
LEGENDS IN UROLOGY

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All along my path to the practice of medicine, in education, apprenticeship and professional development, I have been privileged to learn from magnificent teachers and exemplary human beings. Each of them, individually and as part of outstanding institutions, promoted moral, pedagogical, scientific and professional values among their students. These legends of urology provided the foundation on which my own professional activity was built.

I started medical school in 1956, as a student of Carlos Jimenez Diaz, who was to the teaching of medicine in Spain and Hispanic America what William Osler was to the field in the United States. Jimenez Diaz led in 1955 one of the best institutions for the teaching of medicine: A University Hospital that was at the same time a Research Center and an Academic Institution facilitating frequent, intense and wide-ranging discussions of global pathology. Medical students lived a permanent rotating residency among different departments and services and were integrated into research projects. I was fortunate to form part of a project on renal transplantation as a potential treatment for terminal uremia. This was the origin of my early interest in renal transplantation (1959) and as at the end of medical school (1962) I had already acquired some surgical abilities, so I decided to become a urologist.

The excellency of the Medical School promoted long lasting interest and a deep commitment to medical teaching. In 1974 I was named professor of urology by the Madrid University (UAM) post I have maintained with progressive responsibilities; catedrático (full professor), director of the department of surgery, emeritus professor up to the present. A great deal of work has been dedicated to the Spanish residency program in urology and to the curricula in urology for medical students adapted to the Bologna Pact (1999).

After years of research on kidney transplantation (tolerance to warm ischemia, methods for controlling renal rejection early immunotherapy, etc.), and more than 200 transplants in dogs, the human Kidney Transplant program started in 1964. We are especially proud of what was accomplished because the investigative process in itself led to formation of experts in nephrology, urologists trained in renal grafting and contributed greatly to the beginning of the brilliant and internationally acclaimed ONT (Spanish Organ Transplant Organization). In 2015 Spain totaled over 60,000 kidney transplants, a satisfactory consequence of this pioneering project, accomplished with the cooperation of many other urologists, nephrologists and institutions.

In 1962 I began in urology under Luis Cifuentes Delatte, director of the Department of Urology in our Institution, later known as the Fundación Jimenez Diaz University hospital. Luis Cifuentes trained in Berlin (A. Von Listenberg) and Ann Arbor (Reed Nesbit). Cifuentes was an excellent urologist, and a great scientist with important contributions in many fields of basic science. His works on nephrolithiasis are well known internationally. Under his direction and stimulus, we concentrated on innovative investigations in many areas, with special dedication to urinary tract infection, bladder tumor pathology, prostate adenoma morphogenesis and early work on urodynamics.

The *Corynebacterium urealithicum* was fully identified and its potential ureolithic power measured with the collaboration of the Department of Microbiology (F. Soriano). Our continuous work with the Department of

Microbiology resulted in many studies on urinary infection, septic risk of the urological patient, the scientific basis of antimicrobial prophylaxis in urological surgery, etc. finally summarized in a book on High Risk Urinary Tract Infection (1982).

My early work on lower urinary tract (LUT), urodynamics was due to the massive presence of children with meningocele in our institution. Combining the use of Lewis cystomanometer and dynamic radiology the different neurogenic dysfunctions of these children were categorized. In 1965 we were already treating these patients with the powerful alpha-blocker phenoxybenzamine, associated in some cases with intermittent catheterization, when our colleagues were “diverting” many of these children and “undiverting” years later. Our work on prostate adenoma morphogenesis (F. Manzarbeitia) and inflammatory markers response to diverse pharmacological drugs (A. López Farré) provided original and interesting data of clinical value.

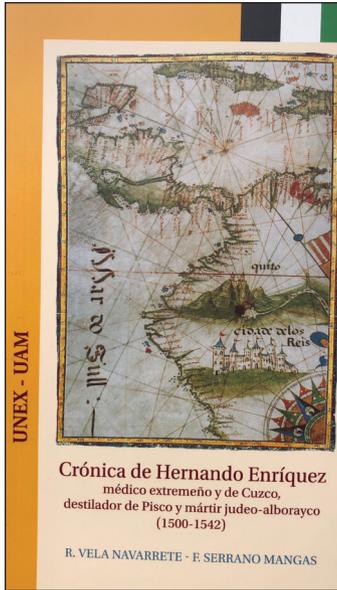
In September 1965, following the ECFMG examination, I was accepted as a postdoctoral fellow at U.C.L.A. Department of Urology under the direction of Willard Goodwin and Joseph Kaufman for 1 year, later expanded for 3 months with an N.I.H. fellowship. Goodwin’s innovative use of ileal segments for ureteral and bladder substitutions are well known. In 1956 he described the “spherical bladder”. We demonstrated years later by urodynamic testing that the spherical bladder was the ideal model for bladder substitution although others added “cheminées” for better protection.

