

# The History of Urology in Lancaster

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## AUTHOR'S NOTE:

The reader will note relatively few references following this article. The entire section on Urology of the Ancients was drawn from *The History of Urology* by Leonard J. T. Murphy and Ernest Desnos, a volume from my personal library from which I gleaned information for a presentation years ago at the Torch Club of Lancaster. Much of the rest represents my personal experience, review of newspaper articles, perusal of *Lancaster Medicine*, and conversations with Dr. Henry Wentz and several urologists in central Pennsylvania.

## UROLOGY OF THE ANCIENTS

Before embarking on local history, it seems appropriate to include a brief review of the ancient dialogues and techniques regarding treatments of urinary tract disorders. Afflictions of the urinary system as well as ceremonial rituals dealing with the phallus have been recorded and depicted through the ages. The Ebers papyrus, an Egyptian medical papyrus dating from 1500 B.C., refers to “retention of urine” and enumerates various prescriptions, mostly empiric, for treatments regulating the “flow of urine.” Descriptions of surgery for bladder stones are recorded in ancient Hindu texts, as are ceremonies dealing with sacrifice of the prepuce to the gods. The Hindu system of medicine also notes the use of catheters for urinary retention, surgical drainage of scrotal abscesses, and urethral instillations for what was likely gonorrhoea. In a similar vein, there are recordings of urological diseases and treatments in ancient Chinese, Babylonian, Hebrew, Persian, and Armenian literature. (1)



Figure 5.20. The *Grand Appareil*. B, Left hand holding the sound. C, Right hand holding the lancet. FF, Hands of the assistant retracting the scrotum. (From Alghisi: *Litotomia Ovvero del Cavare la Pietra*, 1707.)

There is perhaps no greater example of the challenges facing medical practitioners of old than dealing with the treatment of bladder and urethral calculi. The oldest object of urological interest is a bladder stone dating from 5000 B.C. discovered by archaeologist Elliot Smith among the pelvic bones of a teenage boy in 1901 at El Amrah near Abyda, Egypt. Detailed descriptions of lithotomy procedures are recorded in ancient Egyptian and Indian works, but calculus disease is not well described until the time of Hippocrates (born 460 B.C.) in Kos, Greece. We are all cognizant of the

admonition in his oath that we “not cut persons laboring under the stone, but will leave this to be done by practitioners of this work.” The mortality from this surgery obviously was high. The Hippocratic Collection describes four (4) diseases of the kidney, one of which is undoubtedly stone disease. Following the death of Hippocrates, the great school of Alexandria became the center of

medical learning. Aristotle (born 384 B.C.) taught that calculi only occurred in man, never in animal, and they formed primarily in the bladder. At this time, improvements in surgical lithotomy were instituted by devising methods of cutting or breaking the stone to facilitate removal. (1)

After the conquest of Greece, the center of medical knowledge moved to Rome. Here, Celcus's technique of lithotomy was practiced with little modification until the end of the 18th century. During this period of time, practitioners in the Arabian Empire from Spain to the border of India, developed various scalpels and instruments for lithotomy and urethrotomy. While this was occurring, centers of medicine developed in France in Montpellier and Paris. The Faculty of Medicine in Paris was founded in the second half of the eighteenth century. Members of the Faculty considered surgery for urinary stones beneath their dignity, and so, these procedures were performed instead by itinerant barbers. Brunus of Longoburg, author of a book on surgery, declared that lithotomy be "relegated to barbers and low persons, rustics, idiots, and imbeciles, and what is even worse, to base and presumptuous women who are not afraid to perform it." Barbers continued to perform stone surgeries until the Academy of Surgery was formed under Louis XV in France in 1731. (1)

Although a rigid urinary catheter had been used in ancient times, it was not until the end of the seventeenth century that a Dutch surgeon, Von Solingen, constructed a spirally wound flat silver wire catheter which accommodated itself to the contours of the urethra. Fifty years later, Benjamin Franklin devised a similar catheter for his brother, a sufferer from the stone. Years later, Franklin would need this catheter for his own affliction.

## THE MODERN ERA

The nineteenth century saw the development of urological instruments and techniques, and indeed the onset of the specialty of urology itself. Following the phasing out of itinerants and barber surgeons, general surgeons put on the mantle of urological surgeons. As transurethral techniques were developed, friction arose between these urological innovators and the general surgeons. Fierce rivalries ensued, but over time, with advances in instrumentation and understanding of urinary tract pathology, the competition gradually faded. Of the instruments devised during this period, those dealing with lithotripsy were paramount. By the end of the nineteenth century, it was apparent that specialists were needed for surgical intervention of urological disease.

Development of the cystoscope ushered in the modern era of urology. Originally designed with candle illumination, then the use of mirrors, it wasn't until 1877 that the German urologist Max Nitze invented the forerunner of the modern cystoscope. Further advancements and refinements ensued with Edison's invention of the incandescent lamp in 1880. With the cystoscope came a host of instruments designed for transurethral surgery developing over a span of 140 years to the present use of lasers for the treatment of prostatic hyperplasia and stone disease.

