrie, Cardiothoracic Fellow, MGH
Richard Lee, Stanford University
John Mullen, M.D. Anderson
Carrie Sims, Chief Resident/Advanced Laparoscopic Fellow, MGH
Antonia Stephen, Cleveland Clinic
Jennifer Tseng, M.D. Anderson

Intern Class 2002-2003

Emily Christian-Lagay, Harvard Medical School
Pierre DeDelva, Emory University School of Medicine
Nathaniel Evans, Stanford University
Peter Fagenholz, New York Univeristy School of Medicine
Danielle Gottlieb, University of California, San Francisco
Anthony McCluney, Harvard Medical School
Scott Regenbogen, University of California, San Francisco
Liam Ryan, Columbia University College of Physicians and Surgeons

(SWEET continued from page 2)

"A recitation of his accomplishments in conventional terms fails to bring out the sense of total but complete integrity and warmth he engendered."

He had an understated but quick wit. At Grand Rounds one day when Leland McKittrick remarked "I never operate on patient when he is getting better or getting worse", Sweet retorted "What's the matter Mac? Given up surgery?" He could be quietly insistent. When I first sat down with him in his Beacon Street office in early 1952, he inquired about my name, "What's this E. Wayne (the name I was known by all through Harvard Medical School and my MGH residency years)? That won't fly in Boston. From now on you're Earle W." I replied "yes, sir" and it stuck!

He had long stated that he would retire when he reached age 60. He left the office on July 14, 1961 allegedly for his summer vacation at his New Hampshire farm but he never returned. Only his secretary knew of his plans. Seemingly in good health, he had never mentioned any serious health symptoms to either his assistant John Head or to me. He had been elected president of The American Association for Thoracic Surgery earlier that year and was already at work on his presidential address. In October he suffered a myocardial infarction, returned home only to incur a second or progressive infarct in January 1962. He died in the Eliot Community Hospital in Keene, New Hampshire on January 11, 1962, not yet 61 years of age. In an extraordinary irony of the times, cardiac surgeons were already embarking on revascularizing techniques which, a few short years later, could have saved his life.

He is the only AATS president to die in office. At what would have been his meeting, Richard Meade delivered Dr. Churchill's memorial eulogy. The retelling of an ancient Hindu legend by Rudyard Kipling concludes with some beautiful Churchillian prose worthy of repetition here. "Is it any wonder, gentlemen, that your calling should exact the utmost that Man can give—full knowledge, exquisite judgment, and skill in the highest, to be put forth, not at any self-chosen moment, but daily at the need of others?... Such virtue is not reached or maintained except by a life's labor, a life's single-minded devotion... Its true reward is the dearly prized, because unpurchasable, acknowledgment of one's fellow craftsmen. I have the honor of speaking before you, who are Masters in your craft. This brief pause in your search honors the name of one whom

you chose as your president, by no means the least in your long line of seekers who have followed the quest Brahm set them—Richard H. Sweet, a Master among Masters.

The legend of Richard Sweet is perpetuated by the inscription outside the Gray 4 Room dedicated to his memory and honor: *"Those attributes of a great surgeon: maturity of judgment, dexterity of hand, devotion in teaching, and serenity in crisis."* When you visit the MGH, do stop in the Sweet room and gaze at the Bachrach portrait (a painted photograph). It brings to very accurate life the man as I knew him: the typical demeanor of a distinguished gentleman, left arm akimbo the surgical right hand resting on the armchair, his suit coat open with the vest showing the gold chain and AOA key, and the ever-present red tie. It is the face, however, that is so alive: the receding hairline graying at the temples, the color of the cheeks, the mouth seemingly ready for a reassuring comment, but above all the warm blue eyes looking directly at you! (Editor's note: *Earl Wayne Wilkins, Jr., known to all as Wilk, graduated from Williams College and the Harvard Medical School to intern in surgery at the Massachusetts General Hospital in 1944. His surgical training was interrupted by a stint in the US Navy extending from 1946 to 48. He completed his residency in 1952 to become an associate of Dr Richard Sweet, an association he continued until 1961. In the years 64-65 he was a Visiting Professor in the First Surgical Service of the Allgemeines Krankenhaus in Vienna where he introduced thoracic surgery. In addition to thoracic surgery Wilk's interests in clinical medicine including the breadth of emergency services to say nothing of his work as Surgeon to the Bruins. He was a driving force behind the development of Boston Med Flight being its first president of the Board of Directors. His contributions clinical, administrative and teaching place him in a category with few peers.*)

In Memoriam

*Marshall K. Bartlett
James M. Davis
Adolph L. Gundersen
Walter M. Haynes, Jr.
Ronald A. Malt
William C. Quinby
J. Gordon Scannell
Robert Shaw
David B. Skinner*

(HURLBUT continued from page 3)

Dr Gordon Scannell met his wife! Hurlbut was very close friends with Francis Moore and Butch Donaldson as well, relationships which became important in our story.

Hurlbut was "released for availability to Armed Forces" July 1, 1942. Though he had hoped for assignment to sea duty, where he felt his experience sailing the Atlantic Coast would be valuable, his first two months of active duty were spent in the "Battle of Boston" at Chelsea Naval Hospital. As nearly half the doctors had been trained at MGH, the hospital functioned essentially as an annex to the MGH. He found the duty most satisfactory, with plenty of opportunities for surgery. He was soon transferred to the Naval Aviation Cadet Selection Board, First Naval District Headquarters, better known as the "USS Concrete". He spent five miserable months doing physical examinations on prospective aviators while agitating for reassignment. He was so obsessed with doing something active in the war that he even threatened to resign his medical commission and take a commission as a line officer, which he was fully entitled to do based on his Navy ROTC training. He was thus assigned as medical officer to the USS Halligan, DD-584, a 2100 ton Fletcher Class Destroyer. Named for a South Boston born veteran of the Spanish American War, World War I, and Assistant Chief of Naval Operations, it was a 376-ft long destroyer, built in the Boston Navy Yard in four months. Hurlbut watched the ship being built and took great pleasure in outfitting the sick bay. It is said that he "spent many days collecting the right equipment for sick bay with all the same loving care with which he would have outfitted the cabin of his schooner in the days of peace, or his new office had he been going into practice". Also during this time he spent a month at Harvard as doctor for the V-12 program.

After a shakedown cruise, The Halligan spent a five month deployment in the Atlantic, the highlight being an escort ship for Roosevelt to the Tehran conference, and several months of anti-submarine warfare off North Africa. She then was sent to the Pacific, transiting the Panama Canal in January of 1944. He describes medicine on a destroyer as being limited, but varied—"a general practitioner in every sense of the word—the sick bay, although small is very well equipped, and the "worm" has been extracted more than once". He reported that all tendon repairs (7) healed 100% un-

(HURLBUT continued on page 10)

(HURLBUT continued from page 9)
eventfully.

Dermatology was his biggest challenge, with various "bizarre eruptions which I defy some of the most eminent men in the field to diagnose". When in port, he would take sick call in the base hospitals as a method to keep up with advances, and found that the surgeons at base hospitals were always glad to have him scrub in on surgical cases.

