

# Champ Lyons, Holt McDowell, and the Evolution of Vascular Surgery at the University of Alabama at Birmingham: A Personal Perspective

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The history of medical centers, hospitals, clinics, and their evolution are important contributions and resources to medical history. Likewise, evolution of specialties within these healthcare centers frequently parallels their growth and development. This contribution depicts the evolution of a specialty, vascular surgery, within a major medical center, the University of Alabama at Birmingham. It recounts the major participants involved and their contributions and pioneering efforts, some of which have received little attention or were overshadowed by other events. Perspectives from participants—a patient and a trainee—provide insight into this process that has supported the growth and development of a major world-class medical center.

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THE DEPARTMENT OF Surgery at the University of Alabama at Birmingham has a rich and storied history. Integral to this history is the evolution of vascular surgery within the department. Its lineage can be traced from the first full-time faculty member of the Medical College of Alabama in Birmingham, Champ Lyons, continuously through Holt McDowell to its current status as an autonomous section within the Department of Surgery. This contribution recounts this evolutionary process from the perspective of a patient receiving a new vascular surgical procedure from Champ Lyons and of a trainee receiving the wisdom and experience of Holt McDowell. It is a window on the important history of the department that hopefully will be chronicled in the future.

## Champ Lyons

The works of definitive biographer Martin Dalton, M.D., are an invaluable source of information on the life of this surgical giant.<sup>1, 2</sup> Benjamin Champneys Atlee was born on May 21, 1907, in Lancaster, PA. His parents divorced when he was 3 and his mother later married Joseph Henry Lyons of Mobile. They moved to Mobile and his name was legally changed to Champ Lyons. His uncle by marriage was Luther L. Hill, M.D., the first American to repair a wound of the heart successfully in Montgomery, AL.<sup>3</sup> Lyons graduated from Barton Academy in Mobile in 1923 and attended

the University of Alabama in Tuscaloosa where his friends included the football star and (later) actor Johnny Mack Brown for whom he served as an academic tutor (Hon. Champ Lyons, Jr., personal communication, November 23, 2009).<sup>1</sup> After graduation he attended Harvard Medical School, graduating in 1931. He received his surgical training under the renowned Edward Churchill, M.D., at the Massachusetts General Hospital (MGH). During this time, in 1934, he married Naomi Currier of Oxbow, ME, a nurse at MGH.<sup>2</sup> He had developed an interest in microbiology and infection in medical school and pursued these interests throughout his surgical training and research years. He remained on the faculty at MGH and continued to generate new information regarding surgical infection and antibiotics.<sup>4</sup> The American Board of Surgery (ABS) was founded in 1937 to improve the specialty of surgery and protect the public.<sup>5</sup> Lyons was certified by the ABS (Certificate No. 109) in 1939 under the auspices of the original ABS directors. He was instrumental in the care of patients from the infamous Coconut Grove Nightclub fire in 1942, using penicillin in a mass casualty setting.<sup>6</sup> With the outbreak of World War II, he initially served in a consulting capacity, demonstrating the effectiveness of penicillin on wounds in soldiers from the Pacific and European theaters.<sup>7</sup> He then served with Dr. Churchill in the Mediterranean Theater of Operations and was decorated, receiving the Legion of Merit. A close military associate was Michael E. DeBakey.

After his discharge, he returned to Mobile to recover from a bout of hepatitis. DeBakey arranged a meeting with Dr. Alton Ochsner and Lyons was invited to join the Ochsner Clinic in 1945. His Ochsner years were

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productive and prosperous and have been previously chronicled.<sup>4</sup> His tenure there served as the final step to the pinnacle of his surgical career. As his professional activities and honors began to accumulate, he became a member of the Southern Surgical Association in 1945, a Fellow of the Southeastern Surgical Congress in 1946, and a Fellow of the American College of Surgeons in 1950.

