Pooley (J. H)

MEDIAN LITHOTOMY:

Being the Substance of Some Remarks,

DELIVERED BEFORE THE

OHIO CENTRAL MEDICAL ASSOCIATION.

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CASES.

Case 1.—W. T., æt 17, born in New York. He was a tall, pale, black haired youth, of slender frame, and feeble constitution. He complained of symptoms indicative of stone in the bladder, such as frequent urination, pain in passing water, &c. He said that he had been more or less troubled in this way for some years, and had had medicine prescribed for him by several physicians, but without any benefit. Upon sounding him, the presence of two moderately-sized calculi in his bladder was diagnosticated.

On June 10th, 1871, the operation of median lithotomy was performed, and two smooth, oval, flattened calculi were removed, each about the size of a pigeon egg.

They were dark colored externally, but lighter within, and very friable; they weighed together five hundred grains.

The operation was unattended with any difficulty or circumstance worthy of note. He had complete control of his bladder from the first, and soon began to pass part of his urine per urethram; but though the wound nearly healed up, it did not do so entirely, and he continued to pass part of his urine through the wound—this seemed to be owing to the state of his general health, which was very poor—but as it continued open, without any prospect of healing, it was determined to make a thorough examination.

Accordingly, September 21st, he was etherized and the urethra and wound explored. There was no stricture; a No. 12 elastic catheter passed easily. On examining the wound, a fistulous orifice was found communicating with the rectum, directly in the median line opposite the raphe of the perineum. By the advice of those in consultation, though somewhat contrary to my own judgment, the wound and rectum were laid freely open by incision through the fistulous orifice dividing the sphincter.

The wound thus made gaped widely. A small opening existed in the urethra in its membranous portion.

A catheter was left in the bladder for twenty-four hours, and the wound dressed with lint, as in an ordinary operation for fistula in ano, which it resembled. These proceedings, however, were of no benefit to the patient; the edges of the wound continued wide apart, and showed no tendency to heal, and finally became skinned over; the urine still passed partially by the artifical opening, and was heavily loaded with pus and mucus, and he partially lost control of his bladder, so that it soaked the sheets on which he lay; each act of urinating gave him severe pain.

October 15th.—Patient is pale, emaciated, and weak; has but little appetite, takes six ounces of whisky a day in the form of milk punch; has pain over the region of the bladder and kidneys. For the past few days his bladder has been washed out with warm water once a day; complains of great pain after the operation.

October 20th.—He complains of great pain in the left side, over the region of the kidney extending up into the thorax, for which hot applications were ordered. He has also a diarrhœa, for which bismuth nitr. and morphia were given.

November 1st.—Patient is becoming weaker, has a great deal of pain in the left lumber region, and in the bladder; washing out of the bladder has been continued nearly every day for the last four weeks. Pulse 90, respiration 28, temperature 100°.

November 8th.—Patient continues to grow weaker, and, as it causes him pain, and does no good, the syringing of the bladder is discontinued.

November 17th.—Patient much the same; complains constantly of pain in the kidneys and bladder, for which hot fomentations are applied, and morphine administered. The whisky disagreeing with him, he was ordered sherry wine instead.

Pulse 128, respiration 32, temperature 100½°. Urine loaded with pus and mucus, and is very offensive; it all passes through

the opening in the perineum, and he has very little control over either his bladder or rectum. He still sits up a little each day.

December 2d.—Patient is becoming so weak that he can hardly sit up at all; condition in other respects unchanged since last report.

December 18th.—Patient much the same. For a week past has had night sweats; he is obliged to take large and frequent doses of morphine to subdue pain.

December 28th.—Pain more severe. He was quieted this evening with a hypodermic injection of morphine.

January 2d., 1872.—Patient getting weaker and weaker. His diet consists of milk, wine and hot whisky. He has no control over his bladder or rectum, both urine and fæces passing involuntarily.

January 7th.—He died quietly at 10 A. M. to-day.

Autopsy.—Twenty-four hours after death. Rigor mortis well marked; body emaciated; lungs and heart healthy; liver conjested, substance pale, and on section smooth, hard, and mottled in appearance; gall bladder contained about half an ounce of dark colored bile; spleen rather larger than normal.