In addition to his medical duties, Hurlbut served as morale officer on the Halligan. He felt his commanding officer, Comdr. C.E. Cortner, to be a "perfectly grand skipper, and he has given me free rein". Comdr. Cortner received a promotion to command Destroyer Division 12 after Iwo Jima, and was replaced by Lt. Comdr. Edward T. Grace. Much of Hurlbut's free time was spent as an assistant navigator and standing deck watches at sea or working in the communication department. During general quarters he was armed with a movie camera to take official pictures of the action. He also carried with him his accordion, or as he called it, his "belly Baldwin", with which he entertained frequently.

Halligan was involved in the invasion of the Philippines, entering Leyte Gulf October 20. She survived numerous air attacks: at one point two bombs passed between her stacks and struck the water without exploding. Her next assignment was the invasion of Luzon, where she downed numerous fighters and kamikaze planes, and then Iwo Jima. Over the course of these battles, the Halligan rescued seven Navy fliers from ditched aircraft—the captain of the downed flier's carrier rewarding The Halligan with a quart of whiskey for the skipper and ten gallons of ice cream for the ward room. During one of these battles, we know not which, Lt. Terry E. Lilly, Jr, MC (East Surgery 1943) reported that Hurlbut made a startling discovery in foreign bodies. "A sailor had been struck while standing on the deck of his ship, some four hundred yards from the point of explosion aboard another ship. In the operating room, while irrigating a deep shrapnel wound of the buttock, Hurlbut found there and removed unharmed a FISH, two and one half inches long—weight unknown!!!". I have found numerous references to other humorous accounts in Hurlbut's letters, but have been unable to locate any of these letters. Apparently all of his communications were marked by positive attitude and good humor, as were all his interactions with others. Apparently, all of his letters also spoke

of his intense desire to return to Boston to practice and raise his family in the peace which all were confident would follow the defeat of Japan.

Halligan arrived off southwestern Okinawa March 25, covering mine sweepers which were patrolling waters heavily mined in irregular patterns. The ship was at General Quarters, with some of the officers and men having a dinner of cold sandwiches. At 18:35 a tremendous explosion rocked the ship, sending smoke and debris 200 feet in the air, as the ship had hit a mine head on. The forward magazine exploded, blowing off the forward section of the ship, including the bridge, back to the forward stack. We do not know where Hurlbut was at the time of the explosion, but must assume he was either having dinner in the officers' mess two decks above the forward magazine, or on the bridge as was his habit during GQ. Either way, it seems he must have been killed instantly with the explosion. Ensign R.L. Gardners, the senior surviving officer, organized search and rescue parties, and gave the final orders to abandon ship.

Halligan had lost one half of her crew of 300 and all but 2 of her 21 officers. She drifted aground on Tokashiki, a small island west of Okinawa, the following day, and in 1957 her hulk was donated to the government of the Ryukyu Islands.

Francis Moore had been a residency colleague of Hurlbut's and was a junior member of the faculty of the MGH at this time, functioning essentially as the first Residency Program Director. He wrote an obituary in the MGH News June 1945: "The characteristic vim and vigor with which Bob did everything and the lighthearted mannerisms which were so much a part of his character will be sorely missed in the life of the MGH in the years of peace to come". In addition to his wife, he left his four children—Robert Jr, 8, Sally, 6, Patricia, 2 ½, and Caroline, 17 months. Several months after his death, Dr. Moore started working with Hurlbut's wife, Sally, and mother, Edna Woolson Hurlbut to create a library in memorial to Hurlbut. At the same time, Butch Donaldson had begun exploring the possibility of a memorial of some type as well. On November 9, 1945 the two groups came together with a plan for a memorial—a library to be located on White 3 or 3A. It was originally felt that a portrait would be too formal, and a photograph of "Robin" and ship model or perhaps a bronze plaque in nautical motif were felt to be more appropriate. After some discussion and communication, it was decided to

move forward with an informal portrait, and funds for this were raised from 70 staff members and former residents. I wonder if the lighthearted nature of Hurlbut and the desire for an informal portrait played a part in the selection of the artist—Germain Glidden of Norwalk, Ct, who had worked with Dr. Moore as an undergraduate on the Harvard Lampoon. The coat of arms on his stationary reveals a tennis racket, squash racquet, and what I take to be a bottle of wine, all of which I believe Hurlbut would have found most acceptable. The price of the portrait was \$600, including a preliminary sketch, which was reviewed by the donors as "You did not intend it to be a likeness and most of us feel that it is not a likeness although the eyes, forehead, and hair are quite good. The mouth and chin are a little wrong somehow. We have agreed that he should not have a vest because he will be wearing a gabardine suit. Also, several people have suggested that it would be best for him to have a soft informal collar. So, I guess you can carry on!" Not what I would call a rousing success. Upon delivery of the portrait, Moore was left to make the final payment from personal funds, as Butch Donaldson, the treasurer, was away for a month in Europe. Unlike some future program directors, he was eventually reimbursed.

Work on the Hurlbut Room itself was tedious—Hurlbut died in March 1945, planning of the room began in August of 1945, and there followed the requisite committee meetings. Francis Moore was in charge of this project, and his voluminous records speak to his interest in detail and documentation. His correspondence with Sally Hurlbut, Butch Donaldson, Dr. Faxon, General Director, and Dr. Churchill cover everything from the pipes running across the ceiling to the placement of the blackboard. The controversy over the nautical motif went on for quite a while, with Butch Donaldson arguing until the bitter end for at least a picture of the Halligan. There was a running controversy over whether to move a door, which was surpassed only by the location of the computer outlets in the present Hurlbut Room. The book plate required several modifications before it was found satisfactory to all involved. In the end, the room opened in November, 1947—two years and two months for the memorial, four months for the ship! Even after the room was opened, a running controversy ensued over who was to keep the room clean. This particular controversy remains unsettled. An official (HURLBUT continued on page 11)

(HURLBUT continued from page 10) announcement was sent to the donors and staff, but we can learn more from the draft of this announcement penned by Dr. Moore. This draft was submitted to Dr. Churchill who made a few minor changes, including the deletion of “and relaxation” from the sentence “The room will be open constantly and it is the hope of the donors that it will be used by the surgical house staff for reading, study, and relaxation”. Under “Any suggestions?”, Churchill added “What is Relaxation”.