In October 1950, Roy R. Kracke, Dean of the Medical College of Alabama, invited Lyons to consider becoming the first full-time Professor and Chairman of the Department of Surgery at the Medical College Alabama in Birmingham.<sup>2</sup> He would be the first full-time faculty member since the medical school moved from Tuscaloosa in 1945.<sup>2</sup> He accepted the offer, left New Orleans, and started in Birmingham in January 1950. The first Chairman of the Department of Surgery, James Monroe Mason, was a noted surgeon in his own regard.<sup>3</sup> He had served with Lyons in the Mediterranean Theater of Operations and welcomed him warmly.<sup>2</sup>

With Lyons in place, Dean Kracke, a native of Hartselle, AL, then set about finding a Chair of Internal Medicine. He secured Tinsley R. Harrison, a native of Talladega, AL, as the second full-time faculty member of the Medical College of Alabama in Birmingham. Harrison was an experienced academician, having served on the faculties of Vanderbilt, Bowman Gray (Wake Forest), and Southwestern Medical School (University of Texas Southwestern Medical Center). He arrived in June 1950. Unfortunately, Dean Kracke died of a heart attack that same month at age 52 but had brought to Birmingham two giants of American medicine who would remain for the duration of their careers.

Lyons had built a solid foundation for himself in academic surgery and now began to build the Department of Surgery. Not unexpectedly, he received further accolades on his appointment. One endorsement came from Alfred Blalock in a letter to Tinsley Harrison dated July 28, 1950, when he stated "Champ Lyons is a grand fellow and I would think that you and he would work very nicely together."<sup>8</sup> Lyons laid the foundation of the department based on exemplary patient care, teaching, and academic productivity. He and Harrison became allies and good friends.

In July 1952, he began to put together his full-time faculty and W. Sterling Edwards, a Birmingham native who trained at MGH, joined the faculty<sup>2</sup> (Fig. 1). Edwards had a keen interest in the newly developing fields of vascular and cardiac surgery. As was common for that time, Edwards visited several centers to obtain information and learn new techniques that were brought back to the animal laboratory for cardiovascular research. These visits included the sites of John Kirklin (Mayo Clinic), Albert Starr (University of Oregon Medical



FIG. 1. Sterling Edwards during his Alabama years. (Courtesy of UAB Archives, University of Alabama at Birmingham, reproduced with permission.)

School), and Michael DeBakey (Baylor College of Medicine). In 1954 he performed the first open heart surgery at the Medical College of Alabama<sup>2</sup> and developed the first nylon arterial prosthesis and implanted it in a human.<sup>9</sup>

The story of DeBakey constructing the first Dacron vascular graft on his wife's sewing machine is well known in the vascular surgery world.<sup>10</sup> Less well known is the story of the first nylon vascular graft. Although nylon would later prove unacceptable as an arterial substitute as a result of loss of tensile strength and aneurysm formation, the story of its development is an important historical footnote. In 1952 the Chemstrand Corp., a jointly owned subsidiary of Monsanto Chemical Co. and American Viscose Corp., located its administrative headquarters, a large research development center, and Acrilan production facilities in Decatur, AL.<sup>11</sup> Edwards, after hearing the report of Voorhees<sup>12</sup> at the American Surgical Association in April 1954, obtained the cooperation of the synthetic textile company Chemstrand and worked with James S. Tapp, Ph.D., to develop a prefabricated graft.<sup>13</sup> Nylon was chosen because of its track record in automobile and airplane tires and more was known regarding how to chemically modify it. This led to Patent No. 2,836,181 for "Flexible nylon tube and method for preparing same" filed on January 17, 1955, and received on May 28, 1955, to James S. Tapp, Decatur, AL, assignor to the Chemstrand Corp.<sup>14</sup> It was first used on October 13, 1954, during the repair of a chronic arteriovenous fistula. The arterial clamp on a sclerotic plaque produced "irreversible damage to the common femoral bifurcation, and leaving a 5 cm gap in the artery." The new graft was interposed in the defect and the patient did well.<sup>9</sup> One of the first modifications after this initial experience was the addition of a silicone coating for hemostasis.<sup>15</sup> This is remarkable because it was nearly 40 years before the universal application of hemostatic coatings to prosthetic grafts in the 1990s.

Modern vascular surgery evolved from general surgery and later, some considered it a component of cardiovascular (or cardiothoracic) surgery. The American

Board of Thoracic Surgery (ABTS) traces its organization to 1948 with purposes being certification, life-long learning, practice improvement, and protection of the public.<sup>17</sup> Lyons received certification from the ABTS (Certificate No. 375) in 1956.