Kidneys.—The right was considerably larger than normal; upon section, cortex pale, pyramids partially obliterated; cavity of the pelvis filled with pus. The left was reduced to a mere sac filled with pus, all traces of kidney structure having entirely disappeared; it contained a large, irregularly three-cornered, rough calculus, nearly as large as a black walnut.

The ureters were greatly enlarged and thickened. The bladder was very much diminished in size, its walls thickened, the mucus membrane thrown into large folds or rugæ, and covered with dark echymotic spots. The prostate, enlarged, consisting of two cavities containing pus, each opening into the rectum.

There are many reflections suggested by this painfully interesting case. It presents a striking example of the extensive changes in the urinary apparatus, extending to every part thereof, which sometimes follow neglected or overlooked stone in the bladder. Diminution of the caliber of the bladder, irritation propagated along the ureters to the kidneys, damming up of urine in the pelves of these latter organs, leading to inflammation and destruction of tissue, with secondary calculus deposit from retained urine, and profound consequent deterioration of the general health; these are parts of the catalogue of ills that wait sometimes upon calculus in bladder.

The best illustrations of these morbid conditions to which I can refer are to be found in Crosse's "Prize Essay on Urinary Calculus;" where several cases resembling the one just detailed are described and figured. With regard to the failure of the wound of operation to unite, both that, and the opening into the rectum are, I think, to be attributed to the condition of the patient's health. I am certain that the opening into the rectum was not made at the time of operation; indeed I do not see how it could have been without being detected at the time or shortly afterward; it probably occurred sometime subsequently by ulceration, or was connected with the abcesses discovered in the prostate after death.

In further confirmation of this idea, I quote from Crosse's "Prize Essay," already referred to, page 84:

"The rectum is so contiguous to the urethra, that an opening may occur subsequent to the operation from sloughing resulting from violence, or from ulceration in a bad constitution."

With regard to the treatment of such a complication, he says, a little further on, on the same page: "Where the perineal opening also remains, forming a recto—perinæo—urethral fistula, dividing the verge of the anus by an incision including the parts between the two openings, has been recommended; I once succeeded by this method." The general advisability of such a proceeding seems to be doubtful, at least to my mind. There is one strong objection to it—if the incision is carried through the raphe of the perineum, as it almost necessarily must be, the central point of the attachment for the converging fibres of the sphincter is divided, and the natural result will be a wide separation of the divided portion of the muscle, similar to what happens in lacerated perineum, and perhaps finally necessitating a similar operation for its cure.

In the case under consideration this seemed to be the result; the edges of the wound were drawn widely apart, there was no tendency to heal, and they became firmly skinned over, so that they never could have healed without some further operation; but perhaps no inference can be justly drawn from a single case, and especially from *such* a case. Notwithstanding the unfortunate issue of the case, it can in no way be attributed to the operation, which was useful in alleviating, though only temporarily, some of the distressing symptoms under which the patient labored and had no more to do with his death than if he had died fifty years afterward of Cerebral Hemorrhage.

Case 2.—Thomas P.——, aged seventeen years, born in New York. Father and mother both dead, cause of death can

not be ascertained. He has two brothers and two sisters, one of the sisters has phthisis pulmonalis, the other sister and brothers in good health. He was paralyzed on the right side when an infant less than a year old. The history of this attack is very imperfect and obscure, but his present condition seems to indicate that it was the essential paralysis of infancy; the right side still partially paralyzed, somewhat smaller than the left, the muscles permanently contracted, some mental weakness or imbecility—tongue still deflected to the right. When he first came under my notice he had paraphimosis, caused by manipulation of the penis; this was easily reduced, when the prepuce was found to be preternaturally long, and there was incontinence of urine, the urine flowing almost constantly without control of the patient. Examination with the sound was now made, and revealed the presence of stone in the bladder. Diagnosis of two, not large, verical calculi was made, and on November 1st, 1871, the operation of median lithotomy was performed, and two calculi about the size of hickory nuts, and very irregular in form were removed. These calculi were irregularly smooth and polished, and being of a bright chocolate color, and marked with concentric rings of lighter hue, they presented an appearance best compared to polished agates; they consisted externally of urate of ammonia, and after the lapse of a few weeks their color in a great measure faded, so that they are now of a pale lavender tint.

At the expiration of twenty-four hours the patient began to pass part of his urine per urethram, although most of the urine was passed through the wound for the next ten days, after which the urine all passed naturally, his incontinence ceased, he was discharged cured, and has remained well ever since.

