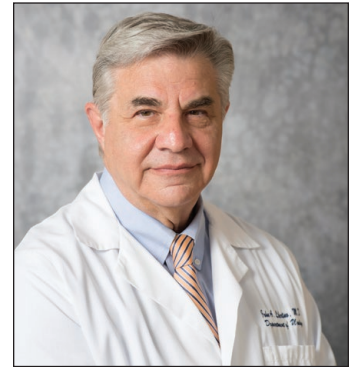

LEGENDS IN UROLOGY

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I would like to share with you my story and my journey into the field of urology and beyond.

I was born and raised in Brooklyn New York, in a warm and loving middle class family. My family, their values and my career are intertwined; and are a reflection of my DNA, the environment that shaped me and the decisions that I made during my journey. My mother gave me empathy and passion, and my father the calm, cool, fearlessness that shaped my nature. As a young couple my parents lost their first born child at 10 months of age from meningitis. I had heard this story several times while growing up and it may have subconsciously influenced my career path toward medicine, without my knowing. My father, one of the smartest men I have ever known, was an architectural engineer, who graduated from Cooper Union, a scholarship college, in 1929, at the beginning of the long depression. Together my parents taught me how to cope with adversity, illness, sorrow, pain and suffering with integrity and compassion.

Growing up in Brooklyn was fun. My neighborhood was a melting pot of middle class working people of different ethnicities. I attended public elementary, junior and senior high schools. I was far from a serious student early on, and most of my friends and classmates were of a similar nature. As a matter of fact, I chose my language course, not for intellectual reasons, but because the Latin class had enrolled the most beautiful girls in the junior high school. The teacher was known to give good grades to pretty girls. This choice wound up profoundly affecting my attitude toward education, scholarship and academic work. During my last year of junior high school, my district high school stopped teaching Latin, and I was given a choice between three other potential high schools. I went to the prettiest girls in the Latin class and asked them which high school they were going to attend, and they all said Erasmus Hall High School.

When I arrived at Erasmus, I realized that this was a very serious academic high school. It was ranked as one of the three best high schools in New York City. This was a place where everyone was expected to do their work, and we all did it, or we would suffer the consequences. My math teacher, Miss Lewenson, was the first to help me realize that I had a brain and that academic challenges could be fun. She changed the course of my life, and for that I am eternally grateful. By the time I graduated from this Gothic hall of learning, Erasmus had converted me into a scholar athlete. This was the first of many times in my life that I would be in the right place for the wrong reasons. Who would have thought pretty girls would have lead me to a life altering, profound, academic experience.

My time in college was fairly ordinary, except for the fact that I met my wife-to-be Mary Jo. We were both 17 and freshman. She swept me off my feet and I haven't come down to earth since. She is as smart and stable as she is beautiful. Everything I have accomplished in my lifetime is a tribute to her wisdom and judgement. This journey would have been very different without Mary Jo beside me.

I was fortunate to have attended the Georgetown University School of Medicine. I began there in September 1961. Georgetown was, and still is, a very special place. It was selective, and as a result I had so many phenomenal classmates. More importantly, it was a medical center that had a mind, soul and a heart. It was like family. It was here that my classmates and I were imbued with the spirit of caring, compassion and conscientiousness; all

mandatory ingredients for becoming a GOOD DOCTOR. I loved Georgetown and still do for what it represents, a compassionate place of learning and healing. While there I fell under the spell of many of their distinguished faculty. During my preclinical years, John Rose MD, PhD, Chair of the Physiology Department, stimulated my interest in cardiovascular physiology, and helped me obtain an NIH cardiovascular physiology research fellowship. This resulted in my first publication dealing with the comparative effects of angiotensin and epinephrine on the systemic vascular capacity of dogs. The animal preparation for these experiments required that we use a heart lung machine and cardiopulmonary bypass. This surgical experiment would have a major impact on my future clinical interests and research efforts.

During my clinical years, I began thinking about a career in cardiac surgery and fell under the influence of Dr. Charles Hufnagel, Chief of Cardiovascular Surgery at Georgetown; a true genius. Dr. Hufnagel was recruited from the Peter Bent Brigham Hospital and Harvard Medical School, where he did the first cadaver kidney transplant in the world on a woman with bichloride of mercury poisoning and acute renal failure. He transplanted a cadaver kidney onto her brachial artery and vein and left the ureter exteriorized. The kidney produced urine for several days before it was rejected, but it lasted long enough to overcome her acute renal failure before being removed. He saved her life and the field of transplantation was born. Dr. Hufnagel was also the pioneer of the first cardiac valve (aortic valve) and the Dacron graft prosthesis. His genius and pioneering efforts affected the lives of millions of people in the generations to come. His inspiration and motivation allowed me to think of a career as a cardiac, or vascular surgeon.

