

Editorial

A History of an Old and Still New Disease: Urinary Lithiasis

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General considerations

We believe that with the apparition of the first settlements and the act of eating also appeared the first potentially urinary lithiasis patients.

One of the "leading minds" [1] of the twentieth century, Margaret Mead (1901-1978) (fig. 1), renowned anthropologist used to say "it is easier to change a nation religion rather its eating habits". We believe that reminding the famous phrase "tooth for tooth" (Exodus 21: 24) (fig. 2) it will only complicate things without enrich our historical approach to this suffering.

Human know-ledge regarding this disease has advanced slow and even now



Figure 1. Margaret Mead



Figure 2. Jaw (century V BC) with four natural teeth in which were included two artificial interrelated teeth (Musie du Louvre, Paris)

we can not say that we know everything. A Renaissance Polimath - Pico dela Mirandola - boasted that "I know all that is in the universe." Ironically, of its kind, a man of the same quality - "homo universalis" - namely François-Marie Arouet called Voltaire (fig. 3), dead due to uremic syndrome, perhaps lithiasic cause, on May 30, 1778, aged 83, added "And, of course, still something in plus ..."

Antiquity based knowledge

Apparently Ancient Egypt has revealed all its medicine enigmas. With the medical papyri, ancient historians stories, radioisotope studies of mummies and various kinds of artistic representations decryption as sources of information it is believed now that we know almost everything about a civilization which is extinct by the year 1000 BC. Ch.

Yet we ask ourselves : "Do we know everything about anything?" When we hear, for example, from the guides that the city of Ephesus in Turkey now, a jewel of the Hellenistic period - obviously post - Egyptian - is revealed and decrypted only in proportion of 10%? That means that we really know everything?

Hippocrates of Cos (460 BC - the time of death is not known, had lived 80 years, 109 years after others) (fig. 4) is now, after millennia, the symbol of thoughtful medicine



Figure 3. François-Marie Arouet also known as Voltaire

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and a clear example of our ignorance.

Hippocrates, son of Heraklides an asklepiad doctor, practiced medicine in his youth and adulthood in island of Cos in central Greece - in the plain of Thessaly. His merits are enormous: he stated that medical art has nothing to do with religion. He defined numerous diseases. Much later in the mid twentieth century, people have learned that a disease definition should refer to "proximate genus and specific difference", so thought Hippocrates.

He postulated his own theory on "the formation of kidney stones," almost identical to the one emitted by Paracelsus. He had also contemporary fellows - Chrysisos of Cnidos, confused at a time with him, and proselytes: Praxagoras (all from Cos island) and Herophilus of Chalcedon - the greatest anatomist of the ancient world, which imposed dissection as public spectacle in Alexandria and which we, urologists, we owe the denomination of a small organ: prostate (from Greek pro-histani: an organ placed in front of another organ).

Middle ages and renaissance

The kidney, as organ of study, concerned the activity of many anatomists of the Renaissance. However, the kidney, was despised and qualified as "a meat organ wich produces urine" [5]. It had to appear the famous florentine Lorenzo Bellini (1643-1704) (fig. 5), that reevaluated correctly the kidney, stating that it is a "very complex organ wich plays a major role for life" [L. Bellini, *Exercitatio anatomical structuris et usu renum*, Firenze, 1662]. Bellini injected colored substances into the renal veins, making interesting remarks between the relationship of urinary and venous circulation. No wonder renal collecting tubules bears his name! These tubules open through 15-20 holes in the renal papillae.

Bertin columns leave from the cortical area between Malpighi pyramids. Three hundred small pyramids called Ferrein pyramids form one Malpighi great pyramid.

We do this fully understood anatomical short trip only to introduce the famous Marcello Malpighi (1628-1694) (fig. 6). He was an italian biologist and physician, worked at the universities of Bologna,

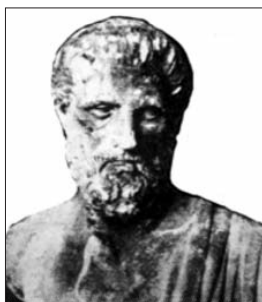


Figure 4. Hippocrates of Cos

Pisa and Messina and had a large influence on his future descendants - Francois Xavier Bichat and Camillo Marie Golgi. Disagreeing with the assertions of Aristotle and Galen he had to suffer, this explaining that he had to act, being chased at three major universities, but to his credit he has not abdicated his beliefs, brilliantly combining anatomical study with microscopic observation. His contribution to the anatomical knowledge is prodigious, the renal glomeruli and pyramids bear his name and he also discovered the physiological connection between renal tubules and capillaries.

