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HISTORY OF ONCOLOGY

Errors and difficulties in the diagnosis of bladder cancer in the 19th century: about an uncommon case reported by Professor Claude-François Lallemand (1790-1854)

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Summary

Before the official foundation of the specialty of urology in 1870 from Félix Guyon, its exercise was in the hands of general surgeons. One of the most distinguished surgeons interested in urology was Claude-François Lallemand, Professor of Surgery in Montpellier. Despite his enormous experience in the diagnosis and treatment of urinary tract diseases as well as the invention of various surgical instruments for the lower urinary system, Lallemand, however, did not avoid serious diagnostic errors because of the lack of diagnostic tools. Characteristically in the present article we present a serious diagnostic mistake in a patient with bladder cancer with fatal outcome.

Key words: bladder cancer, caustic applicator, Claude - François Lallemand, diagnostic error, print carrier

Lallemand's life and carrier

Son of Louis Joseph Lallemand, mirror manufacturer, and of Suzanne Elisabeth Grandidier, Claude François was born in Metz on January 16, 1790 (Photo 1). At first he took up lessons in surgery at the lecture hall of Metz hospital from where he graduated with the degree of warrant medical surgeon. He stayed in several French and Spanish garrisons until he left the army for health reasons. Guided by Dupuytren, he studied medicine and obtained the doctor's degree in Paris, on January 20, 1818 [1]. As the chair of external clinic of Montpelier's Faculty of Medicine remained vacant after the death of Antoine Louis Montabré, he was appointed by Paris as Professor without competition from October 21, 1819. He was in opposition with Claude Jacques Matthieu Delpech (1777-1832) whose audacious methods he rejected, observing a great precaution in his operating techniques. On the other hand, after the death of his colleague he would be more risky [2]. His great clinical sense was highly regarded by everyone. He was even brought up to the deanery in 1831 but for a little while because his character did not predispose him to these functions. Lallemand had a severe conflict with the administration of the Saint Éloi Hospital and he carried it out honorably thanks to the intercession of the Montpelier's Bishop. Afterwards, he had the honor to treat Ibra-

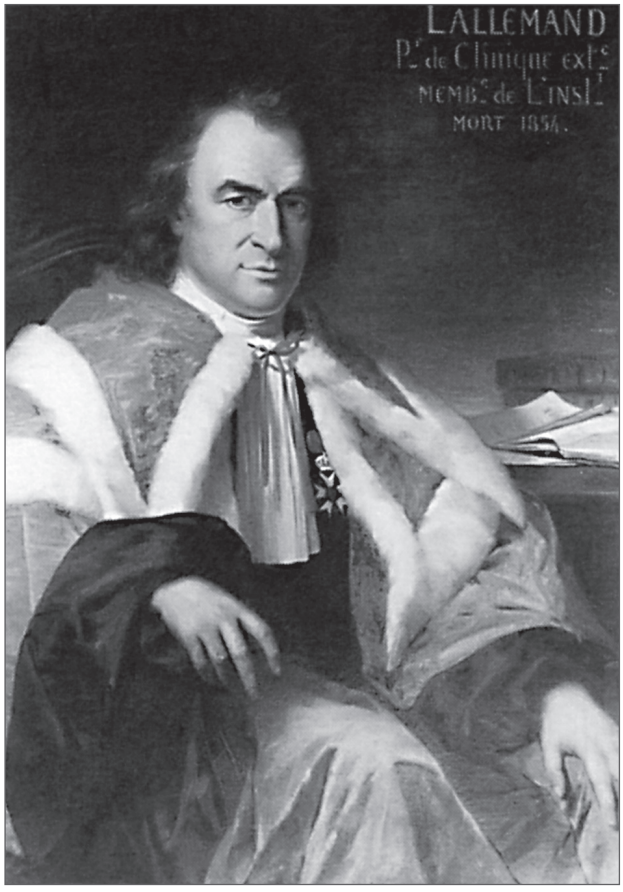


Photo 1. Professor Claude François Lallemand (1790-1854).

him Pacha, sent in Montpelier on the advice of Clot Bey. The son of Mohamed Ali recovered after a treatment to Vernet Baths and Lallemand was received in Cairo with the biggest honors.