He was not, however, the last of the great Georgetown surgical faculty to influence my path. During my rotation on Urology, I was influenced by the brilliant Dr. Roger Baker, Chair of Urology. Prior to coming to Georgetown he was made chair of urology at the University of Chicago, at the very young age of 33, succeeding Dr. Charles Huggins, the only Nobel Laureate in Urology. He was not only a brilliant researcher but also a great technical surgeon. I remember one Saturday evening, when the son of the Ambassador from Norway was involved in a sledding accident. He was brought to the emergency room, and it was determined that his IVP demonstrated a ruptured left kidney. While Dr. Baker was doing a retroperitoneal nephrectomy he noted a bluish discoloration to the peritoneum. He opened the peritoneal cavity and found, as he predicted, a ruptured spleen which he proceeded to remove. I was impressed that he did this without the assistance of a general surgeon. He remarked that this was the value of having excellent general surgical training before becoming a urologist. From this and many other examples I learned to respect the importance of good general surgical training. I reiterate this lesson to my residents on a daily basis.

His research was also ground breaking. He did much original work on stripping the bladder mucosa and letting it regenerate in patients with multifocal superficial urothelial cancer. This landmark work was criticized by other lesser academicians who questioned the veracity of his results. As painful as this was for him, he taught me to persist if the results warranted it, to be immune to medical politics and to use their negative energy to spur you onto further good meaningful research. The work will always speak for itself. What a meaningful lesson to learn as a third year medical student. This dictum is something which I still live by, and it has always stood me in good stead. Dr. Baker stimulated my interest in becoming a urologist.

Mary Jo and I were married in 1963, at the end of sophomore year in medical school. We graduated from Georgetown in 1965. We loved it there but my medical school advisory, Dr. Judson Randolph, Chief of Pediatric Surgery at Washington Children's Hospital, suggested that I train at Strong Memorial Hospital of the University of Rochester Medical Center. He had trained at Strong Memorial, the Massachusetts General Hospital and Children's Hospital of Boston, and he thought that the best general surgical training was to be had in Rochester. Mary Jo did not want to leave Georgetown, a place we both loved, and she prayed that I would not match at Strong Memorial. I wanted to go there, and fortunately we matched; this was the first of many sacrifices that Mary Jo made in order to allow me to be what I wanted to become; a really good technical surgeon like Dr. Charles Hufnagel, Dr. Roger Baker and other subsequent surgical greats that were my mentors to be.

The department of General Surgery at Strong Memorial Hospital was very, very exciting, and in a building phase with the addition of many new, younger faculty. Dr. Charles Rob, the recently appointed new Chair of Surgery,

was recruited from London England. There, he and Dr. Eastcoat had described and carried out the first carotid endarterectomy in the world for carotid artery stenosis. Dr. Rob was an amazing vascular surgeon. He taught us how to be facile and fearless in the operating room. He would invariably unclamp the aortic graft as he rolled the aorta in the resident's direction so that you would not be afraid of significant, rapid blood loss. He was a pioneer who was not afraid to attempt new surgical approaches and procedures. He was also critical of himself, especially when things he attempted to do failed; such as when we attempted to revascularize a series of patients with a completed stroke, which resulted in intracerebral bleeding from the revascularized infarcted brain substance. He taught me to be fearless, but to approach surgical results in an honest unbiased way; another lesson I teach to my residents on a daily basis.

The next master surgeon who I came in contact with at Strong Memorial was Dr. Seymour Schwartz. His pioneering textbook on *Surgery of the Liver* and *Schwartz's Textbook of Surgery* are classics and are still in use to this day. He is a brilliant mind and outstanding technical surgeon. His command of the surgical literature was mind boggling. During my time in general surgery, along with the faculty at Strong Memorial, we published a landmark paper on The Significance of the Serum Amylase Level and proved that very high levels were associated with gallstone obstruction of the common bile duct rather than pancreatitis which was the common wisdom at that time. Dr. Schwartz was also a visionary and he pushed the department to become involved in renal transplantation in its infancy. Because of my strong interests in Cardiovascular Surgery (Hufnagel & Rob), Urology (Baker), and now transplantation, I became confused as to what surgical direction I should take. I had a difficult time choosing whether to stay in general surgery or move on to urology. I loved general surgery and the comfort that it gave me in doing complex surgery. I am not sure why, but in the end I instinctively chose to pursue urology with the hope that I could do transplantation and the vascular procedures that were emerging in the field of urology. I wanted to become a urologic surgeon with expertise in renovascular surgery, transplantation and what emerged to become IVC thrombectomies. This was the cauldron that hatched the field of urovascular surgery for me. I was on my way forward.

