

In lithotomy the urethral route, and particularly the neck of the bladder, are injured by forcible extraction of a large and rough calculus, but nothing analogous to that dangerous process occurs in the removal of tumour.

Old, however, as is the surgical proceeding in question, whether in modern language it be termed 'external urethrotomy,' or, as with the older French surgeons, the quaint term of the 'boutonnière' be adopted (the term itself shows how very simple even at that period they considered it), the mode of performing it appears to me, after a considerable experience, not altogether a matter of indifference. I shall in the first place, however, premise that there is no longer any doubt that the median incision of the perineum opens a shorter road to the neck of the bladder than an incision commenced from any lateral part of that region, although the question has been raised. Considering this point to be determined, I shall describe in the succeeding chapter the steps of the proceeding which appear to me the most desirable to be followed in order to attain the end proposed with ease and safety.

CHAPTER II.

DIGITAL EXPLORATION OF THE BLADDER.

Mode of performing—Conditions which may be met with—Draining the bladder—Exploration in women—Results of exploration in forty-three cases—Brief reports of each.

THE OPERATION.—The position of the patient, and the general accessories necessary, are those required for lithotomy.

After ether has been given, a median staff with a short curve, wide and deeply grooved, is passed into the bladder, and the patient is brought down to the edge of the table, the feet and hands are attached by anklets and wristbands and held by two assistants in the usual manner, another holding the staff. The surgeon, being seated, introduces into the rectum his left forefinger, so as to feel with its tip the position of the grooved staff, separated by intervening tissues, and to verify the apex of the prostate, on which he may place the point of his finger as a guide. He may take the handle of the staff with his right hand and place it in the position required, before returning it to the hand of the assistant. Maintaining his left

index in the position described, the operator then makes, with a long, narrow, straight-backed bistoury (fig. 2), a vertical incision through the skin and

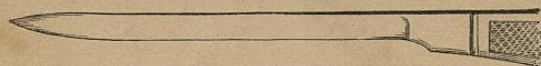


FIG. 2.

cellular tissue in the middle line, say in the raphé, about an inch and a quarter long, the lower extremity of the incision terminating about three quarters of an inch above the anus. He next enters the bistoury, with its cutting edge upwards, in a horizontal direction, at the lower part of the incision, just above the upper border of the bowel and parallel with it, and, guided partially by the proximity of the left index there, directs the point inwards until it arrives at the membranous part of the urethra, which it penetrates, entering firmly the groove of the staff. Contact being distinct, he incises the urethra on the staff for a few lines by a backward and forward movement of the point, and then withdraws the bistoury, cutting slightly perhaps a little of the tissues upwards as he does so, avoiding as far as possible any section of the bulb itself, and making room enough only for the finger to enter. He now inserts in the groove of the staff the tapering gorget-like director (which may be itself grooved in order to enter on the back of the knife which has been employed, and before the latter

has been removed) (fig. 3), and presses it gently inwards along the urethra to the bladder, and he

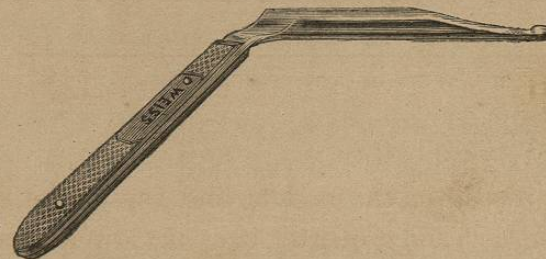


FIG. 3.

may at the same time remove the left index from the rectum and take the staff in that hand, so as to handle the two instruments simultaneously. The staff is withdrawn, the director maintained in place by the right hand, the left index is slowly and gently insinuated along the director through the neck of the bladder, when the director is withdrawn. The tip of the exploring finger is now in ordinary circumstances felt free in the cavity of the bladder, and not unfrequently at once comes into contact with and recognises the morbid condition for which the exploration was undertaken. Whether or no, the operator, maintaining the index in its place, and firmly pressing it into the cavity of the bladder, rises from his seat if necessary, and stands so that by means of his own right hand he can make firm suprapubic pressure, and bring the upper surface of the bladder into contact with the left index. This is easily accomplished if