Lallemand, however, had always dreamed to join the Academy of Sciences, what required his installation in Paris. To realize it, he resigned from his university functions in 1845 and at the same time he was admitted in the Institut de France (Academie des Sciences). As the climate of Paris was opposite to him, he had to decide to return in the South, in Marseille this time, when he died on July 23, 1854 [3].

His work is very important, especially in the cerebral and nervous diseases, for the study of which Lallemand did numerous autopsies. He also studied the urogenital tract, particularly spermatorrhea. He created several operating techniques and surgical instruments [4].

Lallemand, a great forerunner of urology

1) He was the first to adopt the medio-bilateral approach to the perineal lithotomy.

2) He adopted the *porte empreinte* (print carrier), which was designed by Théodore Ducamp (1793-1823) in 1822 to make a cast of the obstructed part of the urethra (Photo 2). The mold consisted of a bundle of silk threads impregnated with a special wax. This was attached to the end of a catheter and pressed against the stricture.

Photo 2. Théodore Ducamp (1793-1823).

3) In 1834 he asserted that plastic exudates caused swelling of the tissues in the form of a collar which was the basis of strictures of the urethra.

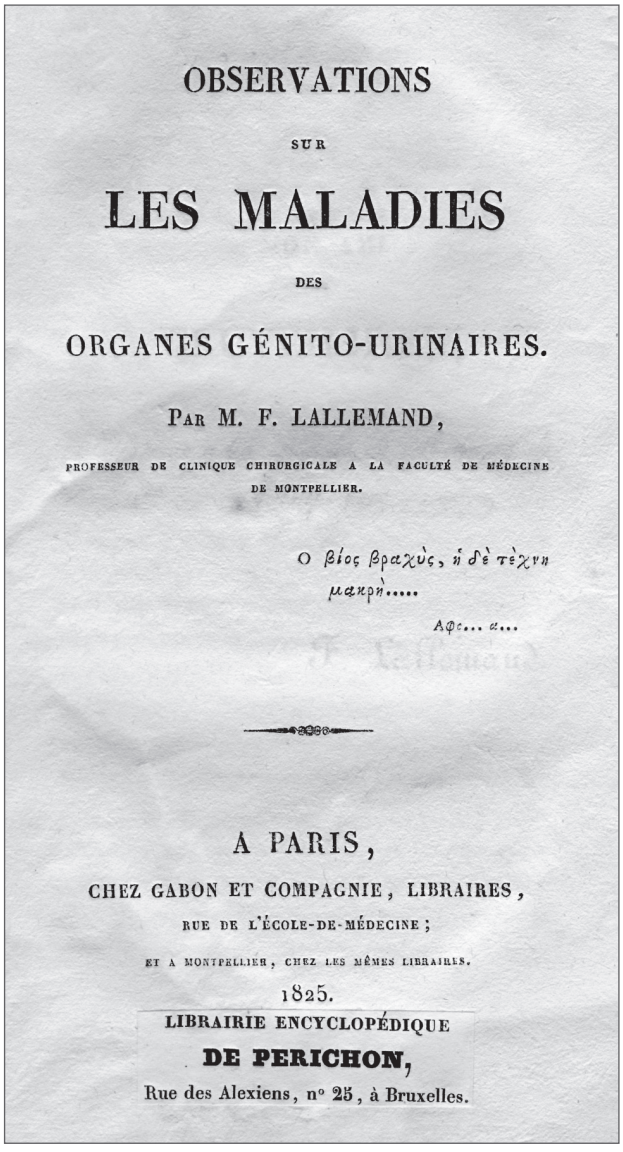
4) He modified Ducamp's *porte caustique* (caustic applicator) to allow it to be used in the curved portion of the urethra. A platinum tube was introduced as far as the stricture, and then the stylet carrying the caustic was inserted, rotated and withdrawn one minute later. This instrument enjoyed a great vogue for many years and was used to treat strictures, ulcers and it was applied to the verumontanum for the treatment of spermatorrhea, a condition which Lallemand overdiagnosed and overtreated [5].