I believe there are several things we can learn from this brief biography: 1) Some things never change—projects take longer than expected: life is hard work, interrupted by moments of bliss and endured by hopes and faith of a better future; and humans can maintain optimism in the darkest of times if they so choose. 2) Some things do change—despite what we may feel in moments of despair, organizations do change to meet demand—The MGH shortened training to provide much needed surgeons for the war effort, Harvard participated in the V-12 program, the administration allowed a door to be moved for positioning of a desk in the Hurlbut Room! We may not get the changes we want when we want them, but with effort, positive change is possible. 3) Most importantly, we as individuals reach our best when we do what we know is right. From all I can gather, Hurlbut was a modest, earnest, and honest young man who hoped to be a well respected surgeon trusted by his colleagues. In this, he was quite successful. I feel confident he could have sat out the war doing physical examinations on potential aviators and perhaps even been able to work in some capacity at MGH, thus helping to launch his future peace-time practice. He chose instead to serve his country and his fellow man despite placing himself at danger. Given his education and training, perhaps he could have obtained a posting in a major naval hospital and furthered his education. Instead, he chose to do what he knew how to do, to practice surgery (at an admittedly simple level compared to today’s residency graduate) for those at the front lines of war. This is an example of true selfless service. To serve in this fashion is not easy, for it places those who are served ahead of oneself. It requires a subjugation of self interest in the interest of others. It is free of the need for recognition and does not calculate the results of service. It does not discriminate who will be served, but serves all. This type of service is difficult, but is the highest calling of

humanity. This type of service is what we should all strive for in our life as surgeons.

Acknowledgements

I would like to express my appreciation to all who have made this interesting exploration possible—to Dr. Hodin for asking the question “who was Hurlbut”, to Francis Brooks, a patient of mine who knew Dr. Hurlbut as a child and young man, and served as a communication officer on the Natama Bay, for which the Halligan saved three fliers; to the National Naval Historical Center and Bureau of Ships for information on the Halligan, to Les Ottinger, former gunnery officer on a Fletcher Class destroyer, to the staff of Charlestown Navy Yard National Park for free access to the Cassin Young, and most importantly to all who have served the MGH surgical residency for preserving all the records necessary for this review.

(Editor’s note: Charles M. Ferguson began his surgical internship at the Massachusetts General Hospital in 1976 and served as East Surgical Resident in 1982. On completion of the East Residency, he served as Assistant Professor of Surgery, Emory University School of Medicine, until 1990 when he returned to the MGH. He is now a Visiting Surgeon at the MGH and Program Director of the Surgical Residency Program. His clinical emphasis is on laparoscopic techniques and his clinical care is performed in the setting of teaching surgical residents and medical students, in collaboration with his administration and educational activities as the Program Director of the Surgical Residency Program. He has had a long acquaintance with MGH for his father, Ira Ferguson, was a surgical intern and resident here in the 1950’s. He contributes a solid and effective teaching experience for surgical residents and students.) ♦

(ONCOLOGY continued from page 6)

cancer care is provided by multidisciplinary teams with their own educational and patient care (tumor board) meetings. The Commission is aware of these practice patterns and will be changing requirements for a generic tumor board in early 2003. Classic weekly tumor boards are still valuable in smaller community hospitals. General surgical involvement must be sustained as we encourage evidence-based care and practice guideline audits.

If surgeons are to maintain their leadership roles in oncology, we must educate the residents about tumor biology, tumor staging, patterns of treatment failure, and the rationale and strategies for adjuvant che-

motherapy and radiation therapy. The most important factor in my academic success was my involvement in the adjuvant radiation therapy for rectal cancer, and for Bill Wood the adjuvant therapy for breast cancer. In academic medical centers, and particularly in the major cancer centers, both patient care, clinical and translational research are coordinated by “disease teams”. Traditional discipline-oriented departments are becoming marginalized. Before I left Memorial Sloan-Kettering Cancer Center, my position had evolved from Chief of Colorectal Surgery to Director of the Colorectal Disease Management Team. The surgeons, medical oncologists, and radiation therapists involved in colorectal cancer all reported to me – this is the future!

(Note from the Editor: A native New Yorker, Alfred Cohen received a BA. from Cornell University and an MD from Johns Hopkins before coming to the MGH for his surgical training. During his residency he did two years of surgical research at the NIH before he was the East chief Resident in 1975.

He committed himself to a career in surgical oncology and along with Bill Wood was Co-Director of Surgical Oncology at the MGH from 1980 to 1986. Then he moved to the Memorial Sloan Kettering Cancer Center as Chief of the Colorectal Service and Professor of Surgery at Cornell. His position gradually evolved to Director of the Colorectal Disease Management Team, showing the change to the “team approach” in current medicine. In 2000 he assumed his present position as Director and CEO of the Markey Cancer Center and Professor of Surgery at the University of Kentucky in Lexington.

Known as a superb technician, Al has also been active in tumor immunology, and monoclonal antibody research. He has published extensively and been the Principal or Co-Principal Investigator in 25 clinical trials. Currently he is involved in advanced surgical education retraining general surgeons to utilize sharp mesorectal dissection, autonomic nerve preservation, and sphincter saving procedure. He is the current president of the Society of Surgical Oncology. He is truly a complete surgical oncologist.) ♦

**MGH DEPARTMENT OF SURGERY
ANNUAL RECEPTION
HILTON CHICAGO
INTERNATIONAL SOUTH
MONDAY, OCTOBER 20, 2003
6:00 TO 8:00 P.M.**

(MGH CARDIAC SURGERY continued from page 4)

done in the White Building with Drs. Torkild W. Andersen, Henrik H. Bendixen and Phillips Hallowell as the anesthetists (a term preferred by Dr. Henry K. Beecher, in contrast to "anesthesiologist," as Beecher felt that the conduct of anesthesia was significantly an art, rather than a science). Early operations were associated with high mortality, such that on more than one occasion Scannell was heard to question rhetorically, "Are we doing the right thing (to continue)?" Thankfully, he and other pioneers of that era, encouraged by their colleagues in cardiology, persisted in the face of great odds and without most of the information and technology that have led to the successes that now seem routine. (When Mort Buckley and I arrived as interns in 1958, surgical mortality in cardiac surgery at the MGH was 25%. When I was appointed to the staff in 1968, it was 14%. When I retired in 2000, that same mortality figure was 2.7 %, including emergencies).

After approximately ten operations, and with the advent of defoaming (i.e., de-bubbling) agents from DuPont, the oxygenator was changed to the Kay-Cross rotating disc oxygenator. The sigmoidal finger pump was replaced by DeBakey roller pumps. Austen developed a pulse duplicator apparatus which allowed measurement of pressures and flows and observation of valve motion in autopsied hearts with aortic stenosis. The application of these studies and the use of dental instruments formed the basis for Scannell's successful series of debridements of severely calcified and stenotic aortic valves in patients with advanced congestive heart failure, for whom no medical treatment was possible. In contrast to other centers*, where initial operations were directed at older children and young adults with congenital heart defects, because of the large rheumatic patient population here, the thrust of the cardiology and cardiac surgical effort at the MGH, initially, was for the treatment of adult patients with valvular disease.

