LESSON LXVII.

DIGITAL EXPLORATION OF THE BLADDER, BY MEANS OF AN INCISION THROUGH THE PERINEUM AS AN AID TO DIAGNOSIS.

Digital exploration of the bladder, as an aid to diagnosis in obscure cases, recently brought to notice by Sir H. Thompson—The operation not a new one—Reference to cases in the author's experience in support of this statement—Recent discussion of the subject in the Royal Medico-Chirurgical Society of London—No mention made of the possible influence of reflex irritation in producing symptoms simulating encysted stone and other obscure bladder troubles—Source of such irritation frequently referable to disease of the spine, kidneys, urethra, rectum. Clinical case illustrative of its source in the kidney—Another case in proof of same—Clinical case, showing that enlargement of the prostate sometimes exists without the usual prominence in the rectum—Exploratory perineal incision performed—Unfavorable results.

This subject has been recently brought into a deserved prominence through reports of cases, and a discussion of its advantages by Sir Henry Thompson. In his paper before the Royal Medical and Chirurgical Society of London, Jan. 23d, 1883, this procedure is spoken of as "*a new method of investigating obscure diseases of the bladder*." It is certainly not new in America. The case of obscure difficulty of the bladder related at the beginning of the lesson on persistent spasm of the bladder, is sufficient evidence that it was appreciated here at least ten years previous, and even then it was not new. In that case, it was proposed by me for the purpose of aiding in diagnosis, and after, as was believed, thoroughly exhausting all other means of diagnosis, it was concurred in by all four of the surgeons connected with the case, all of whom were public teachers of Surgery, and three of them occupied the chair of Genito-Urinary Surgery in different colleges in New York. It was not then proposed or considered as a novelty. Case II. was the subject of perineal incision for purposes of diagnosis, operated upon by me march 10th, 1882,

and an encysted stone discovered in this way and removed. This case was published in the *New York Medical Gazette* of April 8th, 1882.

Sir Henry Thompson's first paper on this subject was published in the *London Lancet*, May 6th, 1882, and included directions for the performance of the operation of digital exploration of the bladder through incision of the urethra, thus: "I always adopt the central incision, using a median grooved staff, and a long, straight, narrow-bladed knife with the back blunt to the point. Having placed the left index finger in the rectum, the knife may be introduced, edge upwards, about three quarters of an inch above the anus, with or without a small preliminary incision of the skin, (I prefer the former) until the point reaches the staff, about the apex of the prostrate gland, where it divides the urethra for half an inch or so, and is then drawn out, cutting upwards a little in the act, but so as to avoid any material division of the bulb. The left index finger is now removed from the rectum, and following, by the groove of the staff, slowly passes through the neck of the bladder, as the staff is withdrawn, thus . . . . when the exploration is made as described above, thus. . . .

"Taking it for granted that the incisions be made, which involve only the urethra and not at all the bladder and prostrate, enable the operator to place the last joint of his index finger within the neck and thus to draw it somewhat towards him, the exploration may be made in the following manner.

"Maintaining his finger at the spot described, the operator should stand up at the foot of the table, a little to the left of the patient (who is at the lithotomy position), so as to make firm pressure, with the right hand above the pubes, the resistance of the abdominal muscles being overcome by the ether. He may now easily feel, unless the patient be very stout, the opposite side of the bladder coming into contact with the tip of his finger, and by concerted movements of supra-public pressure with the right hand, with slight movements of the left index finger in the bladder, almost every portion of the internal coat of the latter may be brought under examination. If the patient be thin, the proceeding is easy; it becomes less so, in proportion to the depth of the perineum and thickenings of the supra-pubic coverings, both of which are increased by fat. In the latter case, aid may be rendered by an assistant, who makes firm pressure with both hands; but the operator should also employ, if he can, the concerted movements described."

To Sir Henry, however, should certainly be credited the first description of a systematic and thorough application of the conjoined touch, for physical examination of the bladder, by means of one finger introduced through an incision in the perineal urethra and pressure over the pubis with the disengaged hand of the operator, or both hands of an assistant. In each one of my operations, a similar, but less thorough procedure was adopted, although no mention was made of this in the report of these cases. In the same manner, the conjoined touch has for many years been employed by me in examination of the prostate and bladder, through the rectum, in the position described on page 405 of a preceding lesson.