5) He attributed the involuntary seminal losses to an irritated state of the mucous membrane of the posterior urethra and recommended the cauterization of the prostatic mucosa by silver nitrate and a caustic applicator [6].

A case of a bladder cancer misdiagnosis

In his work, Lallemand reports an uncommon case of bladder cancer that he was called to treat. Characteristically, in his book entitled "Observations sur les maladies des organes génito-urinaires" (Photo 3), he narrates: "A trader of Hamburg, born of a father who died from a chronic catarrh of the bladder, having a sister affected by the same disease, he contracted at the age of 25 a discharge that was treated as gonorrhea, and disappeared after few months. Since then he had difficulty in urination, several urinary retentions and he was catheterized. After 4 years of unsuccessful treatments, he came to Montpelier and he was again easily catheterized.

A severe diet, administration of balsamic preparations, emollient or sedative enemas, milk diet, frequent application of a small number of leeches, had improved so much his state that he spoke about wedding projects, when suddenly he had a relapse attributed to a dietary lapse. Since this moment he declined from day to day, he was urinating with the biggest difficulty, threatened with a complete retention. It is in this state that I was called in consultation towards the end of 1823, 6 years after the appearance of the discharge. I found the patient cachectic, urinating in effort and by little and having a spasmodic contraction of all the muscles of the body. These efforts had eventually produced two inguinal hernias. Urine was turbid, sanguineous, fall almost drop by drop, exhaling a smell of putrefaction; passing through the duct it produced a severe, prolonged pain. The external and internal parts of the rectum were covered by volumi-



OBSERVATIONS

SUR

LES MALADIES

DES

ORGANES GÉNITO-URINAIRES.

PAR M. F. LALLEMAND,

PROFESSEUR DE CLINIQUE CHIRURGICALE A LA FACULTÉ DE MÉDECINE DE MONTPELLIER.

Ο βίος βραχὺς, ἡ δὲ τέχνη μακρὴ.....

Αφ... α...

A PARIS,

CHEZ GABON ET COMPAGNIE, LIBRAIRES,

RUE DE L'ÉCOLE-DE-MÉDECINE;

ET A MONTPELLIER, CHEZ LES MÊMES LIBRAIRES.

1825.

LIBRAIRIE ENCYCLOPÉDIQUE

DE PERICHON,

Rue des Alexiens, n° 25, à Bruxelles.

Photo 3. Frontispice of Lallemand's book entitled "Observations sur les maladies des organes génito-urinaires".

nous hemorrhoids. A small caliber catheter stopped just a little beyond the curve of the duct, leaving us no doubt on the existence of a stricture produced by an old gonorrhea, considering it as the cause of all his troubles. I had just read the work of Ducamp; I proposed his method, and I would use it in cooperation with the patient's attending physician. The next day, I wanted to use a print carrier for the stricture but the instrument stopped at 7 inches and went out quite deformed; the wax was flattened in the form of bludgeon, slicked with the catheter… a third attempt gave me, finally, a very fine and very short sample. As the patient was suffering a lot and had lost some blood, I decided to stop the procedure.

Examining the region through the rectum, I recognized behind the end of the silver catheter that was filling the free part of the duct, a hardness which appeared to me of a hazelnut size and in 1.5 inch farther a tumor of the thickness of a fist. I remembered then some cases of complicated prostatic strictures, so well-treated by Ducamp. However, trying in vain, for several days, to insert a catheter through the obstacle, I decided to cauterize in front and behind, using a candle filled with silver nitrate, conducted by an ordinary silver catheter opened to its extremity.