Pierre Franco (approx. 1500 to 1570) (fig. 7) wrote in 1561 a "Traite de la chirurgie" and inserted as a visionary, the so-called "suprapubic cystostomy" (suprapubic "taglia" or high "taglia"), a remarkable thing to keep in mind, without forgetting the possible secondary intraoperative complications: opening the peritoneum, lesions of the bowel, etc.

Renal lithiasis in the XIX and XX centuries

The nineteenth century begins with a resuscitation of the surgical thinking, practically a metamorphosis and a rethinking of the art of surgery. Experimental surgery appears, topographical anatomy gains momentum and this leads to the birth of new surgical specialties.

It is time to remember the famous Sir Henry Thompson, 1st Baronet (6.08.1820-18.04.1904) (fig. 8) famous surgeon and erudite, a pupil of Jean Civiale, specialized in genitourinary surgery and especially bladder surgery. He has successfully treated Kings Leopold I of Belgium bladder stones, but was unlucky in what concerns the fate of the great protector of Romanians, Emperor Napoleon III, who died after two attempts of „blind” bladder lithotripsy in situ, complicated with uremic syndrome and urosepsis [3] (fig. 9).



Figure 6. Marcello Malpighi



Figure 5. Lorenzo Bellini



Figure 7. Pierre Franco

It seems that Gustave Simon (1824-1876) performed in 1869 the first nephrectomy for morphologically destroyed lithiasic kidney[4].

Jean Casimir Felix Guyon (07/21/1831, Saint Denis, Reunion Island - 08/02/1920, Paris) (**fig. 10**) is the founder of the French urological surgery, also the "godfather" of Romanian urology. The first "urinary tract clinic", begins to exist under his leadership in 1907 at Necker Hospital in Paris, therefore giving birth to the first French dedicated urology clinic. In 1909 he visits the Romanian Principalities (Romania as we know was not yet born) giving his "blessing" that the future Professor dr. Petre Herescu (**fig. 11**), his former student [7], to open the first dedicated urology clinic on October 14 1909, "Genitourinary studies circle" at Colăea Hospital, date which is considered to be the foundation day of urology in Romania.

Certainly Professor Felix Guyon was proud of his pupil achievement, which unfortunately left too early (1915) this world.

Felix Guyon, son of a Navy surgeon and grandson of Navy chief pharmacist, was intern and extern of the Medicine Faculty of Paris, where he had well-known teachers such as: Joseph Francois Malgaigne and Alfred Velpeau. At the age of 31 becomes "des hospitaux" surgeon, after being prosector, especially regarding prostate pathology, bladder tumors and lithiasic pathology (that was customary!). At the age of 45 he became professor taking over the external Pathology Department at Necker Hospital, where he founded the Department of Urology and founded two prestigious magazines "Annales des maladies des organes genito-urinaires" and "Journal d'Urology medicale et chirurgicale". In 1878 he was appointed as a member of the Academy of Medicine, which he also chaired in 1901, and from 1892 he was also a member of the Academy of Sciences.

Many of the tools still used today, as well as many semiological elements, "purely urological", are due to him, for example the „Guyon syringe”, which is a volume syringe (up to 150 ml) used for bladder instillation, the „Guyon sign” of kidney tumors, as well as the „three glasses sample of Guyon” encountered in the case of hematuria.

It is worth mentioning a fact unknown to many: Felix Guyon's father had Caucasian origins, and his mother - Rose Delp was Creole.

His successor at the Department of Urology was the cuban Joaquin Albarran, creole Cuban. So, among the founding fathers of modern urology were two surgeons with creole origins! Interesting coincidence!



Figure 8. Sir Henry Thompson I



Figure 9.



Figure 10. Jean Casimir Felix Guyon



Figure 11. Petre Herescu

But who was Joaquin Maria Albarran y Dominguez (09.05.1860 - 17.01.1912) (**fig. 12**)? He was a French urologist born in Cuba, in the town Sagua la Grande. After studying medicine in Havana and Barcelona, he arrives in Paris where, together with Louis Antoine Ranvier, studies histology (hence his inclination towards the study of interstitial lithiasic nephritis; eventually everything has an explanation!) and becomes intern of his severe ancestor, Professor Guyon, which has a great influence on his career. In 1892 he is appointed associate professor (similar to Lecturer) and two years later "des hospitaux" surgeon.

In 1906 he succeeded Guyon, at the same Necker hospital. He owns the fatherhood of the first prostatectomy performed in France, as well as the introduction of revolutionary inventions like „Albarrans Stair" to the cystoscope - without whom the ureteral catheterization was illusory until then, the Albarran sign in urothelial basinetal cancer and the Albarran - Ormond syndrome encountered in idiopathic retro-



Figure 12. Joaquin Maria Albarran y Dominguez

peritoneal fibrosis. It is regrettable that urologists today know only the name of the second.