anæsthesia is complete, that is, renders the abdominal muscles quite inert and flaccid. He rapidly ascertains the presence or absence of tumour; if absent, he will by slightly changing the point of suprapubic pressure, and also as far as he can, the direction of the tip of the left index, carefully examine bit by bit the whole internal surface of the bladder. He will first be acquainted with the condition of the mucous membrane lining the cavity, and observe whether it possesses the smooth satin-like surface, so characteristic of the vesical lining membrane in health, or whether it is more or less roughened or velvety in places, for such conditions rarely affect the entire area. He may find on the contrary an irregular surface elevated in places by interlacing lines of fibres, with corresponding depressions and interstices, the signs of hypertrophy of the muscular coat; while the existence of inequalities in the surface of any kind, such as small papillæ, or so-called 'villi,' is at the same time determined.

Further examination with the finger-nail may detach from the walls some rough-feeling material; and a more or less substantial film may be found, to which earthy deposits adhere, like a false membrane which may be peeled off and removed. In other cases a complete scale of phosphatic crust may be encountered, rather closely attached to a roughened portion of the wall, and be separated from it without difficulty. And sometimes the finger may discover a small cal-

culus half exposed, half hidden, occupying partially, or almost completely, a little sac, or lodged in a crevice, as it were, and merely protruding from between two hypertrophied folds or rugæ, which hold it in a position where it has perhaps defied both the sound and the lithotrite. All forms of prostatic outgrowth are met with; their interference with the vesical function can be studied, in the relations which they hold as to size and situation to the neck of the bladder; some of them being thus possibly rendered amenable in a slight degree to surgical treatment after such recognition has been made, as is partially illustrated by a case, No. 41, at the end of this chapter.

Indeed, it is difficult to say at present what may not be found, as fresh experiences have brought to light conditions to some extent not heretofore recognised, of which I have yet to speak. Hence there are few occasions, I confess, which for me have excited a more lively interest, than the moment at which my finger enters a bladder, the condition of which has been a theme of keen inquiry and speculation, for some months or even for years before.

Almost certainly, at that moment the cause is revealed, and the practical surgeon only can understand, if I permit myself to say how grateful is the sense of satisfaction when it is suddenly discovered that the event has amply justified the procedure, and that the cause of years of suffering is judged after

examination to be safely within our power to remove. I doubt whether the keenest hunter in quest of adventure, or most indefatigable and hardy explorer of an unknown continent, realises, after long and patient toil, happier moments following success, than does the operator, who, after protracted care and research, tracks to a hidden source the cause of certainly impending death, and is able to save the victim!

To return, supposing it is at once apparent from the examination just described that tumour is present, the operator must next deliberately study its size, form, situation, and mode of attachment to the bladder. This is an extremely important matter, and will be considered, as well as the best mode of removing the growth, in the next chapter.

On the other hand, no growth having been found, the next steps of the proceeding will depend on what other morbid or irregular condition has been revealed. Supposing that either some calculus or other matter has been removed, or that the bladder and urethra are to be maintained in a state of rest in order completely to suspend their functions for a few days, free exit for the urine must be secured. For this purpose a soft but stout indiarubber tube, with a clear calibre of a fourth of an inch, having a lateral as well as a terminal opening, and about six inches long, is to be fastened with one end (smoothly bevelled) just within the bladder, the remainder occupying the wound, and

protruding so as to convey the urine direct to some vessel suitable to receive it. If the object of treatment is that last described, the tube should remain a week or so, unless its presence occasions pain, in which case a soft large catheter may be tried; or, as sometimes happens, it is better after the first or second day to dispense with any instrument, and allow the urine to take its course through the wound. If, however, the tube produces little or no irritation, it should remain several days, until the bladder has been rested and drained, say at least for a week; even a longer period is sometimes advantageous; see Cases 5, 8 and 43. The relief from frequent habitual catheterism thus afforded to a patient who for months perhaps has been compelled to use a catheter twelve times or more frequently every day is so great that he often desires the period of drainage to be prolonged, and thus the term of rest to be extended. To a man who has for some months before never enjoyed two consecutive hours of sleep—and in some of these long-standing cases the term of rest does not even reach one hour—the ability to lie unmoved and be undisturbed for an unlimited period of time constitutes an indulgence which he appreciates to the utmost, and which has often the happiest effect on his digestion, his strength, and his spirits. I have seen some very remarkable examples of relief arising from the process, and relief of a permanent character.