The next day the urination became more painful and more difficult. At the end of the week I used again the print carrier without result, the wax was very deformed. Then, I tried a silver catheter no.8 and, to my greatest surprise, I got through the stricture easily but as I believed to enter the bladder I was stopped approximately 2 inches farther. I tried unsuccessfully silver or rubber catheters of all sizes and curves; always I was reaching easily the neck of the bladder, without being able to penetrate it.

Urination became more and more difficult; finally, a complete retention occurred. Twenty-four hours later the bladder was projecting out over the pubis; the fever was continuous, the perspiration urinous; the patient was suffering the most intense pains; there was no more a moment to be lost, it was necessary to drain the bladder or to penetrate through the prostate, risking of a false way. A second attempt took place: reaching the neck of the bladder with a conical catheter, the point was directed by the indicator finger introduced into the rectum; I penetrated without resistance, as I believed to have followed the urethral duct. The biggest amount of the urine which went out at first was transparent, although hardly colored and with a very pronounced smell of ammonia; the patient was immediately relieved and we were optimists. The following day, I replaced the silver catheter by an elastic-gum one. Two days after, I inserted easily a bigger catheter but the next week an abscess was formed in the front of the scrotum. We started a treatment with leeches, cataplasms, warm baths and enemas. At the end of the 5th day I opened it but the patient was not relieved. The presence of the catheter disturbed him as it was often blocked by blood clots. I decided to remove it and to repeat the catheterization 5-6 times a day: always the catheter was easily inserted but the urine was bloody and the fever reappeared; the patient was completely exhausted, in a delirious state with spasmodic symptoms and he finally died" [7].

Autopsy report

"The skull was not opened. The mucous membrane of the stomach and intestines was hyperemic, having intervals of black gangrenous-like patches. Left kid-

ney healthy, right kidney of a double volume, deformed, irregular, whitish and soft, easily detached, containing around 30 separate abscesses of different volumes; some opened in the renal pelvis and others, full of pus, being together; others finally, in an suppuration state whose pus has infiltrated the renal parenchyma; same side ureter thick, blackish, without consistency. Large-sized bladder with thick walls, mucous membrane red, rough and dense. From the neck of the bladder, presence of a schirrous, lard-like substance that alters the membrane, 2 inches of thickness, extending behind the prostate, funnel-shaped, measuring 3 or 4 inches; internal surface of the bladder irregular, presenting cauliflower- vegetations; prostatic portion of the urethra with the same cancerous change, appearing to extent 4 inches, due to partial obstruction of the bladder by the cancerous tumor. By the middle of this long duct and at the top, a false opening produced by the conical catheter and maintained by the elastic catheters was ending in the bladder, through the carcinoma, just an inch below the real opening. A perfectly healthy, small, firm prostate, flattened and attached on the bladder's tumor but mobile and isolated by a very flexible cellular tissue. Behind the bulb of the urethra, a cancerous tumor of a hazelnut size, occupying the inferior part of the duct; corresponding mucous membrane brownish and thick, destroyed probably by the cauterization. Walls of the scrotal abscess that was converted into a fistula opened in one part, 3 inches in front of the tumor and in the other part close to the gland. Haemorrhoidal and vesical vessels very well developed.

I) I mentioned here this observation, because the patient is the first one that I treated by the Ducamp's method; but we believe that a so exceptional case cannot give place in any thoughts concerning the use of caustic applicator and print carrier.

II) Cancer of the bladder is extremely rare in men. Chopart reports only an example and Desault another one; Soemmerring even seems to deny its existence. "As for the diseases named schirrous by the authors and the cancer of the bladder", he says, "I saw them only in the womb but I never observed them in men, unless considering some, like Mr Nauche, as ulcers, overgrowths, or thickening of the bladder".