The prominence given to this matter by presenting it as a new procedure appears to me to favor the trial of it by surgeons not aware that it has long been considered a *dernier resort* by surgeons experienced in genito-urinary diseases, and this before due consideration has been had for measures greatly less perilous in a surgical point of view, and shown to be possibly efficient in clearing up a diagnosis in cases which would otherwise have been considered suitable ones for the exploratory operation through the perineum. The fact that no irritations proceeding from disease of the spine, disease of the kidney, disease of the rectum, or from urethral contractions, either by Sir Henry Thompson in his different papers and reports of cases, nor by any of the distinguished surgeons who discussed the question in the meeting of the Royal Medico-Chirurgical Society, would leave it to be inferred that the operation of cutting into the bladder through the perineum, for diagnostic purposes, had been frequently done without knowledge of the fact, that

cases presenting all the symptoms of tumor of the bladder, and of stone in the bladder, as well as of deep urethral stricture, may be and are quite likely to be dependent upon irritation reflected from the various above-mentioned points, and in an especial manner from the urethra, and which, in the latter case, might promptly disappear on restoration of the urethra to its normal calibre. Reflex irritations, having their origin in a diseased kidney, not differing in the symptoms produced from encysted stone or tumor of the bladder, are by no means rare. Within a year I have operated on such a case by perineal incision. Symptoms of stone had been present for nearly two years previous. The most careful and often repeated explorations for stone had failed to detect anything abnormal in the bladder, and yet there was frequent urination, with spasm at the end of the act; pain in the glans penis; occasional bloody urine and chronic vesical catarrh; all symptoms aggravated by motion, especially by riding in a cart. The man appeared in florid health for a full year and a half, and then depreciated, apparently from loss of rest and suffering caused by spasm of the bladder, which occurred every few minutes night and day. His urethra had been contracted congenitally at the orifice. This was restored to a normal condition by division, and a full-sized instrument passed throughout the entire canal, early in my care of the case, but with slight apparent benefit. Finally, I made the exploratory incision through the perineum, and examined the bladder with my finger. Nothing was found in the bladder to explain the source of the spasm and other symptoms of stone.

The operation gave temporary relief to the spasm, but death occurred from exhaustion through the progress of the disease. The post-mortem examination, which was made by Dr. Peabody, Pathologist of the N. Y. Hospital, failed to discover any condition of the bladder which could account for the troubles so long endured. *The kidneys were filled with tuberculous deposit.* There was no evidence of disease at any other point.

Again, within the last month, the exploratory perineal incision was made in a case which for several years had presented symptoms of stone in the bladder, viz., frequent painful urination, vesical catarrh. Trouble aggravated by riding or any jarring motion; pain at such time referred especially to a point on the right side of the vesical neck. This was very marked when stepping off from a chair. Several surgeons, who had had him in charge, favored the idea of encysted stone, as a probable cause of the difficulty. This was my own opinion when three months since I first examined the case. Repeated careful exploration for stone gave only negative results; after careful consideration, and finding no source of possible reflex trouble in the urethra, and failing to obtain any evidence of disease of the kidneys, or spine or rectum, I proposed the exploratory operation. Dr. Edward L. Keyes was then called in consultation, in the course of which an examination was conducted with great care by sounds, and through the rectum and abdomen by the conjoined touch. Nothing abnormal was discovered, except a tender point corresponding to the vesical orifice of the right uretur, just the point to which the patient had referred his chief pain when jolted in any way. This was distinctly made out by means of a finger in the rectum and pressure with the opposite hand over the pubis, the position of the patient being that described on page 405.

A series of analyses of the urine was then suggested, before and after exercise, and also subsequent to a rest of several days in bed. After some two months of observation of the case, finding no evidence of disease of the kidney, and finding also that exercise always increased the amount of pus in the urine and that pain and pus were distinctly lessened by rest on the back, and that the tenderness at the mouth of the right ureter persisted; and moreover, that the difficulty was now so great that the patient could no longer attend to his business, though he was otherwise apparently in good health, Dr. Keyes coincided with me fully in the opinion that the exploratory perineal incision was now desirable. Just at this time the urine presented for the first, a very few hyaline casts. Believing, however, that under existing symptoms this was but an evidence of increasing trouble from the bladder irritation, the operation was performed. The result of the exploration through the perineal incision was absolutely negative. Both Dr. Keyes and myself made the most careful exploration of the bladder and especially of the point where pain had been previously complained of. Nothing in the least degree abnormal was detected, excepting perhaps some peculiar thickening of the bladder wall anteriorly near the neck. Nothing was found at point of previous tenderness. The operation gave relief to the spasm as long as the urine was passed through the wound, but whenever any passed through the urethra, a severe vesical tenesmus resulted. Unfortunately, a tube into the bladder through the wound required removal on the fourth day on account of irritation evidently caused by it. The wound (May 28th, thirteen days from date of operation), remained pervious. If the patient was careful not to strain, the urine flowed through the wound, and he was comparatively free from pain, free from fever, and gaining strength. What the final effect of the operation may be, it is difficult to state, but the prospect is not flattering, especially as now, nearly two weeks since the operation, granular casts are becoming frequent in the specimens of urine examined.