On April 19, 1957, the Alabama Medical Association met in Mobile and was attended by approximately 500 physicians. Lyons and Garber Galbraith, M.D., Professor of Neurosurgery, presented a new surgical therapy for carotid artery occlusive disease. The experience and results with six cases were reported.<sup>17</sup> An Edwards-Tapp nylon graft was used to construct a bypass from the subclavian artery to the internal carotid artery beyond its obstruction. As described by Dalton from his eyewitness account, the operation was "excellent,"<sup>2</sup> consisting of two small incisions with both anastomoses being constructed using oiled silk and heat-sealing the graft ends with electrocautery. This information was again presented to the American Surgical Association on May 8 to 10, 1957, where it was well received.<sup>18</sup> Carotid arteriography and its importance were discussed by Galbraith and DeBakey participated in the discussion, commending Lyons for recognizing "this important form of occlusive disease, and the methods by which it can be corrected." DeBakey then presented a case of carotid endarterectomy (operated on by Denton Cooley, M.D.) and a case of innominate artery occlusion that was successfully bypassed.

Joseph Pierce Trotter was a 56-year-old civil engineer referred by his physician in Mobile to Dr. Samuel Little of Birmingham for further evaluation and treatment of a 2- to 3-year history of transient diplopia and a 2-week history of transient left eye blindness associated with right arm and hand numbness. The clinical etiology was felt to be the result of occlusive disease of the left internal carotid artery (S.C. Little, letter to Dr. William Tucker, April 23, 1957). The treatment options were outlined as either medical, consisting of anticoagulation with dicumarol indefinitely, or surgical, consisting of an experimental operation to bypass the occlusion. As explained by Dr. Little, remaining in Mobile would be agreeable for medical therapy but for surgical therapy, the recommendation was to travel to Birmingham where the operation was developed. The patient and his wife opted for surgery and he was referred to Lyons. It is unknown if the two knew each other personally before their doctor-patient relationship. J. P. Trotter had graduated from Barton Academy in Mobile a few years ahead of Champ Lyons and it is very likely that they had common acquaintances in Mobile. This degree of familiarity and reassurance may well have impacted the decision to proceed with surgery.

He was admitted to University Hospital on May 4, 1957. He had been started on Hydergine and dicumarol

1 week earlier. Pertinent medical history included a history of cigarette smoking and peptic ulcer disease that was treated symptomatically. On examination he was noted to have a dilated and poorly reactive left pupil, decreased left carotid and superficial temporal artery pulses, and a loud systolic left carotid bruit. Lyons summarized the situation as "claudication of the left middle cerebral artery with increasingly frequent attacks." The plan was for arteriography and immediate operation if indicated. Garber Galbraith was consulted and noted "classical symptoms of left carotid insufficiency." On May 5, 1957, Galbraith performed carotid arteriography under general anesthesia revealing "severe partial occlusion of the left internal carotid artery at its origin with post stenotic dilatation." The luminal diameter appeared "no greater than a few mm." An immediate carotid-subclavian shunt was performed using an Edwards-Tapp nylon graft<sup>19</sup> and the internal carotid artery clamp time was 25 minutes. The patient received 1500 mL of whole blood intraoperatively and a Levine tube and Foley catheter were used. Perioperative antibiotics consisted of penicillin and streptomycin. He was extubated in the operating room. (Coincidentally, the resident on the case and during the hospitalization was Dr. Robert W. Trotter—no relation. He would finish his training under Lyons in 1959 and have a long and successful career in Athens, TN. He died in November 2008 [Mr. Bob Trotter, personal communication, August 12, 2009]) On the evening of surgery, the dressing and drain were removed and the patient was noted by Lyons to be doing well with no neurologic deficits and a palpable graft pulse.

As noted, Lyons attended the American Surgical Association Meeting in Chicago on May 8 to 10, 1957, where he presented this method of treatment of extracranial cerebrovascular disease in six cases. J. P. Trotter was Lyons' seventh patient.<sup>20</sup>

The patient did generally well postoperatively. The left and right pupils were noted to be equal and reactive to light and Lyons noted the arm blood pressures to be equal. The cholesterol returned as 305 and there was no recurrence of neurologic symptoms. Estinyl estradiol was started for arterial healing. Tinsley Harrison was consulted for hypercholesterolemia and a low-fat diet was described and recommended to prevent blood vessel disease (T.R. Harrison, letter to Mr. J.P. Trotter, May 16, 1957). Lyons noted continued symptomatic improvement as evidenced by the ability to read without visual difficulty, no recurrent seizures, and improved power of concentration. The patient experienced one episode of transient right arm and hand numbness that was attributed to position. He otherwise did well and was discharged after a 12-day hospital stay.

