

Just bragging!

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THE HISTORY OF URODYNAMICS

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and normal micturition (Muellner and Fleischner, 1949). They showed by fluoroscopy that only after voluntary opening of the urinary sphincter did the bladder detrusor contract. Later reports used the cine camera to obtain permanent record of continuous fluoroscopy in the study of abnormal micturition (Hinman, et al., 1954 and Caine, 1958). It was the work of Earl R. Miller and associates at the University of California at San Francisco which truly popularized the use of cinefluoroscopy in conjunction with the other lower urinary tract urodynamic studies (Miller, 1967). Miller's ^{radiologic research} urodynamic laboratory was perhaps the first fully recognized facility to perform modern urodynamic studies. Bates and associates in 1970 reported on over 220 cases of simultaneous cinefluoroscopy, cystometry, and uroflowmetry. They discovered the combination of studies to provide excellent objective data necessary for the evaluation of complicated stress incontinence.

ORGANIZATION

EARLY MEETINGS In spirit, the Urodynamics Society was formed on February 18-20, 1965 in Durham, North Carolina during a symposium on the Neurogenic Bladder held under the auspices of the Vocational Rehabilitation Administration and Duke University Medical Center. The symposium was an exclusively American contingency and resulted in a significant publication, edited by Saul Boyarsky, on the study of the neurogenic bladder (Boyarsky, 1967). It was at this meeting that many of the participants were first informed of the unique laboratory of Earl R. Miller with the combination of cystometry, uroflowmetry, urethral pressure profile and cinefluoroscopy, with electromyography soon to follow (Miller, 1967)

On November 1-2, 1968 a workshop was held in Iowa City on the Hydrodynamics of Micturition, later published as a book (Hinman, 1971). Participants were nationally known with interests in neurourology and urodynamics. Finally, the first official Urodynamic Society meeting was held a few months later on May 12, 1969 at the San Francisco Hilton (fig. 11) under the organizing power of Saul Boyarsky. The Society has since had an eminent role in the development of the field. The time around 1970 represented the era when urodynamics reached full world recognition as a needed modality in the evaluation of difficult micturition disorders.

PUBLICATIONS The term "urodynamics" was coined by David Melvin Davis (Davis 1954) and was first used in the Journal of Urology in 1962 by Davis and Zimskind concerning the upper urinary tract. However, it was not until April 1975 that this journal began a separate section on urodynamics with two publications that initial year (Turner-Warwick, 1975, and Raz and Adler, 1975). In 1982 the first issue of Neurourology and Urodynamics was published, thus dedicating a journal to the field. The urologist/pathologist, Ahmad Elbadawi, from

as an inspiration to those who were associated with him (Ananias C. Diokno, personal communication).

Some, including Saul Boyarsky, Frank Hinman, Jr. and Richard Turner-Warwick, believe that Earl R. Miller (fig. 14) was perhaps the most influential figure in the development of modern urodynamics (personal communications). Miller was professor of radiology and director of the radiological research laboratory at the University of California at San Francisco from 1958 until his retirement on April Fool's day, 1974. He was born in Milwaukee, Wisconsin, and received a bachelors of science and masters degrees in physics, and his medical degree from the University of Wisconsin. After training under the well known radiologists Robert Newell at Stanford University and Hugh Wilson at Yale University he went to San Francisco where he remained until his retirement. He was chairman of the department of radiology for a few years in the forties, but he disliked the administrative part of the job. Miller's goal in radiology was to "marry physiology and anatomy." He finally was given the chance by the university President when he was given his own laboratory in 1958. He was most influenced by the works of the visiting Swedish gynecologist, Goran Enhorning, who spent several months in Miller's laboratory and believes that without Enhorning's assistance and knowledge he would have been unable to develop the laboratory as he did (Miller, personal communication). With the aid of two associates in electronics, Ed McCurry, an engineer and Bernie Hruska, "a man of all trades," and influence of the urologists Frank Hinman, Jr. and Emil Tanagho, Miller was able to develop his unique laboratory. He would routinely spend the mornings to read X-rays and all afternoons he dedicated to research (Miller, personal communication). Throughout his work he attempted to obtain the most information with least radiation. Using simultaneous images of physiological data

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and Image intensified x-ray movies, he was able to gain the maximum amount of information with the minimum amount of radiation exposure. (Hinman, Urol, Clin, 1979). He should be given much credit for developing what we know today as video-urodynamics. (Miller, 1967). Miller was also involved in various other research projects outside of the urinary tract including superb work on speech, phonation, and swallowing.

SUMMARY

We are impressed at the recent birth and explosive growth of the field of urodynamics practically all occurring in this century. Only in the last 20 years has there been any significant organization of the field, with urological journals dedicating some pages to the field in the last 15 years. More standard terminology has been in use for approximately 10 years. David Melvin Davis, Jack Lapides and Earl R. Miller in our eyes were perhaps the most influential figures in American and international urodynamics. Although not all could be included in this article significant contributions in the field of urodynamics by urologists and non-urologists, particularly engineers, gynecologists, neurologists, neurosurgeons, physicists, physiologists and radiologists. Finally, it is important to stress and continue to remind ourselves that no matter how helpful urodynamics has been in the evaluation of difficult micturition disorders, it will never be able to replace a good patient history and physical examination.

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