The probabilities in this case appear to be that the bladder trouble is mainly, if not purely, of reflex origin, and that the kidney is in some way the source of the trouble.

Not only may the bladder trouble be found in many cases to be due to reflex irritation from some point in the kidney, urethra, the rectum or the spine, it may also be the result of enlargement of the prostate, this last even giving no positive result through a rectal examination, or through the urethra, and completely simulating an encysted stone or a tumor, or even a moveable polypoid growth within the bladder, as in the following case:

Patrick Costigan; Charity Hospital, admitted December 2d, 1882; first difficulty, a retention of urine occurring suddenly, about three years before, after a drinking bout; he was relieved by catheter. No further trouble until July, 1882, when he noticed that occasionally, during urination, his stream would be suddenly arrested, but without pain, and after a few minutes, would again flow. This difficulty continued and increased. He described the sensation to be as if a foreign body was floating about in his bladder, and when he attempted to urinate this would suddenly drop down and stop the passage. Examination with the sound gave only negative results; the straight soft catheter passes without hindrance into the bladder; urine highly ammoniacal, but contains neither pus nor other organized elements. Is unable now to pass any urine without the aid of a catheter. Examination of the urethra shows no evidence of constriction. The canal is 34 f. throughout. Examination per rectum showed apparently but little enlargement of the prostate and this appeared to merge into the bladder walls, so that its exact limits were not easily distinguishable. The abdomen was protuberant, from accumulation of adipose tissue, so that nothing could be ascertained through the rectum by the double touch. A soft catheter was passed into the bladder and to measure its capacity, sixteen ounces of water were injected, but not a drop could be voluntarily expelled by the patient. On passage of the catheter to a distance of eight and a half inches, the urine flowed freely through it, and sixteen ounces were returned. I felt satisfied that the obstruction was movable within the bladder, and was probably a polypoid growth, and after repeated efforts to seize it with the lithotrite, and at the earnest request of the patient, an exploratory incision was made through the perineum into the membranous urethra, and my finger was inserted. The perineum was quite deep. After a brief examination, I recognized the fact that my finger could just reach the superior border of an enlarged prostate which had pushed up into the bladder as shown in the accompanying sketch, the lateral lobes, falling together on the slightest attempt to urinate, formed a valve, which perfectly prevented the exit of even a drop of urine, but did not prevent the easy introduction of a soft catheter. I searched with various instruments, still hoping to find a polypoid growth or some other cause of obstruction to passage of urine, but exploration failed to elicit any cause of trouble beyond the valvular obstruction caused by the enlarged prostate gland. A soft rubber tube was inserted through the wound and prostatic urethra, to just within the bladder and tied in. The patient did perfectly well until the seventh day, when the wound began to assume an unhealthy appearance, apparently from irritation caused by the tube; this was removed. Spasms of the bladder occurred on subsequent efforts at urination and required free use of morphia to control. Urine drawn through catheter, introduced through perineal opening, gave only temporary relief, a very slight accumulation of urine producing desire to urinate, and spasm of the bladder resulting. Partial suppression of urine occurred on the twelfth day, and he died uræmic on the fourteenth day after the operation.

LESSON LXVIII.

Post-mortem appearances in the foregoing case—Diagram in illustration, showing position and probable influence of the prostate; also the size and location of a cyst of the bladder which was present—The case cited to show that explorations of the bladder through the urethra and rectum do not always indicate conditions in which exploratory operations through the perineum will be of service—Also to show that result of such exploration is sometimes grave, under apparently favorable conditions—Differences of opinion as to the safety of the operation—Operation not essentially different from the median operation for stone; as a rule equally perilous—Claim of Sir H. Thompson that it is similar in gravity with external urethrotomy combatted; reasons given for this opinion—Too favorable statements liable to lead to grave errors in practice—Statistics reported by Sir Henry Thompson; proportion of cases of exploratory operation where no cause of trouble was found. Cases which improved without ascertained reason, suggestive of a reflex origin of the original trouble—Idiopathic cystitis rare; in the author's experience, always due to mechanical or reflex influences, or extension of inflammation from urethra or ureters—Cases in the author's experience in illustration of this point—Necessity of examining all points capable of inducing reflex trouble in the bladder, before deciding upon an exploratory operation through the perineal incision—A full understanding by the patient of the nature and risks of the operation desirable before operation—Under proper conditions, the operation of perineal incision and digital examination of the bladder of great practical value.

