Charles George Drake, M.D. 1920–1998

An obituary

NEAL F. KASSELL, M.D.

Department of Neurosurgery, University of Virginia Health Sciences Center, Charlottesville, Virginia

On Wednesday, September 15, 1998, at 12:10 P.M., Charlie Drake died abruptly from a pulmonary embolus complicating an adenocarcinoma of the lung with brain metastasis.

The final chapter of Charlie’s life began in December, 1997 when a chest x-ray, which was performed to evaluate a persistent cough, showed a lung mass. Despite the lack of a diagnosis, Charlie had a premonition of the ominous significance of this lesion upon seeing the film and stated, “This is the beginning of the end.”

Charlie lived the last chapter of his life as he lived the prior 78 years—privately, courageously, and stoically. Through 6 months of progressive physical disability leading to near incapacitation, he never once complained, although from time to time, one could sense his profound disappointment at the inevitability of a premature end.

Charlie’s predicament was proof positive of the adage, “Only the good die young.” Immediately prior to the diagnosis and the resultant complications of radiation and chemotherapy, he was as healthy, active, and vigorous as he had ever been. And, his mind was as clear and incisive as ever, and it remained so until the moment of his death.

Charlie was born on July 21, 1920 in Windsor, Ontario. His mother, an American of Scottish-English descent from Chicago, initially worked as a department store clerk, and ultimately, as the manager of a successful lumber business. She was a woman of strong character who died with all her faculties intact at the age of 96. Prior to his illness at the age of 77, part of what led Charlie to anticipate many additional years of good life was his mother’s longevity. His father came from English stock and owned a furniture store. He fell victim to the Spanish influenza and died 2 months before Charlie was born.

For the first 9 years of his life and during the time of the Great Depression, Charlie lived with his mother and his father’s two unmarried sisters. Like many families, they were forced to take difficult steps to make the best of difficult circumstances. After his mother married a prominent businessman (who lost nearly everything in the stock market crash and then recovered), Charlie continued to live with his aunts until he went to university at 18 years of age. It can be speculated with a fair degree of confidence that Charlie’s unusual family situation during his formative years contributed in some way to his drive and ambition to succeed.

Charlie’s promise showed itself at any early age, and his grade school teachers recognized him as a boy of great intelligence who lacked a father’s influence. Charlie entered the University of Western Ontario in 1940 and, after a war-shortened course of 4 years, graduated with a medical degree in 1944, having been inducted into Alpha Omega Alpha in 1943. After graduation, Charlie did a brief stint as a lieutenant in the Canadian forces, an environment he found too confining for his active mind and creative energy.

While at the University of Western Ontario, Charlie taught pharmacology to nursing students to help pay for his medical education. The medical students were prohibited from dating the nursing students and vice versa. But Charlie’s usual respect for authority was overwhelmed by the beauty and charm of one of his students, Ruth Pitts, and they began an uninterrupted 58-year romance. After 5 years of courtship, Charlie and Ruth were married.

In 1944, he began a 9-month internship, also shortened by the war, at the Toronto General Hospital. During this time, Charlie met two individuals who were to play key roles in his life. Henry “Barnie” Barnett was an intern heading toward a career in neurology who became a life-
long friend and colleague. Kenneth McKenzie, the chief of neurosurgery, became Charlie’s role model. Charlie’s initial interest was in general surgery, but this was rapidly eclipsed by an infatuation with neurosurgery (which he referred to as “the queen of surgical specialties”), ignited by his exposure to McKenzie’s charismatic personality and extraordinary neurosurgical skills. McKenzie was trained by Harvey Cushing and believed that neurosurgeons should have a strong neuroscience background. Accordingly, he sent Charlie back to the University of Western Ontario to study neurophysiology under Barr, Miller, and Starvacki, and Charlie obtained a Master of Science degree in 1947. He then spent 1 year in John Fulton’s laboratory at Yale studying the physiology and cerebellar anatomy of the motor system.

In 1948, Charlie returned to London for 2 years to work at the Victoria Hospital as a resident under the legendary general surgeon, Angus McGlaghlin. Then, in 1949, he returned to the Toronto General Hospital as a resident/clinical assistant in neurosurgery under Kenneth McKenzie and Harry Botterel. After only 18 months of neurosurgical training, McKenzie took Charlie aside and told him he had nothing more to learn in Toronto. McKenzie made arrangement for Charlie to visit the great surgeons in the United Kingdom, Scandinavia, and Europe. The most rewarding part of this tour was the work with Hugh Cairns in Oxford, Herbert Olivecrona in Stockholm, and George Guiot in Paris. He saw the early transsphenoidal surgery that Guiot had adopted from Norman Dott, and he also saw Guiot divide the ansa lenticularis for tremor. It is surprising that Charlie did not follow up on either of these two areas.