Case 3.—H. W., aged nine years, born in the United States, came under observation June 13th, 1873.

His mother says that he first began to complain about the previous New Years or Christmas; his first complaint was of pain in his side (lumber region); they thought he had worms, and gave him some vermifuge medicine; he passed no worms, but seemed to get better after this, but only for a few days, he then began to have incontinence of urine, both nocturnal and diurnal, wetting his clothes frequently by day, and his bed *always* at night; this symptom still continues. He has severe pain in making water, and also before and after the act; some times he has sudden stoppage of the stream, and at other times difficulty in starting it; when he strains violently he has pain in the end of his penis, and frequently pulls at his prepuce,

which shows some evidence of this by being slightly elongated. His mother has never noticed either blood or pus in his urine, though she says, it is sometimes thick; running or jumping gives him pain. He is a well grown boy for his age, but has a pale, worn look, indicative of habitual suffering; his bowels are regular, but his appetite is poor, and he is loosing flesh; his face is pitted with small-pox. He was chloroformed, a sound introduced, and a stone readily found; I judged it to be single, of moderate size, and hard consistence.

He was ordered to be kept quiet, have medium diet, flaxseed tea for drink, and an anodyne at bedtime.

June 14th.—He took ten drops of McMunn's elixer last night and slept well all night; he wetted his bed in the night; seems quite comfortable this morning.

June 17th.—The patient has been very comfortable since last report. He wets his bed every night, but has only passed urine involuntarily during the day time once; he complains of little or no pain on making water. To-night he is to have a dose of caster oil, and at noon to-morrow a large injection of warm water.

June 18th.—At three o'clock P. M. I performed the operation of median lithotomy, and removed an exceedingly rough mulberry calculus, weighing eighty grains. The operation presented nothing worthy of remark, and was accomplished without difficulty of any kind. For the first few days the patient, though he had not complete incontinence, had much less control over his bladder than we usually see after this operation; when he felt the desire to urinate and called for the bed-pan; if it was not supplied instantly, he could not retain his urine, but wetted the bed.

After a few days this passed off, and he had complete control of his bladder during the day time, but occasionally wetted his bed at night.

His recovery was considerably retarded by an attack of, apparently, circumscribed inflammation about the cæcum; there was a good deal of pain, with exquisite tenderness in the right iliac fossa, hot skin, fured tongue, pulse 120, temperature 102°. He was treated with morphine and poultices. The tenderness did not spread, and in about ten days the attack subsided; his mother informed me that he had had one or two previous attacks of a similar character. He was discharged well July 21st, and I saw him about a year after, the picture of health, a perfect contrast to the pale, worn boy I had operated upon.

Case 4.—Patrick D——, æt. 22 months, born in Columbus, Ohio. This child had been suffering from symptoms of stone

for nearly a year before I saw him; he had pain in making water, copious deposits of phosphates and mucus in his urine; pulled constantly at his prepuce which was elongated; had a diarrhœa with prolapsis ani, and was generally pale and miserable looking. On sounding the evidences of stone were distinct, and I operated on him by the the median method on July 4th, 1875, in the presence of Drs. Loving, Wheaton, and Frankenberg of this city. The perineum was deep, and owing to the small size of the parts, a little time and patience were required in getting into the bladder, and extracting two phosphatic calculi, about the size of common marbles.

He made an excellent and uninterrupted recovery, having complete control of his bladder from the first. At the first urination after the operation, he passed considerable blood and calculus debris. He began to pass water per urethram in forty-eight hours, and ceased to pass any through the wound on the tenth day. He had entirely recovered in three weeks, and has remained well ever since.

Case 5.—Mr. S——, German, æt. 54, resident of Morrisania, N. Y. First noticed symptoms of stone a year before I saw him, which was in the middle of August, 1875.

The first symptom he noticed was a sudden stoppage of the stream while under full headway. It is not necessary to detail his symptoms. The sound detected a small calculus, and I operated on him, after the usual preparation, by the median method. The operation presented a slight difficulty, which I presume is an unusual one: The calculi, of which there were two, were somewhat difficult of extraction, not on account of their large, but of their *small* size.