Improvements in both intra-operative management and post-operative care brought further successes. Drs. Andersen, Bendixen and Hallowell were joined by Dr. Myron B. Laver, who was to have a major impact on the development of cardiac anesthesia at the MGH** (and later by notables, such as Drs. Edward Lowenstein, Brian Dalton, John H.L. Bland, Daniel M. Philbin, Demetrios G. Lappas, Robert Schneider and Nathaniel Sims). These pioneers developed a dedicated cardiac anesthesia team and deepened understanding of the physiologic consequences of anesthesia and cardiopulmonary bypass on cardiac patients. Ms. Althea Libby was appointed as the first of a continuum of highly talented perfusionists. Drs. Gordon F. Myers and Alan F. Friedlich, who had started the catheterization laboratory, initially to define cardiac physiology, soon began to define hemodynamically those patients who would become surgical candidates. Following this era of rapid progress, Dr. Myers, when asked what he thought were the most important contributions to advancing cardiac surgery at the MGH, replied facetiously, "That's easy: When Hawk Shaw*** stopped running the pump and when Gordon Scannell stopped closing his own chests!" In those early days, mechanical problems with the pump and its many connections were not rare. Similarly, lack of understanding of the coagulation cascade and resulting coagulopathies aggravated by cardiopulmonary bypass caused many a return to the O.R. for post-operative bleeding.****

Increasing awareness of the impact of coronary artery atherosclerosis led to early attempts to treat patients with angina pectoris and even myocardial infarction. Burke and Nardi reported a case of emergency endarterectomy (J. Thorac. and Cardiovasc. Surg.,

1961) of the left anterior descending coronary artery (LAD) in a 52 year old man who collapsed at the water fountain outside Burke's office on White 4 (I was an unwitting observer to these events, waiting in the outer lobby for an appointment with Dr. Churchill). Open chest cardiac massage was performed by Dr. William Sweet, and the patient was intubated by Henrik Bendixen. Because of persistent cardiac standstill (asystole), Burke and Nardi took the patient to the operating room and performed thrombendarterectomy of the occluded LAD with successful restoration of the circulation, the operation performed without cardiopulmonary bypass. The patient survived 48 hours, but succumbed to respiratory complications. Nevertheless, this heroic procedure was a milestone in the emergent treatment of acute myocardial infarction.

Following a fellowship with Sir Geoffrey Wooller at Leeds, England, where he performed many operations with the Tubbs transventricular dilator for relief of mitral stenosis, Gerald Austen returned to the MGH as Resident on the East Surgical Service. Following completion of the residency, Austen served a two year fellowship with Dr. Andrew Glenn Morrow in the Clinic of Heart Surgery at the N.I.H., where he completed studies on right ventricular function, controlled coronary perfusion (for the conduct of aortic valve operations), and the acute effects of ventricular aneurysm. In 1963 Austen joined the staff of the MGH and proceeded to usher in, with Scannell, the era of prosthetic valve replacement. In 1966 Austen was joined by Dr. Mortimer J. Buckley, who also had pursued studies with Morrow at the N.I.H.. In 1967, Dr. El-dred D. Mundth joined the team, followed by Dr. Willard M. Daggett, Jr. in 1968. Austen and his group, by the end of the 1960's, created the most active cardiac surgical program in New England and one which competed successfully with the best in the country. Additional staff cardiac surgeons, who came later and who made substantial contributions to the success of the Cardiac

* e.g.: the University of Minnesota, the Mayo clinic, Johns Hopkins, and the Boston Childrens Hospital

** For a more thorough treatment of the development of cardiac anesthesia at the MGH, the reader is referred to "This is No humbug,- A History of the Department of Anesthesia at the MGH," Edited by Richard J. Kitz, Chapter 14, pp 269-330 by Dr. Edward Lowenstein. This volume is available through the office of Dr. Warren Zapol, Chief of Anesthesia, who kindly provided me with a copy, unfortunately, *after* I had written this manuscript!

*** For a period of time, before Ms Libby was trained as a full time perfusionist, the perfusions were managed by Dr. John Remensnyder, who later entered the field of plastic and reconstructive surgery.

****In the early days of cardiac surgery at the MGH, Dr. G. Melville Williams, now Professor of Surgery at Johns Hopkins, but then senior resident on cardiac surgery, was mopping up and preparing to close the sternotomy after a successful pump run. Dr. Scannell returned to room 10 to check on things, but found the room in darkness. He inquired with dismay, "What's going on? Are you all right?" Dr. Williams was chagrined but explained, "The bleeders only come out and bleed in the dark after the chest is closed so we turned out the lights to fool them and then we'll coagulate them when we turn on the lights. We call this a false sternotomy closure." Dr. Scannell's reply to this explanation was said to be favorable.

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Surgical Unit, include Dr. M. Terry McEnany, Dr. A. John Erdmann III, and Dr. Frederick H. Levine. Jerry Austen taught us all! Following the lead of Erdmann in the 1970's (and the early example of Dr. Ernest A. Codman in the early 1900's who advocated physicians documenting their results), the MGH Cardiac Surgical Unit has carried on this tradition under Dr. Akins' supervision, of a long standing computerized patient data base: End Results in Cardiac Surgery.

The definition of the proximal nature of coronary artery disease by Blumgart at the Beth Israel and the subsequent delineation angiographically of coronary anatomy by Mason Sones in Cleveland, provided a basis for intervention in this dread disease which has claimed the lives of more Americans than any other disease process. Mundth introduced at the MGH first the Vineberg intramyocardial mammary artery tunnelling procedure to promote collaterals to the ischemic myocardium, and then, following the landmark report of Favalaro and Effler, direct coronary artery bypass grafting (CABG) with saphenous vein for the treatment of patients with stable angina pectoris. After George Green's successful demonstration of direct anastomosis of the left internal mammary artery (LIMA) to the left anterior descending coronary artery (LAD), Mundth and Daggett increasingly applied this arterial conduit to CABG operations, until Daggett's series of patients, studied angiographically, showed a vein graft patency rate of 92% at two years, leading to a diminished use of the LIMA in the 1970's, as the number of distal anastomoses with saphenous vein increased. This trend was reversed when, in 1984 and 1986, Loop, Cosgrove and Lytle at the Cleveland Clinic published their findings of superior patency of the LIMA over saphenous veins. The use of a LIMA to LAD anastomosis was shown to convey a significant longevity benefit to patients ten years after CABG operation. Today, it is a rare patient who does not have a mammary artery to coronary artery anastomosis in his or her operation for coronary artery disease.

In 1966 Buckley and Austen began experiments with the AVCO intra-aortic balloon pump (IABP) developed by Arthur Kantrowitz and his research group working with Austen and Buckley. Austen and Kantrowitz agreed that the MGH would be the site of initial clinical evaluation of the AVCO intra-aortic balloon pump. Buckley and Austen, along with engineers from the AVCO Everett Research Laboratory carried out successful experimental studies in pigs. W. John Powell, Jr. and Daggett defined the hemodynamic effects of balloon pumping in a canine failing heart model. This device, invented by Mouloupoulos, Topaz and Kolff in Cleveland, was based on the principle of arterial counterpulsation (energy in during diastole, energy out during systole) evolved by Clauss in Harken's laboratory, and founded on the studies of myocardial energy efficiency, as expressed in the Tension-Time Index (T.T.I.), by Dr. Stanley J. Sarnoff, who had been a surgical house officer under Dr. Churchill at the MGH in the late 1940's!