Botterel also believed that Charlie could benefit from additional experience in neurology and arranged for clerkship at the National Hospital for Nervous and Mental Diseases at Queen’s Square. In London, Charlie and Ruth lived with “Barnie” Barnett, who was also clerkling at Queen’s Square, and his wife, Kay, who was a nursing school classmate of Ruth’s.

In the fall of 1951, Charlie returned to Toronto for studies in neuropathology as well as to take his neurosurgical examinations. During this time, he worked on the clinical
service with Botterel at Sunnybrook. McKenzie expressed a desire to have Charlie join his practice at the Toronto General Hospital, but Charlie decided to return to Western to start a neurosurgical practice under the leadership of Angus McGlagination. McKenzie was more or less in agreement with this move because of the strong physiology laboratories at Western, as well as the large amount of clinical material that would be available to Charlie as the first neurosurgeon in southwestern Ontario. Charlie made the move with reservations and misgivings, because he really had a desire to continue to work with McKenzie, who had become the most important man in his life.

Charlie felt that McKenzie acted like a father to him as well as his neurosurgical mentor. McKenzie, knowing that Charlie’s father had died before he had been born, took a special interest in his protégé. He introduced Charlie to fishing, bird shooting, and golfing, activities that retained his keen interest until his illness forced him to step back.

Charlie believed that neurosurgery was part of a continuous of neurosurgically related specialties. Accordingly, he founded the Department of Clinical Neurological Sciences in 1968 and was its first chairman from 1969 to 1974. This multidisciplinary department was based on a model that Barnie had created in Toronto and encompassed neurosurgery, neurology, neuropathology, and neuroradiology. To energize and solidify the department, Charlie recruited Barnie, who by that time had become Canada’s most prominent neurologist. Charlie and Barnie were as different in character as they were complementary, and the duo literally put the University of Western Ontario and London on the international map of medicine. In fact, at its apogee, London was the neurosurgical capital of the world.

When Barnie moved to London, he and Kay bought a house three doors from Charlie and Ruth. Charlie’s second son, Jimmy, married Barnie’s daughter, Jane, further cementing the dynasty.

In 1971, the University unit moved from Victoria Hospital to the new University Hospital, which Charlie had been instrumental in establishing. This hospital integrated outpatient clinics, inpatient facilities, research laboratories, and administrative offices into one modern structure.

From 1974 until 1984, Charlie had the honor of following Angus McGlagination as Chairman of the Department of Surgery at the University of Western Ontario.

In 1986, Charlie and Barnie founded the Robarts Institute, which has grown to a 100,000 sq ft extension of the research laboratories at the University Hospital. This has been supplemented by the additional 60,000 sq ft of laboratory space in the associated Siebens Drake Institute which they began in 1994.

Charlie performed his last operation on May 13, 1992, having been obliged to retire. He sorely missed the thrill of the surgery, but felt liberated from the constant “grief” attendant with such a practice as his. Unburdened by the stress of the operating room and energized by a near daily round of golf, the years literally melted off of him. Although he gave up operating, he remained passionately involved with neurosurgery, continued writing and lecturing, wrote his landmark book on vertebral basilar aneurysms, attended conferences, and stayed in touch with his students throughout the world. Just 2 days before he died, he was engaged in a dialogue regarding the relationship of nitrous oxide to endothelin in the pathogenesis of vasospasm, and the day before he died, he was debating the role of surgery for unruptured intracranial aneurysms.

Charlie was a surgeon’s surgeon, a “complete” surgeon who was intimately involved with every facet of the surgical experience, including the history of surgery, surgical anatomy and pathology, operative technique, documentation, communication with referring physicians, and publication and presentation of results. He was a compassionate physician and, in his own way, an inspiring teacher. Charlie brooded about his patients’ problems and planned their operations carefully, frequently seeking the opinion of his colleagues in neuroradiology, and anesthesiology, as well as neurosurgery before embarking on a procedure.