Joseph Kaufman’s pioneering work on renovascular hypertension and renovascular surgery was especially attractive because of its connection with renal transplantation. Beyond technical perfection, unsurpassable in the hands of Kaufman, there were frequent debates on the interpretation of results and complications. We explored in animal models aortoiliac, vena cava and portal hemodynamics and the hypothesis that in the scenario of high flow vascular surgery, most complications and failure were not due to technical complications but to renal lesions and consequent reductions of flow (Lancet 1969). Thanks to the UCLA residents Chester Winter, Patrick Walsh, Peter Scardino, Lester Klein, Ben Gittes, Rich Earlich, ... and European visitors Mikele Pavone Macaluso, Jo Smith, Rolf Ackerman, Fritz Schroeder, Paul Van Cagh, Urs Studer, Peter Rather. I have always enjoyed the best and most advanced urological ambiance!

In the early 70’s the standard urodynamics study of the lower urinary tract (LUT) was a common procedure: in our case, videourodynamic. It was known that not all dilatations of the upper urinary tract (UUT) were obstructive but the UTT urodynamics study was ignored. Applying our radiological facilities, we used antegrade renal puncture pyelography and manometry to explore upper tract urodynamics. First, with constant pressure, flow controlled, antegrade perfusion of contrast dye and later combining pressure flow studies. With these methods, we were able to recognize obstruction, organic or functional, and to quantify the intensity of the obstruction (C. González Enguita).

The publication of Shlomo Raz and Marco Caine in 1973 on the high expression of adrenergic receptors in prostatic tissue was, in some way, the reason for the use of alpha-blockers in BPH. For us, this work served as a stimulus for starting an ambitious project on uropharmacology (A. García Sacristán, F. Pérez Martínez) that included isometrics studies, and in vivo experimental models in animals. We have tested the pharmacological response of the ureter, bladder and striated sphincter to many drugs, in sample isolated or simultaneously tested, under different functional circumstances. Some of the drugs currently used in clinical urology have been tested in our lab. In 1979 we published with S. Raz a book on Pharmacological Control of Urodynamic Dysfunctions, briefing part of our extensive work on the subject. Our facilities permitted in 1982 explore the endotelial benefits of sildenafil using β 1-guanilatociclasa as a marker (J.V. García Cardoso).

For 8 years I was General Secretary of the Spain Urology Association (AEU). Perhaps because of what I learned during this fruitful period, Frans Debruyne asked me to collaborate with the European Urology Association (EAU), where I served two terms as director of the Strategy and Planning Office (SPO). Our collaboration ended with the publication of a small work, The Future of European Urology (Guy Vallancien, Karl-Heinz Kurth, J. T. Andersen, G. Martorana, A. Borowka) along with other publications, which will doubtless be food for thought for future urologists.



A humanistic touch should be added to my professional itinerary. *Crónica de Hernando Enríquez*, médico extremeño y de Cuzco, relates the misfortune of a young doctor that travels to Peru (1532) looking for new drugs to complete European “*Materia Médica*”. *Maridaje y forja de la cocina novohispana* is the history of Mexican food with a critical view of Mayas-Aztecs food in the early 16th century and the changes motivated by the meeting of European and Indigenous culture and the forge of current Mexican cuisine.

In the last 50 years we have experienced substantial changes in medical and surgical practice. Modern medicine, highly technological and highly effective, is directed at “procedures” more than individual patients. This new focus has made profound changes in the social and clinical context of medicine. The excellent technology now available can make it difficult to value sufficiently the efforts of previous generations. I hope that this brief biographical account may give young urologists an additional, historic context for their profession. Urology with its powerful medical and surgical commitments is a most attractive professional specialty which deserves permanent passionate dedication.

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