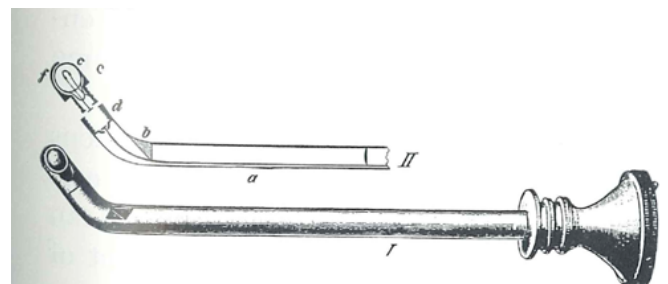


Figure 11.26. Nitze's cystoscope with Edison incandescent lamp, 1887. (From L. Casper: *Handbuch der Cystoskopie*. Leipzig, Thieme, 1905.)

Advances in techniques for open urological surgery melded into non-invasive techniques dealing with kidney and ureteral stones, for example, ureteroscopy and shock wave lithotripsy. Additionally, less invasive techniques such as laparoscopy and robotic procedures have come into vogue.

## LANCASTER UROLOGY

Review of monthly issues of Lancaster Medicine published by the Lancaster City & County Medical Society from 1968 to 2007 revealed scant information regarding the specialty of urology. In fact, only six (6) issues during this period of time contained articles of urological content. Continuous medical education (CME) presentations of urological interest at St. Joseph Hospital and Lancaster General Hospital were infrequent.

*History of Medicine in Lancaster County* records a case of staghorn calculus in 1907 treated with nephrectomy by Dr. John L. Atlee. Records from Lancaster General Hospital (founded 1893) report a circumcision. (2) These are the only records of early urologic procedures performed in Lancaster County that I could find. Suffice it to say, in the absence of clear cut evidence, whatever urologic disease needed surgical intervention it was performed by general surgeons. So it remained until the arrival of Joseph Appleyard, M.D., in 1926. The first urologist in Lancaster County, he eventually became Medical Director of LGH from 1946 to 1957. He also founded the Lancaster Medical Bureau in 1949. There are records of him treating local females for venereal disease contracted by consort with sailors from Bainbridge who visited Lancaster every weekend. There were also rumors afloat that he kept a catheter rolled in his hat band in case any of his colleagues went into urinary retention after an evening of imbibitions. I know firsthand that he opened the floodgate of vasectomy procedures in the 1960s.

Ian Hodge, M.D., joined the LGH Staff in 1941. Ian was the first urologist in Lancaster certified by the American Board of Urology. He was Medical Director of LGH from 1965 to 1969, President of the Medical Staff in 1965-1969, and a member of the Board from 1960 to 1980. He also served as President of the Mid-Atlantic Section of the American Urological Association (AUA). Afterwards, the following urologists established practices or joined existing groups in the county: Cyril Stapinski, M.D., Henry Huffnagle, M.D., Charles "Ed" Pohl, M.D., Marvin Daley, M.D., Victor Agusta, M.D., Jon Walker, M.D., Joseph Breslin, M.D., John Bartges, M.D., Seymour Kilstein, D.O., F. Michael Rommel, M.D., Paul Sieber, M.D., Victor Altadonna, M.D., Chris Theodoran, D.O., Paul Sisbarro, D.O., Bruce Kilstein, D.O., Ken Lessans, M.D., Mark Jarowenko, M.D., Robert Hong, M.D., David Svetec, M.D., Michael Del Terzo, M.D., Christopher Woodard, M.D., and Paul Russinko, M.D. During their careers Drs. Daley, Agusta, and Walker served as medical staff presidents and held positions on hospital boards. Agusta served as President of the Mid-Atlantic Section of the AUA. Daley was president of the Urological Association of Pennsylvania 1983-1984. Rommel served on the board of this organization for several years. He also was President of the Mid-Atlantic Section of the AUA and has been on Boards of the American Association of Clinical Urologists, UROPAC (a urology political action committee), and PHC (a physician/hospital cooperative).

Radiation therapy came upon the scene in the 1970's at Lancaster General Hospital under the direction of John Ebersole, M.D. This service became an established modality for the treatment of prostate cancer here in Lancaster. Other major advances in the treatment of urological disorders were

ushered in during the 1980's. By far the most significant of these was the change in treatment options for stone disease. Extracorporeal shock wave lithotripsy (ESWL), developed in Germany, came to Lancaster County with the organization of the South Central Pennsylvania Lithotripter Alliance. The Dornier Company developed ESWL. The principle underlying this procedure was derived from the observation of airplane wing deterioration produced by shock waves. Dr. Victor Agusta, working in concert with Paul Wedel, President of Lancaster General Hospital, succeeded in bringing this modality to Lancaster, representing the first successful cooperative effort between physician and hospital administration in Lancaster County. Urologists and patients here commuted to Hershey Medical Center where the lithotripter was housed. Eventually, the local alliance was absorbed into the American Kidney Stone Management Organization. Sometime later, mobile lithotripter units came to stations in the county so that the patients could stay here for their treatment.