III) The observation of Chopart was similar with the one that we are going to read. "The patient had several attacks of gonorrhea; we attribute the dysuria to the urethral stricture. He was using print carriers that penetrated easily up to the bladder and did not give a difficulty in urination; recognizing that the urethra was healthy, we did not use anything more than diuretics, baths, etc. The difficulty in urination increased; he was complaining about a sensation of heaviness during urination; sometimes he was seeing blood in the urine, another time the color of the urine was yellow and very fetid; finally, he had a complete urinary retention that obliged him to be catheterized. We had difficulty to insert the catheter into the bladder and a lot of blood flowed; he was relieved by the evacuation of the remaining urine but soon the pain, which we attributed only to the retention of the urine, became stronger. As it was felt mainly towards the end of the rectum, it appeared to be provoked by the haemorrhoids. He could not keep the catheter in the bladder and whenever we catheterized him more or less of blood went out. In the end he had a slow-progressive fever, continuous tenesmus, and convulsive movements in the lower extremities. The proliferation and thickness of the haemorrhoids did not permit the introduction of the finger into the rectum. The patient died in a delirious state". Before the autopsy we had not the slightest idea about the nature of the disease. It consisted of a cancerous tumor, of a big apple size, arising from the neck of the bladder, soft and fungus-like on the top, having a hard base.

IV) In the reported case by Desault, the surgeons who catheterized the patient believed they recognize a stone, because the tumor of the bladder as it was hard provoked to the patient a foreign body sensation. But "the patient informs Desault that he feels in the bladder's region a fixed and stabbing pain, his urine is mixed with blood, he experiences an uncomfortable itch in the penile region and from time to time he observes going out from the urethra portions of putrefied clots. This last condition is decisive as it indicates the nature of the disease" [8].

Desault's prognosis did not delay to become true. "The patient dies in marasmus and suffering by horrible pains. The autopsy showed that the tumor, bigger than both fists, originated in the neck of a distended bladder: its nature was the same of all the others carcinomas" [9].

V) The shooting pains behind the pubic area and the emission of putrefied clots appear to be the only symptoms which can make us to suspect a cancer of the bladder. The blood may come from kidneys, from the mucous membrane or from the prostate. How do not take for a swelling of this gland the tumor that we palpate through the rectum. How do not attribute to this the difficulty in the introduction of the catheter. The foul smell of the urine, the rapid decomposition, the turbid aspect, meet in all severe affections of kidneys, bladder and prostate.

VI) As for the obstruction of the urethral duct by a cancerous tumor situated on its route, I do not see how we could avoid taking this obstacle for a real stricture, especially if the patient had contracted a discharge and had been treated for gonorrhea.

VII) It is very likely that the affection to which the father of our patient succumbed, and the one by which his sister is tormented, are not chronic catarrhs of the bladder, as his doctor of Hamburg said in the consultation.

VIII) We could believe that the abscess developed in the duct was produced by a false road or by cauterization; but, if we consider that it was more than 3 inches away from the obstacle and that it appeared only after the prolonged remaining of voluminous catheters, we will attribute it, doubtless, to the presence of these last ones.

IX) Something that seems difficult to be realized at first sight, it is that after a single cauterization I succeeded in overcoming the obstacle with a rather big catheter; but the tumor was not obstructing the duct in a circular way, it was repulsing the mucous membrane only in a sense; it was easily detached by the catheter, without being affected by the cauterization. We shall observe something similar in certain cases of well-defined hardness of the duct.

A little time after this first and unfortunate attempt of Ducamp's method, I met a patient to whom I was obliged to renounce the caustic methods of the author in order to destroy a stricture situated 6¾ inches from the urethral orifice. The details that the patient gave me for the writing of his observation are written with so much care and truth, that I believe to preserve them such as they are, by cutting off what concerns only me" [10].

Conclusion

The analytic presentation of a peculiar case of diagnostic mistake concerning a particularly big and extensive neoplasm of the lower urinary system in which is involved Professor Claude-François Lallemand, one of the greater masters of surgery, interested in the urogenital tract diseases (since the birth of the specialty of urology is dated from 1870), shows us the enormous difficulties that existed during the 19th century in the diagnosis of the internal organs' diseases and, in our case, the urinary tract cancer. These insurmountable obstacles in the diagnosis of urinary bladder cancer are also proved by the erroneous statement of Lallemand about the exceptional rarity of bladder cancer in men.

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