It will be natural in this place to advert for a few moments to the analogous operation in the female when dealing with obscure forms of disease for the purposes of diagnosis and treatment. In order to accomplish a digital exploration of the female bladder all that is needful is sufficient dilatation of the urethra to admit the introduction of the index finger, which may be accomplished by means of a three-bladed dilator or otherwise, after which the facility for examining is of course greater than that attained after perineal incision in the male. Dilatation, however, always comprehends, I think, in whatever way it is rapidly performed, a certain amount of splitting or rupture of the urethra, which, however, I have never known to be followed by any permanent injury. I have thus examined five cases of women for the purpose of diagnosis, and have found tumour in two, and removed both without any further enlargement of the opening.

It has been objected by some that when the prostate is largely hypertrophied, especially in a fat subject, it is not possible to explore the bladder by means of the proceeding here described. Hypothetically the objection appears important, but my experience shows that the difficulty supposed is rarely considerable; in only one instance have I failed to reach the whole of the internal surface of the cavity.

If only the anæsthesia is complete, our purpose is

effected much more easily than most persons would *à priori* imagine. In fact, before such anæsthesia had become possible, digital exploration of the bladder would not have been proposed, and certainly could not have been accomplished. It is one of the many applications of surgical art which owe their origin solely to that influence. For if absolute and complete flaccidity of the abdominal muscles is thus attained, it is surprising how the contents of the pelvis can be pressed down towards the perineum by a strong and determined assistant, and can be reached by the operator, however large the prostate. But if the etherist permits the patient any power of resisting with the abdominal muscles, the effort is hopeless, and failure in the attempt to explore is, I believe, more likely to arise from that circumstance than from any other.

Further, it cannot be frequently necessary to make a digital exploration in cases of very large prostate, inasmuch as the cause of symptoms is generally sufficiently patent, and therefore does not call for further inquiry.

The bladder, however, may require to be drained in advanced disease of this kind; and this is often done with great and permanent benefit; for which purpose the small urethral incision suffices. To this proceeding the enlarged prostate offers no impediment; but complete exploration of the bladder in such a case is not required, unless unusual symptoms

are present, which the enlargement and consequent obstruction do not suffice to explain.

RESULTS.—I shall now present, in brief terms, a list of all the cases on which I have performed digital exploration of the bladder, forty-three in number. In twenty of these tumour was found. These latter cases will only be named here, since the details concerning them will be fully given at the close of the fourth chapter. The object of the following record is to indicate all the various conditions for which the operation of digital exploration was resorted to, and the results which followed its performance.

On carefully analysing these cases there appear to be four chief forms of vesical disease, in which the operation of opening the urethra for the purpose of withdrawing the urine altogether by an artificial route, and so suspending the functions both of the bladder and urethra for a time, may render good service. Then, besides these, there remains a fifth class of cases, namely, those in which the operation is undertaken solely with the view of exploring, when the presence of tumour may be strongly suspected.

The first class consists of those cases, not unfrequently met with, in which all the symptoms of chronic cystitis have existed for a long period, and in a severe degree, and which persist in spite of long-continued and appropriate treatment; while at the same time it is understood that the absence of

material cause for the cystitis, such as stone, stricture, vesical incompetence, &c., has been ascertained. Examples are Cases 2, 24, 31, and 43.

The second class of cases includes those examples of prostatic hypertrophy and of atony of the bladder, in which that organ must be emptied by the catheter many times in the twenty-four hours, and in which painful chronic cystitis is obviously aggravated, if not maintained, by the necessary process of relief. These are usually cases in which the disease has existed for years, and which have arrived, to all appearance, at the latest stage, unless complete relief can be afforded. Examples are seen in Cases 5 and 34.

The third class embraces those cases, less rare perhaps than they have been supposed to be, in which the existence of impacted calculus or of adhering calculous matter may be suspected, or may be known to be present by sounding. Examples are seen in Cases 3, 4, 7, 22, and 36.

In the fourth class I place those cases in which painful and very frequent micturition or bleeding, separately or combined, may have long existed; without signs of cystitis, the urine being clear, free, or nearly so, from mucous or purulent deposit; furthermore, the cause of these symptoms has baffled the most careful inquiry. On exploration being made no organic change is discovered, no light is obtained