J. P. Trotter returned to Mobile and returned to work. As a civil engineer he had been involved in bridge design and construction since graduating from Alabama Polytechnic Institute (Auburn) in 1920. He was President of Trotter–Ernest Engineering, an affiliate of Ernest Construction Company Partnership in Mobile. Before entering the private sector in Mobile, he had a successful career with the Alabama Highway Department (now the Alabama Department of Transportation) in Montgomery for several years in bridge design and engineering. He had been active in local and national professional societies. When the governor of Alabama decided a bridge was needed on Highway 182 in Orange Beach, AL, over Perdido Pass between Alabama Point and Florida Point, a joint project with Florida was contemplated because the state line bisected Perdido Pass. However, the states agreed to move the state line slightly east to its present location. The State of Alabama then contracted Trotter–Ernest Engineering to design the bridge and do the preliminary engineering on the proposed highway (Mr. Walter Ernest, personal communication, July 6, 2009, July 31, 2009, September 8, 2009). J. P. Trotter designed the bridge and began the project before his operation and completed it afterward (Fig. 2). Before completion of the bridge construction in 1960, J. P. Trotter sustained a stroke impacting the left brain. He was treated in Mobile and survived with right hemiplegia and near aphasia. His medical records at the Mobile Infirmary were destroyed after 22 years and

therefore no details of his diagnosis and treatment are available. He would live another 20 years but remained completely disabled. On Sunday afternoon visits to his home on Dog River, two small nephews would always ask how their Uncle J. P. was doing. The garbled answer would always be the same: “Barely alive, boy, barely alive.” The original bridge remained for nearly 30 years. The cumulative effects of nature and the increasing size of boats necessitated upgrading and replacement to the present structure, which is passed over by multitudes of vacationers and passed under by multitudes of fishermen annually.

It is interesting to speculate on Lyons’ position regarding artificial vascular grafts. Long-time friend and colleague DeBakey was having success with Dacron grafts of his own construction and colleague and co-worker Edwards was instrumental in the same arena with nylon grafts at home in Alabama. Perhaps he kept an open mind awaiting further data, but he put an Edwards–Tapp graft in J. P. Trotter. Surgical intervention for symptomatic carotid artery disease in this bridge engineer likely allowed his continued involvement in the design and development of this well-known Alabama coastal landmark.

Lyons’ interest in vascular surgery continued in 1957 as he and his colleagues reported experiences with dissecting aortic aneurysms<sup>21</sup> and inferior vena caval thrombosis.<sup>22</sup> Both of these entities remain problematic today with newer endovascular approaches offering

