NEPHROLITHOTOMY (FOLLOWING NEPHRECTOMY)

FOR TOTAL SUPPRESSION OF URINE LASTING FIVE
DAYS.

COMPLETE RECOVERY AND GOOD HEALTH FIVE YEARS
AFTER THE OPERATION.

BY

R. CLEMENT LUCAS, B.S., M.B.LOND., F.R.C.S.,
SURGEON TO, AND LECTURER ON ANATOMY AT, GUY'S HOSPITAL; SURGEON
TO THE EVELINA HOSPITAL FOR SICK CHILDREN.

Received August 27th, 1890—Read January 13th, 1891.

THE following case was mentioned by the editors of the medical journals at the time of the operation, in 1885, as a case of exceptional interest, but the details of the case have never been published, nor has the patient, or her kidney, or the stone which caused suppression, ever been exhibited. I have delayed publishing it because those to whom I mentioned it, whilst applauding the attempt to save a life on the extreme verge of dissolution threw the coldest doubt upon the patient's future ; maintaining that even if she recovered from the immediate effects, her life must be a short and painful one ; that the one remaining kidney having been opened and drained would rapidly

degenerate, or another stone would quickly form and bring about a final catastrophe.

I think now, after five years, sufficient time has elapsed to acquit me of any attempt to claim as complete an uncertain success. The patient is still living and enjoying to all appearances the best of health, and a freedom from pain, discomfort and hæmaturia, which, for seventeen years before her right kidney was removed, were almost constantly present.

In thus successfully operating for total suppression of urine after the removal of one kidney, it may, I think, be claimed that renal surgery has been pushed to its extreme limit of possibility, and the question of an operation on a single kidney has thereby been fully justified.

Much of the credit of the case is due to Mr. F. D. Atkins of Sutton, Surrey, who not only made the diagnosis of stone in the first instance, but by his promptitude in bringing the patient's dangerous symptoms to my notice, when suppression occurred, paved the way for her recovery.

In preparing to operate for the relief of this patient I carried out, what for years had been my intention, if any case of total suppression should come under my notice. It was not a sudden thought, but an operation the chances of which had been well considered; and I had publicly advocated its performance on more than one occasion. Thus in the 'British Medical Journal' of December 1st, 1883, I commented on a case published by Mr. Wilmot in the same journal of the previous week. This was a case of single kidney in which a stone caused symptoms of suppression for four days, and then was followed by sup-puration and death apparently from septicæmia.

My comments on this case were as follows: "The case, published by Mr. T. Wilmot in the journal of November 24th, is eminently suggestive of operative interference in cases of suppression of urine. The necropsy revealed an absence of one kidney, and a small calculus blocking up the entrance to the ureter on the other side. A pre-

paration of a precisely similar nature is to be seen in the Museum of Guy's Hospital; and I recently heard of a case of suppression of urine where this diagnosis was made, and it was subsequently verified by the passage of a small calculus and the relief of the symptoms.

The symptoms in Mr. Wilmot's case were remarkably characteristic, for they commenced with a sudden sharp shooting pain in the left lumbar region, striking down to the glans penis and the testes, and stoppage of the flow of urine, with a constant desire to void it, accompanied with great bearing-down. When seen two days later, these symptoms continued, and, in addition, tenderness was discovered over the region of the kidney, subsequently a fulness was also noticed in this region. During four days, he is said to have passed only two ounces of urine, and then the flow recommenced; but meanwhile the damage had been done; rigors, vomitings, with a temperature of 104.6° had occurred; and the patient sank apparently in a septicæmic condition, seventeen days after the commencement of the attack.

It is interesting to note that this patient had had two previous attacks of suppression of urine, one lasting thirty-six hours, the other forty-eight. It becomes, then, a matter of some difficulty to determine when is the proper time to operate, seeing that in some cases the calculus may pass out, and in others recede so as to allow again the escape of urine. But it must not be lost sight of that if the symptoms disappear without the passage of a calculus, the patient is still left in a dangerous state, and his kidney is probably undergoing gradual dilatation and destruction. With a previous history of suppression unaccompanied by the passage of a stone, I think the surgeon would be justified in operating without delay, and in any case I should not be inclined to let the case pass over the second day without attempting to give him relief by an incision through the loin. When it is fully understood how simple a matter an antiseptic incision through the loin may be, medical men under whom these cases

may fall will have less hesitation in resorting to operation, and many lives will, I trust, be thus saved in the future."