I must also mention that, in incising the urethra, in the manner to be hereafter described, I entered to point of the knife twice. The remarkable part of the case is to follow. He never passed any urine through the wound at all. Some hours after the operation the doctor in attendance was called to see him, and found him suffering from a distended bladder, and wholly unable to relieve himself. He introduced a female catheter through the perineal wound with the utmost facility, and emptied the bladder. It was necessary to do this twice or three times a day, until the urine began to pass per arethram, which it did in ninety-six hours, and from that time continued to do so entirely. This facility of introducing an instrument from the outside, with impossbility of urine flowing from the inside, must have been caused by some valvular arrangement given to the wound in the urethra by the double puncture. I have never heard of a similar case. This man was up eating

dinner with his family the next day, and has remained well ever since. These last two cases, one at twenty-two months, the other at fifty-four years, represent the extremes of age at which I have operated, and it seems the operation is equally well adapted for either period of life.

It is somewhat singular that in all the cases but one there have been two stones.

DESCRIPTION OF THE OPERATION.

The Median, or Allarton's, or Marian's, or operation by the Apparatus Major, as it is variously called, was introduced by Joannes de Romanis, a surgeon of Cremona, in Italy, in the fifteenth century; but its great advocate at the time, and the person whose name it bears, was Marianus Sanctus Borolitanus, who describes it in most magnificent, or as we may say, most highfalutin terms. It was called the operation of the Apparatus Major, from the number and complexity of the instruments employed in its performance, which consisted of—*a*, a male conductor; *b*, a female conductor; *c*, a simple dilator, and *d*, a blunt gorget, in addition to the cutting instruments, forceps, etc. Nothing can exceed the ludicrous pomp of some of the descriptions of Marianus, as, for instance: "Look but to the aperians (dilator), how it gapes with desire, when the conductors have made way for its approaching, and, seizing the stone, it rages like a ferocious soldier ready to enter the breech in the walls of a besieged city; next comes the voracious and vociferous forceps, roaring and gaping for the stone." In this extraordinary style, is the whole account of Marianus written.

The operation which he describes was based upon the principle of dilating the prostate and neck of the bladder, instead of incising these parts as in the other modes, and, notwithstanding the laceration of the vesical neck, sometimes to a horrible extent, by the rude and brutal force exerted by their barbarous instrument, and the rhodomontade of Marianus, and the opposition of the advocates of the lateral operation of Frere Jacques, it held its place in surgery for about a hundred years. By this time the lateral operation had been so thoroughly improved, and so splendidly executed by the conjoint labors of so many surgeons, principally by the English Cheselden, that it eclipsed all rival methods, and the Marian operation was abandoned, if not forgotten.

It was revived in all its *essential* features by Mr. Allerton, a provincial English surgeon, but much simplified in its details,

about the year 1850, and ever since has been more or less practiced, under the name of Allerton's or the Median Operation. Mr. Allerton himself has been its principal English advocate. In this country it has been most frequently performed by Dr. Walters, of Pittsburg, Pennsylvania, whose cases in 1870 numbered forty-seven, without a single death.

Drs. Markoe and Little, of New York, are among its most able defenders and practicers at the present time, but though they and others have ably set forth its claims to confidence, I find that it is not yet appreciated at its full value, and here it is almost unknown, never having been performed, as far as I can learn, in this city, until I did myself on the 4th of July last.

I propose now to describe the operation as at present performed, and then to speak of its advantages and indications. The rectum having been previously emptied and washed out, the patient is anæsthetized, placed in the usual lithotomy position, and the grooved staff introduced and entrusted to an assistant, who is to hold it firmly in an exactly vertical position, and pressed closely up against the arch of the pubis.

The operator now introduces the fore-finger of his left hand into the rectum, for the double purpose of securing the contraction of the gut, and defining exactly the apex of the prostate—he should feel this distinctly, and it is desirable also to recognize the groove of the staff in the membranous uretha just beyond it.

Taking now a long, sharp-pointed, narrow bistoury, the common finger knife, he introduces it back downwards in the raphe of the perineum, about half an inch above the anus, and, thrusting it through the tissues, lodges its point in the groove of the staff, just beyond the apex of the prostate, at the point indicated by the finger in the rectum. Moving the point of the knife gently up and down, to be sure that it is safely in the groove, he now, cutting directly upwards, incises the membranous urethra in the median line for half an inch or rather more, and then, elevating the handle as he withdraws the blade, enlarges the external opening to the requisite extent, say about an inch. He now, with his right hand, introduces, along the groove of the staff, a probe, or director, into the bladder; for this purpose Dr. J. L. Little, of New York, has devised a grooved, somewhat pointed or tapering director, with a handle bent or depressed to an angle of forty-five degrees, which answers the purpose admirably. The staff is now withdrawn, and the finger of the left hand introduced into the bladder along the director, the number, size, and situation of the cal-

culis made out, and the forceps entered, and the stone or stones removed.