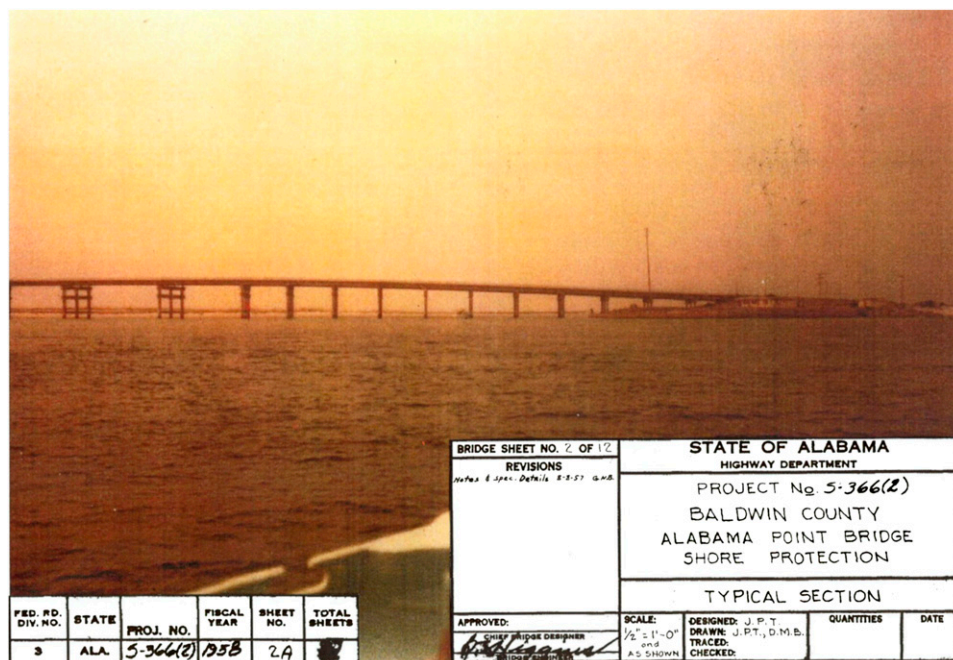


FIG. 2. Original Alabama Point Bridge at Perdido Pass, Orange Beach, AL. (Courtesy of the Orange Beach Indian & Sea Museum, Orange Beach, AL, reproduced with permission). Inset is identification plate, original design, Alabama Point Bridge. (Courtesy of the Alabama Department of Transportation Archives, reproduced with permission.)

promising solutions. The fact that he and his colleagues had success in 1957 reminds us of his skill in approaching these problems in a systematic and thoughtful fashion.

In 1958 he continued his close military relationships as a civilian consultant to the Surgeon General of the Department of the Army. Leland C. Clark, Jr., Ph.D., had joined the faculty to assist in the growth and development of the heart surgery program. As this moved forward, vascular surgery grew in parallel. Papers were published regarding peripheral bypass for trauma and occlusive disease,<sup>23</sup> great vessel injuries,<sup>24</sup> and aortoiliac occlusive disease.<sup>25</sup> In the latter, they advised conservative treatment for mild claudication and provide experience and a thoroughly detailed discussion of the ramifications and pitfalls of major open aortoiliac reconstruction still germane today. Their statement "Until medical or dietary measures can control the progression of arteriosclerosis, then this must be considered palliative surgery" remains accurate. In 1959 Lyons was appointed by President Dwight D. Eisenhower to the Board of Regents of the National Library of Medicine. The Alabama Heart Association honored him for his national recognition and the development of crimped arterial prostheses, surgical treatment of extracranial cerebrovascular disease, design and construction of heart surgery operating rooms, and development of intravascular electrodes with Leland Clark for intracardiac shunts.<sup>2</sup> The Luther Leonidas Hill Heart Surgery Center was opened and was the culmination, in part, on the efforts of Lyons and his cousin Senator Lister Hill (L. L. Hill's son) working together to secure funding.<sup>2</sup> Similar to his friend DeBakey using his military influence to secure land for the original Ochsner Clinic Foundation Hospital,<sup>26</sup> Lyons used his considerable influence with his cousin to secure funding for the medical center. His contributions regarding vascular surgery continued with publications on portal hypertension.<sup>27</sup>

In 1960 he became a member of the Society for Vascular Surgery and in 1961 he and colleagues produced publications on arteriography<sup>28</sup> and dissecting thoracic aneurysms.<sup>29</sup> During 1961 and 1962 Lyons continued to elevate the profile of the Department of Surgery. The interest in heart surgery grew and he and his colleagues published extensively on a variety of surgical topics. He continued to have a national presence in various consulting capacities with the military. He was invited as Visiting Professor or Guest Speaker at several departments of surgery. In 1962 he became a member of the North American Chapter of the International Society for Cardiovascular Surgery (later the American Association for Vascular Surgery before merging with the Society for Vascular Surgery).

In 1963 Holt A. McDowell was Chief Resident under Lyons (Fig. 3). Civil rights turmoil was at its peak



FIG. 3. Champ Lyons (left) and Holt McDowell (right). (Courtesy of UAB Archives, University of Alabama at Birmingham, reproduced with permission.)

in Alabama with the 16th Street Baptist Church bombing on September 15 in which four little girls were killed. Lyons and McDowell viewed the carnage in person with Lyons noting that it was worse than anything he had seen in World War II.<sup>1</sup> Also that year Lyons was responsible for the desegregation of the emergency rooms at University Hospital. At the end of 1963, as he had at Ochsner,<sup>30</sup> Lyons became noted for a "miracle" trauma case. A 50-year-old army veteran received a gunshot wound to the chest in a hunting accident. He survived the injury with a shotgun slug in his left ventricle. On January 3, 1964, Lyons operated and removed the missile on cardiopulmonary bypass. The patient did well.<sup>1</sup>

By 1964 carotid endarterectomy had replaced carotid-subclavian bypass as surgical therapy for extracranial cerebrovascular disease. Lyons and McDowell collaborated on one of their first papers together regarding enhanced safety of carotid artery surgery.<sup>31</sup> Lyons was named Distinguished Professor of the University of Alabama, Distinguished Faculty Lecturer of the University of Alabama Medical Center, and the first Charles and Fay Kerner Chair of Surgery (now the Fay Fletcher Kerner Chair of Surgery, held by Kirby I. Bland, M.D.) (Fig. 4).