Initial clinical successes from application of the intra-aortic balloon pump (IABP) to patients in cardiogenic shock following myocardial infarction (for whom no medical treatment was available and mortality was virtually 100%), successes achieved significantly through the tireless efforts of Buckley, brought veritable busloads of patients referred to the MGH in various states of hemodynamic disarray following infarction. In this group of very sick patients were many with mechanical defects or complications, such as ruptured papillary muscle causing acute mitral insufficiency, ruptured interventricular septum (post-infarct VSD),

acute ventricular aneurysm, uncontrolled ventricular arrhythmias, and primary power failure (cardiogenic shock) due to a large infarct. These patients and their conditions became the subject of intense study by our surgical group and by our cardiological colleagues, Drs. Robert Leinbach and Herman Gold in the Myocardial Infarction Research Unit (MIRU) on Phillips House 2. In a landmark case (which led to a widely recognized clinical series), Mundth successfully revascularized (coronary bypass) a patient in cardiogenic shock after acute myocardial infarction, the patient supported pre and post-operatively by IABP. Buckley elaborated principles which defined those patients who may benefit from emergency CABG after myocardial infarction. Austen had previously achieved the first clinical success in treating a patient with post-infarct ruptured papillary muscle by way of mitral valve replacement, again leading to a successful series of patients treated surgically for acute mitral regurgitation with peri-operative IABP support. Daggett designed operations to correct post infarct VSDs which occurred in different anatomic locations and were not accessible through those incisions, nor amenable to those techniques, employed for septal defects of congenital origin. These operations included replacement of infarcted left ventricular free wall myocardium with prosthetic fabric, which contributed to the ongoing evolution of procedures aimed at effecting therapeutic ventricular remodeling (limit maladaptive remodeling), and led to a successful series of patients operated for ruptured interventricular septum complicating acute myocardial infarction.

Broadening the application of balloon pumping for support of patients with low cardiac output syndrome and other shock states, Buckley, Craver et al reported on the salvage of patients who could not be separated from the heart lung machine, after an otherwise successful operation, by instituting support with IABP. Mundth, Buckley and Levine reported on support with IABP of patients encountering acute ischemia in the cardiac catheterization laboratory, followed by urgent surgical revascularization. This application was facilitated by the development of the percutaneous (Seldinger) method for inserting the balloon pump through the femoral artery, a method so successful that Lamuraglia was subsequently able to report on the successful placement percutaneously of IABPs in patients with previously placed aorto-iliac prosthetic grafts. Currently, the most frequent indication for IABP support is in patients with myocardial ischemia due to unstable angina pectoris refractory to maximal medical therapy.

Overall, the consistent application of IABP support of patients with coronary artery disease (CAD) and its complications has provided a therapeutic platform for direct surgical intervention on otherwise unstable patients with cardiac ischemia, heart failure, and shock. This integrated approach to the treatment of patients with CAD has profoundly affected how this disease process is managed throughout the world.

Austen, De Sanctis, Buckley, and Dinsmore were instrumental in defining the site of origin of dissecting aortic aneurysms and devising operative approaches to correct this otherwise frequently fatal condition. Dr. Cary Akins, who joined the staff after his chief residency and service in the Air Force in 1977, advanced the surgical treatment of ascending aortic dissecting aneurysms by treating this Type A (Stanford Classification) dissection with composite aortic root replacement with a valved conduit (modified Bentall) to completely remove abnormal aortic tissue involving the sinuses of Valsalva. Akins along with colleagues Mundth, Buckley and Daggett published a report on delayed operative . (MGH CARDIAC SURGERY continued on page 14)

(MGH CARDIAC SURGERY continued from page 13) management of thoracic aortic disruption (deceleration injury) in patients whose trauma, usually the consequence of motor vehicle accidents, was often complicated by head injury and extremity fractures. This concept, which ran counter to prevailing practice, ultimately became an accepted approach leading to improved outcomes in this critically injured group of patients. Later, Dr. Alan Hilgenberg, a contemporary of Akins, collaborated with Drs. Richard Cambria and Eric Isselbacher to establish at the MGH a Center for Thoracic Aortic Surgery. Hilgenberg has further evolved successful approaches to aortic arch aneurysms, once thought to be inaccessible to surgical treatment; he routinely brings his patients to the intensive care unit, after a difficult operation with multiple long aortic suture lines, "dry as a bone."

Following initial studies in the laboratory on the effects and safe limits of hemodilution, Buckley and Laver developed a program of intra-operative management for the safe conduct of heart operations in patients belonging to the Jehovah's Witnesses faith, which prohibits, for its followers, transfusion of homologous blood or even stored autologous blood and other fractionated blood products. Combining meticulous surgical technique with pump circuitry that kept the circulating blood in constant contact with the patient, they were able to successfully carry out complex heart operations without blood transfusions. Recent advances, including preoperative treatment with erythropoietin to boost red cell mass and intraoperative treatment with aprotinin to minimize blood loss, both fostered by Dr. Michael D'Ambra of Cardiac Anesthesia, have further enhanced the safety of heart operations in this group of patients.

Many cardiologists, as described above, have influenced the development of cardiac surgery at the MGH. Dr. J. Warren Hartorne, who along with Dr. Charles A. Sanders, brought coronary angiography to the MGH, evolved pacemaker principles and techniques that have become widely accepted. Harthorne led the field, nationally, in the clinical application of transvenous placement of permanent pacemakers, as well as the development and application of dual chambered (sequential atrio-ventricular) pacemakers, the hemodynamic consequences of which were defined experimentally by Daggett and Powell, and applied clinically in the coronary care unit by Leinbach and Gold. Harthorne has directed the Pacemaker Unit at the MGH, training generations of cardiologists and cardiac surgical residents in the principles and techniques of cardiac pacing, while attaining an international reputation as a leader in pacemaker technology.

Dr. Austen, who had served as Chief of Cardiac Surgery, following his return from the N.I.H. to the M.G.H., was appointed Chief of the Surgical Services and subsequently, Edward D. Churchill Professor of Surgery at Harvard Medical School, succeeding Dr. Paul S. Russell, in the spring of 1969. Austen then appointed Dr. Mortimer J. Buckley as Chief of the Cardiac Surgical Unit in 1970, a position Dr. Buckley held until his retirement in 1998. During his tenure and under his leadership, Dr. Buckley further advanced cardiac surgery; he developed surgery of congenital heart disease, collaborating with Dr. Laver of anesthesia, as well as with his cardiological colleagues, Drs. Allen Goldblatt and Richard Liberthson, evolving successful approaches to total correction of complex cardiac anomalies in children, particularly Tetralogy of Fallot. The additions to the staff of Dr. Marshall Jacobs and then Dr. Gus J. Vlahakes, following their residency training and work with Dr. Aldo Castenada at The Children's Hospital resulted in infants having their cardiac anomalies cor-

rected at ever earlier ages, indeed in newborns.