Charlie had the courage to operate on disorders previously thought to have been beyond the reach of contemporary surgery. He frequently took on those patients others had turned aside and those for whom previous surgery had not been successful. The most notable example of his courage was his initial experience with basilar bifurcation aneurysms, which ultimately opened up the entire field of surgery for posterior circulation aneurysms. His operations were anatomical in nature and had an elegance bred of simplicity. He made few moves and the resultant lack of wasted motion kept the pace of the operations rapid. This was facilitated by his ability to think two or three steps ahead as a result of careful preoperative planning. Charlie was bold and daring in the operating room and, although he used maneuvers that few others would, his technique was neither flashy nor showy. Occasionally, he was the master of the “grandstand,” putting a clip on and off the neck of an aneurysm numerous times in front of a shocked group of visiting neurosurgeons. He worked with few instruments; most memorably he used a dissector known as “my little thing.”

Charlie had tremendous stamina and endurance and never showed fatigue until after he left the operating room. His concentration was unwavering, and he had the determination to stay with the most difficult cases until his surgical objective had been accomplished. He was remarkably steady under fire and virtually never lost his cool, even when confronted with torrential hemorrhage from a burst aneurysm or arteriovenous malformation, or a bloody tumor.

Charlie’s operative technique was founded on general surgical principles and surgical anatomy and pathology. Based on his tremendous experience, he had a latent knowledge of three-dimensional anatomy that he could appreciate from any perspective and how this anatomy could be distorted by tumors and aneurysms. Observers were frequently awed by his ability to navigate around the base of the skull and manipulate brain, nerves, and vessels that had been distorted by tumors or giant aneurysms and further obscured by clot or heavy bleeding. He had rock steady hands and an extraordinary touch.

Charlie understood that surgical virtuosity was only one aspect in the management of his patients and that he could only be as good as the weakest member of his team. Accordingly, he surrounded himself with a superb multidisciplinary group of individuals, including in the early years the neuroradiologist, John Alcock, and the neuroanestesiologist, Ron Aitken, as well as a cadre of operating room nurses and nurses on the floor.
Charlie believed in and practiced meticulous record keeping, which facilitated his more than 150 contributions to the literature, documenting his operative experience with more than 3000 patients who came from around the world seeking his help. His notes detail more than 3000 aneurysms (more than 1800 of these in the posterior circulation), 400 arteriovenous malformations, and 300 acoustic tumors. Charlie believed strongly that neurosurgeons had an obligation to report what they had done, but only if they were conveying something new. He was fastidious about his communications with referring doctors, telephoning them frequently, and providing them with his handwritten as well as dictated notes.

A pioneer may be defined as an individual who pursues excellence through hard work, innovation, and risk taking. That description fits Charlie to a tee. He was the first to clip an aneurysm in Toronto, even though he was just a resident. He was one of the first to save the facial nerve consistently in large acoustic tumors, to use cardiopulmonary bypass with circulatory arrest, and deep hypothermia for the management of aneurysms, and to use proximal temporary clips for regional hypotension in aneurysm surgery. He invented the Drake "fenestrated" clip, the tourniquet to provide temporary proximal occlusion of intracranial arteries, and the tandem clip for basilar bifurcation aneurysms. He and Ron Aitken developed profound systemic hypotension for aneurysm and arteriovenous malformation surgery. He popularized proximal or Hunterian ligation, with or without bypass, for giant aneurysms. He was one of the first to embolize arteriovenous malformations, resorting to intraoperative injection of Gelfoam into feeding arteries in the early cases. He developed skull base approaches for aneurysms and tumors long before the discipline of skull base surgery existed. The list goes on and on.

Charlie had many pearls of wisdom related to surgery. He talked about how wounds heal end-to-end, not side-to-side, and therefore, admonished against incisions that were too short. He talked about how the belly of a scalpel blade respected tissue, and about how tumors, even invasive gliomas, had a plane, if you were careful enough to look for it. He insisted that you read every night, “even if it is only a paragraph or a page.”

Charlie was a captivating lecturer, particularly with smaller groups in informal settings. But for those of us who trained with him, his real strength was that he taught extensively and effectively by example. And, what an example he set.

Charlie had an intolerance for errors in patient management, particularly in the operating room. He was a master of nonverbal communication in conveying his displeasure when things did not live up to his standards. He forgave readily but never seemed to forget.

There are scores of neurosurgeons from around the world who spent time at the University of Western Ontario, some as residents or fellows, others as observers, who were invited into Charlie’s operating room, his wards, his clinic, and his home, and whose lives were forever influenced by the irresistible force of Charlie’s character. These surgeons left London with a newfound and enduring knowledge and friendship and were bonded together by shared admiration and affection for Charlie, who by example, personal challenge, encouragement, and by relentlessly raising the bar higher, spurred them on to do more and to do better. They are the Drake school of neurosurgery, Charlie’s disciples who carry on the tradition of challenging the most daunting of neurosurgical disorders. Through these individuals and future generations of neurosurgeons, Charlie will have ultimately helped countless desperate patients, many of whose plight would have been otherwise hopeless.