In introducing the finger it is done slowly, cautiously, and with a gentle twisting or screwing motion, by which the parts are safely and sufficiently dilated; sometimes, in young subjects, the little finger may be used. The forceps need seldom be longer than the common slightly-curved dressing or polypus forceps of the surgeon's case.

After the stone is grasped in such a way as to bring its smallest diameter in relation to the wound, it is withdrawn by a slow, twisting motion, care being taken not to hurry, because impatient, or commit violence.

If the calculuus is too large to be safely withdrawn, it may be crushed with a suitable instrument, lithotrite or lithoclast, and the fragments separately removed. The bladder is now syringed out with warm water, and the wound left to itself. There is no need to fill the bladder with water, or allow it to become distended with urine in this operation; indeed, I believe it to be a useless measure in all operations except possibly the supra pubic.

Inasmuch as some difficulty has sometimes been experienced in engaging the knife in the groove of the staff, and it has sometimes, even by expert operators, been thrust by the side of the staff into the surrounding tissues, Dr. Markoe, of New York, has contrived a staff in which the groove is flattened out, as it were, and made very wide ad shallow.

This, I think, is somewhat objectionable, as in such a shallow groove, with the urethra tightly stretched over it, the wound is not so sure to be lineal and longitudinal, its only safe form, but is apt to deviate, and become diagonal or even transverse. I avoid the difficulty spoken of by what I consider a much safer and better plan, namely, by beginning with a regular incision, in the ordinary way, made from without, extending from about an inch above, nearly down to the anal margin, and dissect down to the urethra, or pretty near it, before using the long bistoury and entering the groove.

The operation done thus is slower and less showy than in the other way; but this, I think, is more than compensated for by its superior safety. In the rest of its details, the operation is as already described.

ADVANTAGES OF THE OPERATION.

These I shall speak of very briefly, under six heads. First, better results than the other methods—as already mentioned, Walters, of Pittsburg, had a series of forty-seven cases without

a death. This is, of course, exceptional, and inconclusive, but from an examination of all the statistics accessible to me, I find the mortality to be only one in thirty-five. This is certainly a very favorable result, and fully twice as good as the lateral, if not any other method can show, and would be much better if the operation had been confined to suitable cases, which has not always been done.

Second—Facility of entering the bladder. This seems to me indisputable, though, strangely enough, some authors speak of the lateral as the easiest operation, at which I can but wonder. The route is here direct—the most direct possible, the intervening tissues less than in any other way, and it seems to me, if in any case difficuty has occurred, it must have been greater had any other operation been chosen.

Third—Less liability to hemorrhage. This is reduced to a minimum, indeed, if the incision be strictly median, as it should be, there are no vessels to bleed. The only possible source of bleeding is from the bulb, but the incision need never be carried high enough to touch this, and even if it should, it is easier reached and dealt with than by any other form of incision.

Fourth—Less danger of wounding the rectum. The cutting edge of the knife being turned directly away from the gut, in every part of the deeper incision, even when a preliminary incision is made, as in my own method, this can never occur.

Fifth—There is no danger of wounding the deep perineal fascia, and producing infiltration of urine.

Sixth—As an almost invariable rule, the patient has complete control of the bladder after the operation. This I regard as the crowning glory of the Median operation. No lithotomy sheet, no dribbling urine, no urinous odor, no excoriations of the integument—everything dry, clean and comfortable, the patient urinating voluntarily at long intervals. What a contrast to the condition of the patient after lateral lithotomy! What a heaven of comfort! No words of eulogy can insure the effect that the simple statement of the facts ought to produce.

In conclusion, my own impression is that recovery takes place much more quickly after this than after any other operation for stone in the bladder. I believe that when this operation is limited to small or moderately sized calculi, for which it is best adapted, it will win its way to universal favor. In such cases, especially in children, I can not even imagine a more thoroughly simple, easy, and satisfactory surgical procedure.