FIG. 4. Champ Lyons. (Courtesy of UAB Archives, University of Alabama at Birmingham, reproduced with permission.)

In 1965 Lyons and McDowell continued to collaborate on important publications regarding vascular surgery. They described guillotine amputation through the knee in critically ill patients with lower extremity gangrene from vascular disease, noting a decrease in morbidity and mortality.<sup>32</sup> They also published again on the surgical approach to extracranial cerebrovascular disease.<sup>33</sup> Lyons delivered the Distinguished Faculty Lecture on April 27, 1965, and it was subsequently published as a comprehensive paper on the surgical aspects of stroke.<sup>34</sup> These latter publications detailed the surgical management of extracranial cerebrovascular disease for stroke prevention and would serve as a template for the evolution of this practice at the University of Alabama at Birmingham (UAB) for at least the next 25 years. The pioneering efforts at preventing the devastating impact of stroke are a noteworthy milestone in the evolution of vascular surgery at UAB.

Clearly the vascular surgery baton at the UAB had been passed. Of approximately 90 publications during his time in Birmingham, nearly half are associated with cardiac and vascular surgery. This “complete academician” had reached the pinnacle of a brilliant academic surgical career. His hard work, dedication to patients and teaching, academic and clinical productivity, and attention to detail had rewarded him.

In July 1965 Lyons was noted to have left facial weakness by his residents, of which he was unaware. A brain scan confirmed a left cerebral lesion. In August 1965 a craniotomy confirmed a Grade IV non-resectable astrocytoma.<sup>2</sup> He died on October 24, 1965, at age 58 years.

The legacies of Champ Lyons are many. Two of the most widely recognized are initiating and developing the use of penicillin in World War II and for pioneering work in the surgical treatment of extracranial cerebrovascular disease. His contributions to medical education in Alabama were chronicled by Tinsley Harrison.<sup>35</sup> His name is carried on today at UAB. There are physical structures (Lyons-Harrison Research Building, the Lyons Room of the Lister Hill Library of the Health Sciences, and previously, the Champ Lyons

House Staff Memorial Library at University Hospital), a named lectureship (Champ Lyons Lecture at the University of Alabama School of Medicine Department of Surgery), and an endowed chair (Dr. Champ Lyons Endowed Chair in General Surgery, now held by Marshall M. Urist, M.D.).

Garber Galbraith was interim chairman until September 1, 1966, when the search for Lyons’ replacement culminated in the beginning of the John W. Kirklin era. Under Dr. Kirklin’s leadership, the department would continue to build on its solid foundation and grow. His contributions are legend and when his biography is written, it will be a significant addition to the annals of medical history. Edwards remained at the medical center until 1969 when he moved to the University of New Mexico in Albuquerque, built a cardiovascular surgery program, and became its third Chairman of the Department of Surgery in 1974. He remained in that position until he retired in 1987.<sup>36</sup> He had served the specialty of vascular surgery well as President, Society for Vascular Surgery in 1970<sup>37</sup>; President, North American Chapter of the International Society for Cardiovascular Surgery in 1978<sup>38</sup>; and President, Western Vascular Society in 1987.<sup>39</sup> In 1997 the W. Sterling Edwards Endowed Professorship of Surgery was established at the University of New Mexico School of Medicine. He died on June 28, 2004, at age 84 years.<sup>36</sup> The Multimodality Imaging Laboratory of the UAB Comprehensive Cancer Center was named in his memory in August 2004 (plaque inscription, Multimodality Imaging Laboratory of the UAB Comprehensive Cancer Center, University of Alabama at Birmingham, Birmingham, AL).