With these thoughts in mind I started interviewing for urology residencies. There was no match program in urology in those days. One went for interviews, and if the chair liked you, he would offer you a position in his program. You could get multiple offers, but you had to choose a program within a certain period of time. I remember being accepted to five excellent programs thanks to the strong recommendations of Drs. Rob, Schwartz, and DeWeese. Although I was very impressed with Drs. Lattimer, Marshall, Leadbetter and Harrison, I cast my lot with the new chair at Yale, Dr. Bernard Lytton. He was a young, dynamic British surgeon. Although he was a fully trained general surgeon, he specialized in urology, which was typical of British urologists in those days. The fact that he was an excellent general surgeon clinched my decision.

I loved Bernie Lytton. He was intelligent, inquisitive, creative, energetic and technically very gifted. As it turned out Yale and the environment that Dr. Lytton created was perfect for me. The environment was dynamic, open and not hierarchical. Together Dr. Lytton, Dr. Martin Schiff and I started the kidney transplant program at Yale in late 60's. Hopefully my experience at Strong Memorial was helpful to this nascent program. I was also fortunate to become a Harvey Cushing fellow in Surgery at Yale and to spend time with Dr. Stanzl, the Director of Vascular Surgery. I was now certain that my choice of urology with a transplant, vascular surgery bent was ideal for me. I had finally reached inner peace.

In 1970 Mary Jo and I moved to Boston to take a position in the Lahey Clinic's Urology department, and to initiate as the director, a new kidney transplant program. We were only a stone's throw from the Peter Bent Brigham Hospital, the institution which pioneered kidney transplants. It was difficult to start a new program but the work was rewarding. We, in conjunction with the Joslin Diabetes Foundation, started to do many diabetic transplants. We pioneered, together, the techniques for the diabetic transplants, recognized the condition to become known as contrast induced nephrotoxicity and created the standards for diabetic transplantation. The collaboration of this team was truly inspirational and the University of Minnesota and the Lahey/Joslin programs became the global leaders in the field.

At Lahey, my medical colleagues, upon learning that we in urology could do renal transplants, began referring all of their renovascular cases to our service. We were fortunate to be able to carry out over 700 renovascular

procedures before we were replaced by renal artery stents. My colleague and best friend, Dr. Leonard Zinman, and I were also first to revascularize totally occluded renal arteries in nonfunctioning kidneys and achieve restoration of kidney function. Together we established the criteria that predicted successful return of renal function. Here we questioned the current wisdom that these were irretrievably dead kidneys. We also collaborated on a *Textbook of Renovascular Surgery*. In addition, I developed technical alternatives to the aortorenal bypass such as the hepatic and iliac to renal saphenous vein bypass graft. My interest in reconstructive surgery also resulted in three editions of my *Textbook of Reconstructive Urologic Surgery* and my 12 volume textbook series entitled *International Perspectives in Urology*. Happily, I was at the cross roads of urology, vascular surgery and renal transplantation, which was just where I wanted to be.

As time went on, I began applying my vascular interests to renal cell cancer involving the inferior vena cava and the heart. We were able to describe many of the original surgical approaches to this condition. We pioneered the use of cardiopulmonary bypass, and then, the minimally invasive approach to cardiopulmonary bypass obviating a median sternotomy and replacing it with a small parasternal incision and arterial return via the subclavian artery rather than the aortic root. We have since reported on approximately 365 cases of IVC thrombectomies and 75 cases of cardiopulmonary bypass surgery with circulatory arrest for tumors above the hepatic veins which constitutes the largest reported series in the literature.

As one who grew up in the field of transplantation and chronic renal failure, I was sensitive to the fact that patients who had compromised renal function required a different approach to partial nephrectomy, this is especially true for patients with a solitary kidney, pre-existing azotemia or bilateral kidney tumors. This led me to develop the nonclamping technique for partial nephrectomy. We have proven, in a series of nearly 1000 cases that the nonclamping partial nephrectomy protects and preserves renal function. Many other seasoned investigators have reproduced these results. Early in my surgical experience, when I was developing the techniques for IVC thrombectomy and the technique for the nonclamping partial nephrectomy, these ideas were not enthusiastically received and, in some circles, heartily criticized. As I learned from Dr. Baker, Dr. Rob and Dr. Schwartz if the results are good, carry on and do not let the critic's negativity interfere with surgical creativity. Much of this work recently resulted in my *Textbook of Kidney Cancer*.

I am so indebted to my wife Mary Jo and my sons, John Philip and Christopher, who allowed me to do this work and supported my efforts, especially when critics were plentiful; and to my residents who provided the stimulus and the motivation to always challenge the current wisdom. To the next generation of young urologists, tread forward vigorously and without fear because the rewards are without equal.

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