Over the ensuing years, Lancaster County urologists adopted further technological changes. Ureteroscopic surgery originated in the latter part of the 1980's as instrumentation became flexible and smaller. The transition to fiberoptic light added a valuable means of diagnosis as well as treatment for ureteral stones and lesions. Pulse dyed laser fragmentation of stones proved highly effective, surpassing the success rates of blind basket extraction. Percutaneous approaches to renal calculi also arose in the 1980's. The first of these was performed at St. Joseph Hospital in 1984 by members of the Lancaster Urological Group. This necessitated close cooperation between interventional radiologists and urologists. Portals were established and calculi either removed whole or fragmented using nephroscopes. Again, the advancement in instrumentation was vital to these changes in renal stone surgery.

Another surgical change was that of bladder neck suspension procedures for female incontinence. Thomas Stamey, in California, developed a needle suspension procedure as a less invasive substitute for the Marshall-Marchetti-Krantz open surgical approach. The first of these performed in Lancaster County was by Marvin Daley, M.D. in 1984, and he subsequently presented a paper on the new procedure at the Philadelphia Urological Society. Modifications of this approach developed over many years ending with the use of mesh and slings in lieu of sutures.

The advent of prostate specific antigen (PSA) determination heralded a milestone in the diagnosis and treatment of prostate cancer. Much controversy exists today regarding the ultimate value of this test as a screening modality, but the vast majority of urologists believe it has brought about reduction in the presentation of advanced disease as well as the mortality associated with prostatic cancer. Granted, there undoubtedly have been an over abundance of biopsies precipitated by abnormal PSA levels, but the rewards of early diagnosis certainly have outweighed the risks associated with biopsy. On the other hand, the potential morbidities associated with treatment of the disease have been troubling. Heretofore, urologists had no sure way of predicting the progress of prostate carcinoma in any given patient. Now, in the absence of a positive family history, the American Urological Association recommends PSA testing only in men aged 55 to 70. Beyond 70 years of age, the patient should have a discussion with his personal physician and/or his urologist regarding the pros and cons of testing. PSA elevations arise not only from cancer, but from prostatic hypertrophy and prostatitis as well; however, until a more specific marker is available I doubt we will abandon the use of this valuable diagnostic measure. Such newer and more specific oncogenetic tests are now on the horizon,

although they are currently very expensive. Additionally, PSA testing remains a valuable tool for the monitoring of disease progression after diagnosis or treatment.

The 1990's saw another arrow in the quiver of prostatic cancer treatment. External beam therapy had matured and was an effective and efficient means of treatment, but another modality in the form of brachytherapy was improved with the development of ultrasonic guidance for the insertion of radioactive seeds. Brachytherapy had been used years earlier with the placement of seeds during operative exposure of the gland. Results were marginal and complications unacceptable. With the use of ultrasound, the perineal approach to needle placement was vastly improved and this came into common use in Lancaster. As for the treatment of advanced prostatic carcinoma, estrogen therapy has been replaced by gonadotropin inhibitors (leuprolide) and anti-androgens (bicalutamide). Castrate resistant tumors are attacked with mitotic inhibitors (docetaxel) and newer agents such as abiraterone and vaccines (Provenge).

At the turn of this century, laser ablation began to replace resection of tissue in the transurethral treatment of prostatic hypertrophy. Adoption of this technique is now virtually universal. Other methods for the surgical treatment of BPH include bipolar electroresection and microwave therapy. Of course, medical therapy of prostatic hypertrophy came into overwhelming use with alpha adrenergic agents and five alpha reductase inhibitors.

The adoption of laparoscopy by urologists was slow, and it was not until robotic surgery was developed that a minimally invasive surgical approach to prostate cancer came to fruition. David Svetec, M.D., was the pioneer here followed by Mark Jarowenko, M.D., and subsequently Chris Woodard, M.D, and Paul Russinko, M.D.. The use of robotics has led to shorter hospital stays as well as fewer days of indwelling catheter need. Because of more accurate visualization there is said to be higher success in nerve preservation with the reward of better preservation of erectile function and urinary continence. Endoscopic procedures for renal resection and ureteropelvic junction obstruction repair are now commonplace.

Another advance in the field of urology has been the improvement in urodynamic diagnosis. The standard water reservoir and meter stick have been replaced by electronic apparatus. Sacral nerve stimulation, a technique honed by Ken Lessans, M.D., has proven effective in ameliorating the distressing symptoms of irritable bladder otherwise unresponsive to medical therapy. Botox is also used for the treatment of intractable irritable bladder.

Finally, advances in the surgical treatment of invasive bladder cancer have led to the use of bladder replacement procedures utilizing small or large bowel pouches. These intricate and complex surgeries are performed on a regular basis. Knowledge regarding the remarkable changes in the treatment of erectile dysfunction is universal, and therefore requires no elucidation or discussion.

In summary, Lancaster urologists have maintained a high standard in the diagnosis and treatment of urinary tract disorders, being neither the first nor the last to adopt and incorporate new technologies. In addition, several became actively engaged in organized medicine as evidenced by their terms of service as medical staff presidents and hospital board members, as well as national and regional specialty organizations.

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