Collaborating with Dr. Michael D'Ambra of the Cardiac Anesthesia Group, who demonstrated the effectiveness of prostaglandin (PGE1) dilation of the pulmonary arteries, Buckley was able to augment, with this pharmacological treatment, the surgical repair of congenital defects, complicated by pulmonary hypertension, resulting in improved outcomes. D'Ambra's studies of Prostaglandin E1 also brought increased success for the treatment, intraoperatively, of right ventricular failure and bronchospasm and presaged the use of nitric oxide, an even more powerful pulmonary vascular dilator, later employed by Gus Vlahakes for correcting cardiac defects in infants with severe pulmonary hypertension. Daggett, from his experience with Gross at the Children's Hospital, developed a clinical series of patients with coarctation of the aorta, accumulating over 200 cases from infancy to the elderly.

Dr. Buckley and Dr. Hermes Grillo instituted the formal residency training program in Cardiac and Thoracic surgery at the MGH in 1972, and appointed Dr. Douglas Behrendt as the first Chief Resident in that program. Buckley, a master surgeon, was at his very best in emergency situations, often during an operation on a patient who had been operated two or three times previously. Nevertheless, even given his exceptional technical skills, he was most distinguished as a teacher, training 46 Chief Residents* during his tenure, surgeons who have gone on to make their own contributions, often as leaders and innovators in cardiac surgery at other institutions. Under his direction, cardiac surgery advanced at the MGH in many areas. Blood conservation in heart surgery, fostered by Cosgrove and Thurer, both MGH surgical trainees, was given impetus locally by Daggett, who established with Dr. Charles Huggins, MGH Blood Bank Director, a preoperative autologous blood donation program for patients undergoing elective heart surgery, and as well, instituting perioperative blood salvage technology. Daggett, Warshaw, Jacobs and Haas defined acute pancreatitis as a complication of cardiopulmonary bypass, previously often overlooked as a cause of multi-system failure, and by its recognition and early treatment, improved the outcomes of patients affected by this post-perfusion complication.

Potassium cardioplegia followed direct coronary artery perfusion and then local cardiac hypothermia as methods for intraoperative protection of the myocardium against the deleterious effects of ischemia during aortic cross clamping. Following the classic report by Gay and Ebert, Mundth introduced this method to the MGH. Daggett improved the delivery of the arresting solution by using a pump circuit and then, with his research group, extended the safe time for the correction of complex cardiac abnormalities by refining the chemical composition and by the development and application of oxygenation of cardioplegic solutions to support aerobic metabolism. This research group demonstrated that the inclusion of red cells in cardioplegic solutions (compared to crystalloid solutions) effectively preserved the myocardial capillary bed, thus improving the distribution of the protective oxygenated solution. These basic studies were followed by the clinical demonstration of the superiority of oxygenated, dilute blood cardioplegia

Akins, following the introduction by Mundth of local vessel occlusion (without aortic cross clamping) for construction of

*At a retirement "roast" for Dr. Buckley, held at the Ritz Carlton in June, 1998, ALL of his trainees were present!

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coronary bypasses, developed this method of myocardial preservation to a high art form with outstanding clinical results. Additionally, Akins fostered clinical investigations in valve surgery and presented an extensive clinical experience supporting combined CABG and carotid endarterectomy at one sitting (an experience contributed to strongly by the collaboration of Drs. Ashby Moncure and Richard Cambria). With the demonstration that the chordal and papillary muscle apparatus were important to preservation of ventricular geometry and function following mitral valve operations, Akins was an early proponent of mitral valve reconstruction, rather than replacement, an approach now widely accepted. To improve ventricular geometry and function following ventricular aneurysm repair, Daggett introduced to the MGH the Dor patch exclusion technique, which Vlahakes has extended in his surgical approaches to the treatment of congestive heart failure. As an aside, when I was asked, some years ago, what I thought was the most important contribution to success in cardiac surgery over the previous two decades, I replied, "Cardioplegia." When Cary Akins was asked the same question, he replied, "Prolene."

Outreach programs from the MGH evolved independent cardiac surgical programs regionally at the Beth Israel Hospital, the Mt. Auburn Hospital, the University of Massachusetts Medical Center, St. Vincent Hospital in Worcester, and internationally at Athens University in Greece. Most recently in this realm, Dr. Thomas J. Vander Salm has been recruited to direct the MGH community cardiac surgical program at North Shore Medical Center (Salem Hospital), where operations have begun in the spring of this year, 2003.

Following Andreas Gruntzig's initial report of successful percutaneous transluminal coronary balloon angioplasty (PTCA) in 1977, Akins, Block, Palacios and Gold published in 1989 the first clinical study comparing the results of this catheterization laboratory interventional technique to surgical coronary bypass (CABG). Although mortality in the patients studied did not differ as a function of the treatment method, the sustained relief of angina and freedom from further procedures was best achieved by coronary bypass grafting (CABG). Also in the Cath. lab., Block and Palacios essentially retired surgical mitral valvulotomy as treatment for mitral stenosis by showing that percutaneous balloon dilation of the stenotic mitral valve was as effective as surgical commissurotomy in treating this condition.

Surgery for ventricular arrhythmias, by way of electrophysiologic mapping (Dr. Jeremy Ruskin, founder of the MGH Cardiac Electrophysiology Laboratory and his colleagues, Dr. Hasan Garan and Dr. Brian A. McGovern) and endocardial resection of the offending focus, was developed by Drs. Buckley, Jacobs and Vlahakes. This advance was followed by the introduction to the MGH of surgical techniques to correct Wolff Parkinson White (WPW) Syndrome, and, as well the Cox Maze procedure for the permanent correction of chronic atrial fibrillation by Dr. Gus J. Vlahakes*. Vlahakes also has advanced congenital heart surgery, following in the footsteps of Buckley and Jacobs, and introduced arterial homograft replacement of the infected aortic root in patients with prosthetic valve endocarditis, while accomplishing important research on artificial hemoglobin solutions.

The arrival of heart transplantation at the MGH in 1985 followed the introduction of cyclosporine therapy for more selective immunosuppression with improved outcomes (The trustees of the MGH had rejected a proposal for a clinical program in the late 1970's,

suggesting that further research was needed and expressing the opinion at that time that the operation was experimental). Jacobs and D'Ambra carried out successful orthotopic heart transplantation in animals, leading the way to clinical application. Making up for lost time, Buckley and Jacobs and A. Benedict Cosimi initiated the clinical heart transplant program at the MGH where, to date, over 200 transplants have been done. Buckley subsequently appointed Vlahakes to direct this program, joined by Drs. Torchiana, Madsen, and MacGillivray. Recently, Dr. Joren Madsen, possessing a doctorate in clinical immunology from Oxford, in addition to his M.D. degree, has succeeded Vlahakes as Director of the Heart Transplant Program. Madsen currently is pursuing research on xenografting and the induction of tolerance with Dr. David Sachs, and, as well, studying the prevention of coronary atherosclerosis as a reflection of chronic rejection.