The report of the post-mortem examination made by a member of the pathological staff of Charity Hospital and extracted from the Hospital records is as follows:—

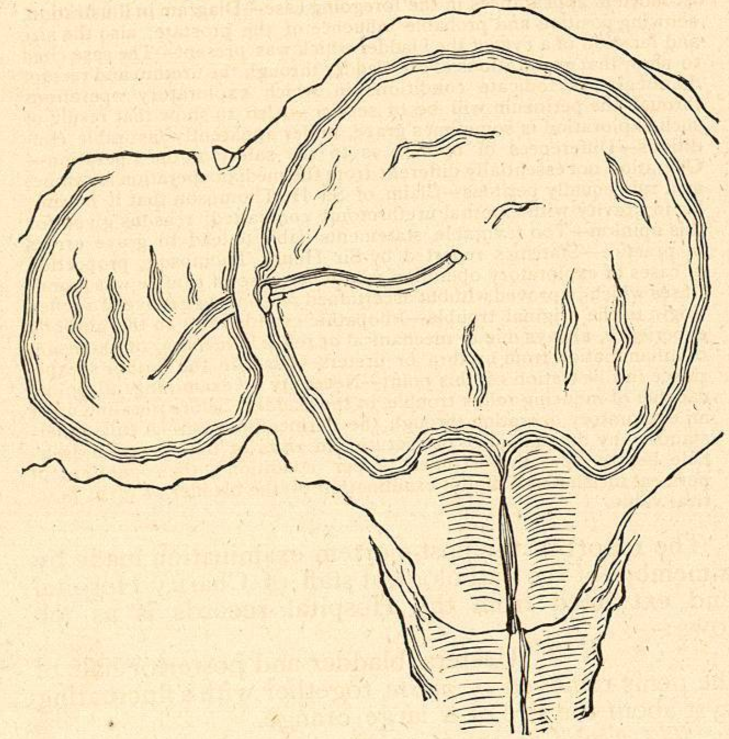
"* * * * Ureters, bladder and posterior half of the penis removed *en masse*, together with a fluctuating cyst about the size of a large orange.

"*The wound of operation* presents a sloughy appearance and is covered with diphtheritic membrane (so called).

"*The Prostate* is very little enlarged, but the prostatic urethra is encroached upon by a bulging inward of the lateral halves of the prostate, and which protrude into the bladder.

"*The Bladder* is contracted, its walls about half an

inch in thickness; its internal surface prominently trabeculated, in several places, presenting small sacculi of the mucous membrane. The crests of the trabeculæ are everywhere covered with a thick, yellowish-gray membrane; about an inch above the orifice of the right ureter is an opening (24 millimetres circ.) into the cav-



Sketch showing peculiarity of prostatic hypertrophy and vesical cyst.

ity of the cyst before mentioned, which contained about ten ounces of strongly ammoniacal urine. The walls of this cyst are one-eighth inch in thickness; the mucous membrane lining them being continuous with the mucous membrane of the bladder. * * *

"*Ureters.* The right is largely dilated and courses behind the cyst; the left is but moderately dilated. Both show evidences of acute inflammation. * * *" etc.

This case is cited chiefly to show that diagnosis by symptoms and by examination of the bladder with sounds, and also through digital exploration through the rectum will not afford positive information as to the cases which *will* be relieved through the exploratory perineal incision, and those that *will not*.

It shows also that there are cases where, on account of the enlargement of the prostate, the digital examination of the bladder, through the exploratory perineal incision, is impossible. It also shows that the operation for purely exploratory purposes, is occasionally fatal in its immediate results, and that, with the patient in fair condition, and presenting in life no positive evidence of any organic disease. I quite agree with Sir Henry Thompson that the operation is a simple one, easily and readily performed; but that it is, as he has stated, *only an external urethrotomy* involving *neither the prostate nor the bladder*, it seems to me difficult to accept. The operation does not differ in any essential particular from the perineal lithrotrity of Dolbeau, and but slightly and not essentially from that of the median operation for stone; nor do I think that it can be shown to be in any way inferior to that operation in point of risk to the patient.