### Holt McDowell

Holt A. McDowell, Jr., was born in Ensley, AL, in 1930. His father, Holt A. McDowell, Sr., was the 40th sheriff of Jefferson County, AL, and was elected to five terms in office. He served 22 years and was one of the longest termed sheriffs in Jefferson County.<sup>40</sup> McDowell graduated from the University of Alabama in Tuscaloosa in 1952 and the Medical College of Alabama in 1956. He completed his internship at University Hospital in Birmingham in 1957 and then served 2 years in the army as a captain. After this, he completed his surgical residency under Lyons in 1963. He was invited by Lyons to join the Department of Surgery as Instructor in Surgery. He would remain there for his entire 36-year career, becoming Assistant Professor in 1965, Associate Professor in 1975, and Professor of Surgery in 1980. Additionally, he was Consultant Surgeon at the Birmingham Veterans Administration Hospital (BVAH). The only state medical license he would ever hold was Alabama. Lyons had a profound



influence on McDowell personally and professionally, which generated a lifetime loyalty. This included “above and beyond” kindness when Sheriff McDowell died.<sup>2</sup>

His interest in vascular surgery began with Lyons and would continue to flourish. His practice evolved as the standard of care for vascular surgery at UAB and for the training of vascular surgery to the general surgery residents. Vascular surgery remained an integral component of general surgery and McDowell participated in the general surgery call rotation. Although his interests were largely clinical and teaching, he was involved in the production of nearly 50 publications, most of which dealt with various aspects of the surgical treatment of extracranial cerebrovascular disease. He continued the successful collaboration with the Department of Neurosurgery in this regard, including sharing their information with physicians throughout the state.<sup>41</sup> With the Kirklin administration, much was reportedly patterned after the Mayo Clinic, including naming surgical services after colors. The dedicated vascular surgical service (“McDowell’s service”) was aptly named “Red Surgery.” The vascular experience during the general surgery residency was dominated by McDowell. Early in his tenure, Kirklin participated in vascular surgery before focusing exclusively on cardiac surgery. Arnold G. Diethelm, M.D., Chairman of the Department of Surgery, 1982 to 1999, shared staffing of Red Surgery with McDowell and participated in vascular surgery, but his primary interest was renal transplantation. Rotations at outside local hospitals, including Cooper Green Hospital and Lloyd Noland Hospital, also provided some vascular surgery experience. However, the heart and soul of vascular surgery was McDowell on Red Surgery followed by the companion rotation (Purple Surgery) at the BVAH. The Chief Resident would take the lessons learned on Red and apply them on Purple. McDowell’s surgical career evolved when there was less fragmentation and specialization impacting general surgery. His practice encompassed the entire spectrum of vascular surgery before infrainguinal vascular reconstruction for limb salvage and endovascular therapy. Most important was how he taught and the relationships he had with those who learned under him. At a time when surgical training such as that at UAB could be autocratic, McDowell transcended what could be called a harsh reality of daily resident life with humanism and professionalism just beneath a sometimes gruff exterior. A rewarding experience during training was the time spent as Chief Resident on Red Surgery, primarily working with McDowell as mentor. Receiving his wisdom and advice was a rite of passage and he seemed to be universally endeared by all who passed under his visage and tutelage.

I first became acquainted with McDowell in the fall of 1980 as a senior medical student. His practice style, knowledge, and the affinity of the residents for him were impressive. He was called “Captain Midnight” and would always be referred to as “The Cap’n”. The story goes that he got this nickname because of his tendency to make rounds late at night. He started his surgery schedule at 8:00 AM and that lag time from the hustle and bustle of 7:30 AM allowed him time to work crossword puzzles in the newspaper on a daily basis. His surgery schedule placed aortic cases, carotid endarterectomies, and femoral-popliteal bypasses first with amputations and general surgery cases to follow. In his patient population, he tended to save saphenous veins for future coronary bypasses. He could be colorful in the operating room, especially during difficult cases. Sometimes he would take a break while the Chief Resident “dried things up.” He would return shortly after the “smoke break” with a calm disposition. To see him deal with a ruptured abdominal aortic aneurysm was quite an experience. He attacked this deadly malady with a vengeance on behalf of the patient and there was no doubt who was the captain of that ship headed into battle. More often than not it seemed he won. Despite sometimes seeming otherwise, he was quite approachable. He had a spark in his personality, a great sense of humor, and his patients loved him. I recall the wife of one patient with bilateral femoral anastomotic aneurysms from an aortobifemoral bypass done years before. They were indicative of his practice and had a firm doctor-patient relationship. Her voice was a shrill southern Appalachian whine saying, “Dok-ter Mac-dooow-wool” as he walked into their room. When he made rounds he would walk in the door, turn around, and keep walking while talking the whole time. I told him I admired his rounding technique and he smiled and said, “I’ve talked to my million—now it’s your turn.”