One of the newer problems to be appreciated clinically in heart surgery has been the generation of antibodies to heparin, the anticoagulant necessary for the conduct of CPB (and for which, currently, no reliable substitute has been found). This condition termed heparin induced thrombocytopenia or H.I.T. may progress to heparin induced thrombocytopenic thrombosis, or H.I.T.T. with repeated or ongoing exposure to heparin resulting in a high mortality rate. D'Ambra, while chief of the Cardiac Anesthesia Group, working with Dr. Michael Laposata of Pathology (now Director of the Clinical Laboratories), developed a successful pharmacologic algorithm for blockade of the antibody, based on his research with prostaglandins. This treatment program has made it possible to operate successfully on H.I.T. positive patients and use heparin for cardiopulmonary bypass despite the presence of the antibody.

D'Ambra and his successor, Dr. Scott Streckenbach, recognizing the need for additional intraoperative, real time monitoring and imaging in cardiac surgery (to verify correction of congenital cardiac defects, facilitate the removal of air after valve operations, assure the competence of valves after replacement or reconstruction and, as well, assess regional and global ventricular function in patients found difficult to separate from CPB) developed, in collaboration with Drs. Picard and Weyman of the Cardiac Echo Laboratory, a successful program of evaluating by transesophageal echocardiography (TEE) these aspects of intraoperative care on a routine basis.

Following Dr. Buckley's retirement in 1998, Dr. David F. Torchiana was appointed by Dr. Warshaw as Chief of Cardiac Surgery. Dr. Torchiana, also a master surgeon and teacher of surgery, has, in the past four years, led the unit in several important directions, aimed at improving the care of cardiac surgical patients. Dr. Thomas MacGillivray, Dr. Torchiana and Dr. Akins have explored successfully the newer methodologies of performing coronary bypasses without CPB support, termed Off-Pump Coronary Artery Bypass or OPCAB. While the ultimate benefits of this approach remain to be proven, certain categories of patients, namely, those with renal insufficiency, impaired lung function, and calcified or atheromatous aortas, may benefit from this approach with decreased transfusion requirements, decreased dialysis requirements, less neuro-psychiatric dysfunction, and possibly fewer strokes.

*Gus Vlahakes, one of our most creative surgeons, has been heard to say, impatient with the inertia of a large institution, "We have got to get into the 21st century before it's over!"

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Dr. Torchiana has conducted systematic research on robotic approaches to coronary bypass and has been a proponent of minimally invasive approaches to valve operations, as has Dr. Akins. Drs. Vlahakes and MacGillivray have employed minimally invasive methodology, as well, in the conduct of operations on children to correct congenital defects. Drs. Torchiana, Vlahakes and MacGillivray have collaborated with Drs. William Dec and Mark Semigran of the Heart Failure Unit to bring a coordinated approach to the surgical treatment of heart failure through a combination of procedures, including operations to alter ventricular geometry (therapeutic remodelling), exploring mechanical assist as destination therapy or utilizing assist devices as a "bridge" to transplantation*, under Dr. Madsen's direction. Left ventricular assist devices (LVAD) or bi-ventricular assist devices (BIVAD) have been used by Drs. Vlahakes, Torchiana, and MacGillivray to successfully separate patients from CPB with long term survival, when IABP and maximal pharmacological support failed to do so. Dr. Torchiana's interest in data management and systems analysis has resulted in the introduction of programs to improve the flow of patients along care pathways which he designed in collaboration with other members of the health care team. During Torchiana's tenure, the harvest of saphenous vein for use as conduit in CABG patients has been converted to an endoscopic approach, promoted by Daggett, and executed by Jerene Bitondo, Chief Physician's Assistant, and her team. Over 4,000 patients have been operated at the MGH through this "key-hole" approach, making obsolete the long leg incision formerly used with its attendant morbidity. From these increased efficiencies and improved care, length of hospital stay for most patients after heart surgery has decreased to 5 or 6 days, compared to past eras when 10 to 14 days was the norm. In the past three years, the recruitment of Dr. Arvind Agnihotri and Dr. Jennifer Walker give promise for the future to maintain the energy and creativity of the MGH Cardiac surgical Unit.

As of January 1, 2003, Dr. Torchiana has become Chairman and C.E.O. of the Massachusetts General Physicians Organization (MGPO), with Dr. Warshaw appointing Dr. Gus J. Vlahakes as Acting Chief of Cardiac Surgery. Numerous challenges and opportunities face the talented staff of the Cardiac surgical Unit, including the potential for gene therapy for advanced myocardial disease, robotic approaches to coronary and valve operations, improvements in mechanical assist and off-pump coronary surgery, as well as enhanced minimally invasive approaches to the heart and improved valve reconstruction techniques. The impact of drug eluting stents aimed at reducing the incidence of re-stenosis after catheterization laboratory procedures to treat coronary disease remains to be proven, as do altered demographics and the evolution of community cardiac surgery programs on the overall role of the MGH in the teaching of residents and care of patients with heart disease. Currently, the evolution of technology and biology promise to bring about changes in surgery seemingly at light speed. With its illustrious past firmly established, MGH cardiac surgery is well positioned to lead in the future.

The author wishes to acknowledge with gratitude extensive interviews ("oral histories") granted by and conducted in October and November, 2002 with Dr. W. Gerald Austen, Dr. Mortimer J. Buckley, Dr. John F. Burke, Dr. Hermes C. Grillo, Dr. Robert S. Shaw** and Dr. Edwin O. Wheeler, without which this history would have been less factual and certainly less graphic. It was a pleasure and a privilege for me, personally, to hear their stories,

not all of which are repeatable. As I told Jack Burke, there were times when I felt like a detective interviewing eye witnesses at a crime scene, none of whom saw the event or events in exactly the same way. For any errors of omission or commission, which are entirely mine, I apologize in advance of their detection. The author, in light of recent concerns, confesses shamelessly to borrowing material from: "Wanderjahr, the Education of a Surgeon," by Edward D. Churchill and Edited and Annotated by J. Gordon Scannell,*** M.D., "The Evolution of Cardiac Surgery" by Harris B. Shumacker, Jr., M.D., (which is out of print, but a copy of which was generously given to me by Dr. John Brown, Chief of Cardiac Surgery at Indiana University Medical Center), "Heart Surgery Classics," Edited by Larry Stephenson, M.D., as well as all of the published manuscripts which underly the narrative of this history (space considerations prevent detailed bibliographic references). I wish to thank Drs. Austen, Akins, Buckley, Burke, Grillo, Phillips Hallowell, Torchiana and Vlahakes for their reviews of the manuscript and suggestions which have improved it. I also wish to thank Audrey O'Keefe, Marilyn Swenson, and Stephanie Dailey for their capable secretarial assistance.

*Vlahakes and associates performed the first successful bridge to transplant in the U.S. utilizing the Abiomed BVS 5000 device.

** Dr. Shaw, a genius, surgeon, teacher, investigator died at his home in New Ipswich, New Hampshire on January 21, 2003.