In Sir Henry Thompson's first paper in the London *Lancet*, on this subject, May 6th, 1882, after a description of the mode of examining the bladder through the perineal incision, which is most complete and admirable, he claims justly for it the merit of being our most valuable aid to diagnosis in cases of obscure bladder troubles; "This being so," he asks, can digital exploration of the bladder be performed without much risk to the patient?" he replies, "I unhesitatingly answer in the affirmative," and cites cases of Sime's operation for deep urethral stricture, as parallel, and supporting his statement. The operations are quite different. In the case of simple perineal urethrotomy, no violence is done to the prostratic urethra, the prostate or the vesical neck; they are virtually untouched. In case of digital examination of the bladder through the perineal incision, the important part of the risk lies in the necessary distension required to force the finger onward to its fullest extent, and often with much urgency. In order to make an efficient examination of the bladder, through the method described by Sir Henry, even if a complete failure, such as must, with necessary uncertainties of diagnosis frequently occur, the operation is *never* less important than that for stone, where no stone is found.

Assurances as to the safety of such operations, based on statistics of external urethrotomy, appear to me likely to lead young surgeons into the possible error of resorting to such a method of diagnosis, before exhausting all known rational modes of relief, involving less peril from surgical interference than the operation of dividing the urethra in the membranous portion, and introducing the finger fully into the bladder. With all the knowledge, experience and skill of Sir Henry Thompson, in three out of four of his first list of cases of exploration of the bladder, reported in the *Lancet*, May 6th, 1882, he failed to find any reasonable cause for the trouble. In his list of fourteen similar explorations, reported in the *Lancet* of Feb. 10, 1883, he failed, in the same manner in seven. Few surgeons, indeed, could hope for anything like the good fortune of discovering foreign bodies in eight cases out of eighteen, and relieving them from troubles which otherwise must have caused a fatal issue. And then, quite a large proportion of the remaining ten cases were relieved by the operation without anyone quite understanding the reason for such improvement.

May it not be wise, in considering this curious fact, to revert to the case of spasmodic stricture of seventeen years duration, whose troubles were not relieved until the forcible distension of the membranous urethra? and also to the case, where the difficulty produced profound bladder trouble, and which was repeatedly, and promptly, and finally permanently relieved by over distension of the membranous urethra? And also, the case, where the most eminent genito-urinary surgeons in America, in Great Britain, and in France had repeatedly examined for stone, and for tumor at intervals, during a period of over twenty years, and had failed to find any, and where, finally, the only cause for the great and prolonged suffering, terminating finally in death, was a chronic spasm of the bladder, and the cause for which no explanation could be found, except a contraction of the urethra, within an inch of the external orifice!

It is a practical point of much value to appreciate the fact that *idiopathic* cystitis ever occurring is very rare. In my experience it is always the result of extension of inflammation in the urethra, or from some mechanical irritation within the bladder, or from reflex irritation from some point outside the bladder, such as would be afforded by stricture of the urethra at some point, or from disease of the spine, kidneys, or rectum.

With such facts as these, and many more equally significant of the dependence of obscure bladder troubles or reflex irritations outside of the bladder, which cannot be doubted, may it not, then, be reasonably asked of surgeons everywhere, that in every case of obscure bladder trouble, the urethra shall be explored with the understanding that any contraction of its calibre, congenital or acquired, including all contractions at the urethral orifice, shall be accepted as a possible cause of the trouble, and *removed* before deciding upon the performance of the external perineal incision, and the introduction of the finger through it into the bladder for the purpose of aiding the diagnosis.

While I have not had anything like the proportionate success which has fallen to the lot of Sir Henry Thompson in discovering foreign bodies through the exploratory operation, so warmly advocated by that distinguished surgeon, I have yet had sufficient to make me resort to it in circumstances under which I have already recommended and performed it, viz., where through careful, intelligent and patient examination, every suspected reflex source of trouble had been, as far as possible, removed, and where, with a full understanding of the possible advantages and of the necessary doubts of success in the search, and the surgical risks of the operation, the patient consented to its performance. I am

also fully persuaded that while the risks of the operation of exploratory perineal urethrotony are identical in theory and practice with median lithotomy, the operation is of great practical value, and a justifiable one under proper circumstances.