He died prematurely in 1912, the year of his nomination for the Nobel Prize for medicine, apparently having a slightly deviant behavior in his later years and taking some controversial urological judgments that raised questions for his confreres.

Once in the XX century, the urinary stones diagnosis and treatment approach suffer profound changes. It appears basically a „select club" of surgeons and urologists with appetite for new and for research, which have only one goal: to improve the approach to this ubiquitously plague - "kidney stone".

Urinary lithiasis at the crossroads of the millennia

It should be mentioned, however, Hugh Hampton Young's name (1870-1945) (fig. 13) who, in 1912, having access to a pediatric 9.5 Ch cystoscope and to a patient with bilateral ureterohydronephrosis consecutive to congenital urethral valves, dared to ascend for the first time the dilated ureter.

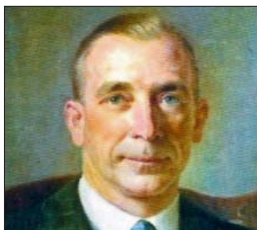


Figure 13. Hugh Hampton Young

The retrograde „ureteroscopic excursion", for diagnostic and therapeutic purpose, would not have been able to be feasible without the contribution of John Tyndall (1820-1893) (fig. 14).

In 1854, in London, Tyndall demonstrated the possibility of guiding light through a curved jet of liquid, thus describing "the phenomenon of total internal reflection". It had to pass almost a hundred years before, in 1960, Hopkins discovered the cylindrical lens system which had significantly improved ureteroscopic brightness and visibility. In 1964, V.F. Marshal, reported the first flexible ureteroscopy with a 9 Ch ureteroscope.

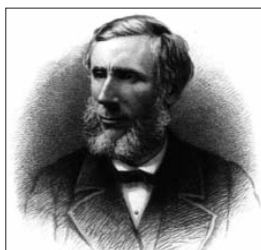


Figure 14. John Tyndall

This was the beginning: that which is historically recorded and happened next, seems to be related to science fiction:

- 1981 - Das: extracts for the first time in history an ureteral calculus under ureteroscopic control;
- 1983 - Huffman: the first ultrasonic ureteroscopy lithotripsy;
- 1984 Watson: used laser pulsed-dye;
- 1987 - Bagley, Huffman and Lyon: first use of a flexible ureteroscope;
- 1992 - Johnsson: used in ureteroscopy the Ho-YAG laser;

- 2006 - ACMI "launches" the first digital flexible ureteroscope (ACMI - DUR-D);

Another absolutely fabulous chapter of urinary lithiasis relates to solving the kidney stones through percutaneous approach: percutaneous nephrolithotomy (PCNL).

It is appropriate to make a quote one of the best known and most distinguished Americans of the twentieth century, General George S. Patton, once said, in his absolutely unmistakable manner: "the only purpose of war is to kill the other bastard"! Surely that regarding urinary lithiasis and its treatment, many urologists have shared the same feelings when they have resorted to PCNL. Kidney stones should be treated in the Patton manner!

Professor Willard E. Goodwin (1915-1998) (fig. 15) surgeon at UCLA (University of California - Los Angeles) starting in 1951, realized and published in 1955 the first percutaneous pielostomy for extrasinusal and hydro-nephrotic renal pelvis [10].



Figure 15. Willard E. Goodwin

Dr. Willard E. Goodwin was a visionary not only regarding the treatment of urinary lithiasis. He imagined the radionuclear scan of the kidney, he used corticosteroid in kidney transplant support and, besides the first percutaneous pielostomy, he used small intestine in urinary tract reconstruction. It was actually a pioneering era.

His followers, Fernstrom and Johanson, extracted a kidney stone in 1975, with the help of a nephroscope - basically an endoscope - inserted into the kidney through a preformed path [10].

The end

History as such, as well as the history of any occupation, is very tangled. I wrote from the beginning with this consideration in mind. Trying to unravel the becoming and the knowledge regarding one chapter of urologic pathology is certainly more difficult.

I wrote it another time - from history, unfortunately nobody learns anything! - probably because this science is based on some specific methods and of precepts, which are sometimes slightly rigid. We should not forget, however, that always searching the "new", old paradigms should not be neglected because, isn't it so? , the heraclitian "Panta Rhei" (meaning "everything flows") can be annotated and completed by the words of George Călinescu in its absolutely unmistakable own way: "nothing new under the sun and if you think you have found something new, you may notice that someone has said it before."

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11. Evident că un rol important în informarea istorică au avut site-urile [www. google](http://www.google) și www.wikipedia.