***Dr. Scannell, pioneer in heart and lung surgery, died on August 24, 2002, in Boston at the age of 88.

(Editor's note: Bill (Willard M. Daggett) began his surgical internship at the MGH in July of 1958 after receiving his M.D. from the University of California School of Medicine, San Francisco. He was the West Resident in 1967-68 following which he joined the surgical staff at the MGH and the faculty of the Harvard Medical School. He is now Senior Surgeon at the Massachusetts General Hospital and Professor Surgery Emeritus at the Harvard Medical School. Bill has had a distinguished career in both clinical cardiac surgery and cardiac surgical research. He was one of the original members of the cardiac surgical team and has made a major contribution in the teaching of surgical residents and the development of cardiac surgery.) ♦

(PLASTIC SURG continued from page 5)

Valley Forge General Hospital, the Army's east coast major Plastic Center. Many opportunities to apply that experience in civilian practice developed. For example, by attending Fracture Rounds weekly, it became apparent that the importance of the skin closure held secondary place to the accuracy of the fracture reduction. By applying plastic techniques to compound extremity wounds in conjunction with fracture reduction, solid healing with good blood supply for the healing process was assured. Delayed primary closure as well as local and remote flaps were chosen in both early and late compound injuries with singular success. The "fracture group" was soon convinced.

The principle involved here is that deep healing of both bone and soft tissue can be no better than the skin cover with its adequate blood supply.

The plastic clinic for crippled children was reactivated only to be transferred to the New England Medical Center a few years later where it was managed by Michael Lewis, a member of our team at the MGH. Later our residents were afforded opportunities in Lewis' program.

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In the early 1950s Dr. Joseph Murray, who had been with us in the Army and had just fulfilled the Board requirements, joined me in my Back Bay office. We both had dreams of a joint Brigham/MGH Plastic Program. Dr. Murray was active at the Brigham/Children's earning recognition for plastic surgery and continuing his laboratory and clinical studies on tissue transplantation for which he was awarded the Nobel Prize in 1990. We remained together until I moved to the Warren Building and he to the Brigham Hospital office.

There were frequent calls from physicians and surgeons in suburban hospitals for help in dealing with acute injuries, burns, facial lacerations and fractures, and compound extremity fractures. The consultations involved travel but it was essential that they we responded to them.

Not until July 1960 was there recognition of the special features of plastic surgery. At that time John D. Constable, a skilled and imaginative surgeon, who had served as the general surgical resident (1959), was appointed as my associate, and two surgical residents were assigned to the Plastic Clinic to work on the wards and with private patients for a two-month period. During the next 15 years, 23 of these surgical residents chose to specialize in plastic surgery but had to go elsewhere to obtain formal training before being certified by the American Board of Plastic Surgery. Others continuing in general surgery or other surgical specialties have reported that the exposure to plastic surgical principles and methods has proven useful in their later practice.

Obviously the only way to avoid this loss of talent was to establish a residency at the MGH. This program was finally realized in 1970 and the first resident in plastic surgery served from July 1971 to June 1972.

In 1973 I reached the retirement age, and I was succeeded by John Remensnyder who carried on most admirably directing the plastic service and acting as an able leader in his selection of outstanding residents for the program.

Remensnyder's tenure continued until 1982 when James May, one of our early residents, succeeded him. May has proved a most capable "chief" with his sound general thinking. His contributions in hand surgery, microsurgery and replantation of amputated parts have been recognized as outstanding.

On looking through the list of over 28 past MGH plastic residents in the first two decades of the program, one cannot fail to be impressed with the positions each has assumed in his or her respective communities. Some have stayed in the New England communities where Boston consultants are no longer called. Others have moved far away reporting their successes by correspondence or at annual meetings. All, we can report proudly, have demonstrated the quality of their training as the evidence of the respect in which they are held.

In the late 80s and early 90s informal temporary exchanges were arranged between the MGH and the Brigham/Children's plastic programs to fill in gaps that may exist in either program. These exchanges led to discussions of a joint permanent program with both institutions, a program that was established in 1994 and has continued most successfully ever since. Rounds have been scheduled mid-week at the Shriner's Auditorium for discussion of various subjects and presentation of cases. Two lectureships honor two of our distinguished predecessors: Dr. George Monks at the Brigham and Dr. V.H. Kazanjian at the MGH.

The program that Dr. Murray and I envisioned years before has become a reality, and today the Brigham/Children's/MGH training program is considered one of the best.

Currently the active staff at the MGH consists of the following:

| | |
|---------------------------|-----------------------|
| "Chief, James W. May Jr.* | W. Gerald Austen Jr.* |
| John Constable* | Mathias Donelan* |
| Gregory Gallico* | Michael Lewis |
| Jonathan Winograd* | Michael Yaremchuk |

*Alumni of the MGH Program

CONCLUSION

Plastic surgery has no anatomical area to which it can lay claim. To have played a part in the acceptance at the MGH of this bizarre specialty has been most gratifying. It is a specialty of principles and techniques evolved and perfected by plastic surgeons and then returned to the mainstream of surgery. Examples include the use of the skin flaps and skin grafts to close open wounds assuring protection and adequate blood supply to the healing structures beneath, the accurate and refined closure of acute lacerations to minimize conspicuous scars and stitch marks, and ubiquitous use of free skin grafts for the prompt closure of wound with skin loss.

To both lay and professional persons the term "plastic surgery" implies "interfering with nature". Yet, such surgery in proper hands can give great satisfaction. For example: lop ears, sagging face, large prominent nose, or massive breast development. This is why I prefer to combine "Plastic and Reconstructive" as a title in publications and programs.

(Editor's note: Bradford Cannon graduated from HMS in 1933. His father was the famous physiology professor there. Because he had always been in the Boston area Brad took his surgical training at Barnes Hospital in St. Louis. There he served under James Barrett Brown and Vilray Blair, two outstanding plastic surgeons who were largely responsible for his decision to become a plastic surgeon.

Brad returned to Boston in 1940. He assisted V.H. Kazanjian in the Plastic Clinic and then became the Chief in 1941. Because of his experience with plastic techniques he played a critical role in the care of the patients in the Coconut Grove Fire in 1942.

He was drafted in the Army in 1943 and served four years at Valley Forge General Hospital, the major east coast Army center for plastic and reconstructive surgery. Brad was the chief of the plastic services there for his last two years and received the Legion of Merit decoration for his military service.

When Brad returned to the MGH from the Army there was no plastic service. He built up a plastic and reconstructive practice. Joe Murray joined him in the 50s and a plastic fellowship was begun at the MGH in 1960. This evolved into an approved residency in 1970, and Brad was made chief of the plastic unit then. He reached retirement age in 1973 Brad is very proud of the residency which became a joint program with the Brigham and Children's in 1994.

Two of his many awards are the presidency of the American Association of Plastic Surgeons and a founding member of the American Society for Surgery of the Hand. One of his personal favorites is his 60 year MGH pin which he received in 2000. We believe he's good for another 60.) ♦



**The Massachusetts General Hospital
Surgical Society**

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