The benefit of his experience was priceless. His method of carotid endarterectomy (selective shunting with electroencephalographic monitoring and selective patching) has served many of us well over the years. The nuances of prosthetic grafts were taught in a straightforward fashion (“Use woven for ruptured AAA because you don’t have to preclot; use knitted for elective cases because it is easier to work with.”). Watching him, flushing and declamping sequences were logical. At morbidity and mortality conferences McDowell actively participated, explaining the rationale for clinical decisions despite what may have been an untoward outcome. His clinical judgment was superb. Once he was asked how he knew what to do in a certain clinical situation when he did not know what exactly was wrong with the patient. His explanation was to the point: “I didn’t know what was wrong with

her but she had that look on her face that said ‘I’m going to die if you don’t do something.’” It was a lesson of a lifetime and particularly poignant, especially when considered in the context of issues such as medical errors and patient safety today.<sup>42</sup> Working under him you learned confidence—confidence in your decision-making ability—from his years of experience. He often stated that surgeons were the conscience of the hospital. When everything has been done and failed, typically late at night, and no one else knows what to do, the surgeon is the resource of last resort. His perspective on the issue of malpractice was timeless for his residents: “If there’s one thing I understand, it’s money.”

His opinion was well respected and sought after. This demonstrated the respect his peers held for him. His referral pattern was statewide and he seemed to know everybody in Birmingham. He was certified by the ABS and in 1982, the ABS established a vascular surgery certificate. Given the paucity of vascular surgery fellowships, a period of “grandfathering” was allowed for practicing vascular surgeons until 1989.<sup>43</sup> McDowell was in this latter group and he told me he had never studied as hard for anything in his life as he did for the vascular certification examination. Jokingly, he said he read a lot but could not remember much of it. He scored remarkably high (Mrs. Maureen McDowell, personal communication, August 14, 2009) and it confirmed what I had always suspected—that he knew everything there was to know about vascular surgery. When it came to new technology, he was open-minded but told me he “liked to put my money on the dogs I’ve seen run.” As such, he established the non-invasive vascular laboratory at UAB and oversaw it until his retirement. Listening to his stories was a rare treat, whether it was his years with Champ Lyons, being in Michael’s restaurant when Bear Bryant was there late on a postgame Saturday night, or the treatment of enemies by the Turkish army during his military service. When I finished my residency on the Purple Service at the BVAH, he said “I think you’ve operated on everything over there.” It was a real compliment. Listing a substantial number of major vascular cases as Surgeon–Chief or Surgeon–Junior was not uncommon on board applications. Clearly, at UAB, vascular surgery had an impact. Those who entered the practice of general surgery and those who pursued cardiothoracic surgery fellowships frequently incorporated vascular surgery into their practices as a result of their UAB training.

McDowell retired in 1999 and overcame multiple health issues, including a lengthy hospitalization for a severe pulmonary illness. He then continued to enjoy retirement with family and friends, remaining active with his familiar spark and sense of humor. He died on July 4, 2005, at age 74 years.



FIG. 5. Holt McDowell. (Courtesy of UAB Archives, University of Alabama at Birmingham, reproduced with permission.)

His legacy of excellence remains through his dedication to teaching and exemplary patient care. His practical approach to problem-solving has perpetuated itself through generations of UAB-trained surgeons. McDowell loved vascular surgery and Alabama. The esteem in which he is held by trainees and patients was exemplified when the University of Alabama established the Holt A. McDowell, Jr., Endowed Chair of Vascular Surgery (now held by William D. Jordan, M.D.) (Fig. 5). The compliment befits the man.

### Epilogue

Under Champ Lyons, the academician, the Department of Surgery developed an identity. Under Holt McDowell, the revered teacher, vascular surgery evolved its own identity while remaining a component of general surgery. Vascular surgery today is its own specialty and is now its own section within the Department of Surgery at UAB. I think Champ and Holt would be proud.

### Acknowledgments

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