Charlie’s accomplishments were recognized with numerous honors and awards, including: five honorary degrees, and fellowships in the Royal College of Surgeons of South Africa, Ireland, Edinburgh, Australia, and England—the Royal Society of Medicine, and in the American Heart Association. He received the Distinguished Service Award from the Society of Neurological Surgeons in 1987 and the Harvey Cushing Medal from the American Association of Neurological Surgeons in 1988. He was a member of more than 40 medical and scientific societies throughout the world and was President of the Royal College of Physicians and Surgeons of Canada, The American Association of Neurological Surgeons, the American College of Surgeons, The World Federation of Neurosurgical Societies, the Society of Neurological Surgeons, The American Surgical Association, amongst others. He did more than 200 guest lectureships and visiting professorships in essentially every major neurological unit throughout the world. Charlie was a member and Chairman of the Board of the Journal of Neurosurgery.

For his accomplishments, which radiated well beyond medicine, Charlie was recognized by the Canadian government by being made an officer in the Order of Canada in 1982 and a companion in the Order of Canada in 1998, the latter being his nation’s highest honor.

By virtue of his accomplishments, Charlie was exposed to, and had a full appreciation of, the material trappings that could accompany success, such as lavish homes, large yachts, and private jets. On numerous occasions, Charlie was offered positions in the United States that would have provided himentrée to this arena. But, his choice, in an era of conspicuous consumption, was to pursue a more modest, albeit comfortable lifestyle in London. Charlie never considered money a reward or measure of success and, in fact, was relatively naive about the financial aspects of his practice. In certain regards, his approach to spending could be considered parsimonious.

Although neurosurgery was the focus and love of Charlie’s life, his spectacular career was based on a broad foundation of general knowledge and achievement. Charlie read extensively and traveled widely, feeding a powerful, inquisitive intellect that had a voracious appetite for a wide variety of information. As a result, for a surgeon of his accomplishment, he was amazingly well informed. This enabled him to sustain conversations on a wide range of topics with people outside of medicine and provided him a vantage point to view neurosurgery in the broadest perspective.

Charlie was a man of the world—an outdoorsman who loved bird hunting, fishing, and golf. Since retirement, he transferred his technical passion to golf, achieving three holes-in-one. Charlie was also a skillful, meticulously cautious pilot.

From an austere beginning and an awkward family situation, Charlie was determined to make something of
Charles G. Drake: 1920–1998

himself, and he did. He made his mark, and his accomplishments will be perpetuated into the future. Charlie has left behind a rich and abundant legacy. He is survived by Ruth, his wife of 58 years, and their sons, John, 52, a highly successful entrepreneur, Jimmy, 47, a pediatric neurosurgeon at Toronto Children’s Hospital, destined to a successful career in his own right, Steven, 44, a businessman, and Tommy, 42, an engineer with IBM, as well as 14 grandchildren.

Charlie Drake was a great man. This sounds trite, but nonetheless, it is spot-on. Defined in the dictionary, “great” is: “much higher in some quality or degree,” “much above the ordinary or average,” “eminent, distinguished, illustrious, superior,” “very impressive or imposing,” “having or showing nobility of mind or purpose,” “clever, expert, skillful, excellent,” “a great or distinguished person.” Charlie possessed many traits that were the foundation of his greatness. Of these, three stand out as being most important.

First was his personal courage. This enabled him to be a phenomenally bold surgeon, a risk taker, an innovator who pioneered the new field of cerebrovascular surgery. Second was his uncompromising personal and professional integrity, most succinctly articulated by his saying that, “You have to be so honest that it hurts.” And third was his unwavering loyalty—to Western, to London, to Canada, to his family, friends, students and colleagues, and to his patients.

Charlie Drake was arguably the greatest neurosurgeon of his era. He did things no one had done before. In numbers that no one will ever equal. With results that will never be surpassed. And, Charlie did this within the framework of normal human strengths and failings. For above all, he was a great human being. He was the right man in the right place at the right time. But at the risk of stating the obvious, Charlie could not have done what he did without his perfect counterpart, Ruth. Wife, mother, friend, companion, and more, Ruth is one of those rare women who can do it all, and yet she was able to give Charlie the encouragement, support, and most important, the freedom to do what he needed to do.

Manuscript received February 1, 1999.

Address reprint requests to: Neal F. Kassell, M.D., Department of Neurosurgery, Box 212, University of Virginia Health Sciences Center, Charlottesville, Virginia 22903.