Mr. Bennett May, who had also previously advocated surgical interference in such cases, wrote in support of my contention in reference to this particular case. His interesting paper, however, did not appear in the journal until March 8th, 1884. It ends by a comment on Mr. Wilmot's final remark, "The usual treatment was followed in this case," and Mr. May says:—"Undoubtedly such was the fact, and, let me add, it was followed by the same result—death. Whether the proposed departure from the usual treatment will ever lead to any other result, time and experience must determine." That time is now passed, and the experience which was looked forward to has been acquired, through the patient whose case will be described in detail this evening.

F. F—, æt. 37, was first admitted into Guy's Hospital on June 22nd, 1885. Her father had suffered from gout and died from congestion of the lungs. Her mother, two brothers, and one sister died from consumption.

For seventeen years she had suffered from hæmaturia at intervals, and for nine or ten years this had been accompanied with pain in the right side, and for seven years a tumour, diagnosed as a floating kidney, had been felt in the right side. On July 14th the right kidney was removed by a crucial lumbar incision. It was a mere shell containing masses of stone and weighing twenty-one ounces. The wound healed completely, and she left the hospital convalescent on August 10th, just within a month of the operation.

All went on well for three months. She had returned to her household duties, and I heard from time to time that she was free from pain and hæmaturia, and much satisfied with the result of the operation.

On Sunday morning, October 24th, 1885, she was suddenly seized, between 7 and 8 o'clock, with most violent and agonising pain in her back and left loin. The

pain passed through the loin to the front of the abdomen and groin. About 8 o'clock she passed a little urine, but from that time all secretion stopped. Vomiting commenced about half-past 8 on the same morning, and was continued at intervals and whenever anything was taken. Mr. Atkins was called to see her, and found the bladder empty. He prescribed medicines to stop sickness and diuretics, but everything was returned. Vomiting and anuria continued throughout Sunday, Monday, and Tuesday.

On Tuesday, October 26th, Mr. Atkins came to London to tell me that my case of nephrectomy was dying from suppression of urine due to some obstruction in the other kidney. I went to Sutton with him to see the case, and found, though the vomiting and anuria had caused great depression, she still had a good pulse and was in a condition to bear an operation. The bladder was quite empty. It was impossible to operate with any chance of success in her cottage, a long distance from her medical man, I accordingly tried to persuade the husband to bring her to London. He promised, if she got through the night, to bring her to Guy's Hospital on the following morning. She was admitted into the hospital on Wednesday, October 27th, in a very collapsed condition. The vomiting and anuria had continued since 8.30 a.m. on Sunday, but she still had a fair pulse. A catheter was passed, and the bladder still found quite empty. The pain in the loin and back was easier since yesterday morning but had not disappeared. She also complained of severe headache and giddiness, but said this was better than it had been. On the whole, we could not attribute any increase of symptoms to the journey of twenty miles to London.

It was my intention to cut down at once on the remaining kidney, but my colleagues, and more especially the late Dr. Moxon, advised me very strongly to give yet a trial to strong diuretics to try and wash the stone down. In deference to their opinion I resolved to wait till the following day, or until the patient was evidently dying. A tur-

pentine enema was given by the bowel, and a strong diuretic mixture containing acetate of potash by the mouth. Both were immediately returned and the vomiting continued all night.

On Thursday, October 29th, she still had passed no urine and was much worse. A tumour, evidently the hypertrophied left kidney, could be felt in the abdomen, and when she lay on the right side it fell forwards towards the middle line. It did not appear to have increased in size since Tuesday when it was first noticed. Towards the middle of the day she began to get drowsy, and it was difficult to rouse her to obtain answers to questions. Her pulse, too, was weaker, her temperature was 99°. It was clear that if anything was to be attempted it must be done at once.

The operation.—At 2.45 p.m. ether was administered by the House Surgeon (which the patient took very well), and an incision five inches in length was made about three quarters of an inch below the last rib and parallel with it. The external oblique, and latissimus dorsi, the internal oblique, and the tendon of the transversalis were divided in succession. Several small vessels were twisted and one ligatured with catgut. When the fascia transversalis had been divided, a large amount of perinephritic fat came into view, a good deal of which was cut away in order to expose the kidney more clearly. The kidney was then examined from behind with the finger. At first, no stone could be felt, but after a time at the lower part of the pelvis something rounded was felt, which slipped immediately away from under the finger and was lost in a calix. Being convinced that this was a stone movable in the pelvis, the wound was now enlarged and made crucial, whilst the kidney was pressed back into the wound. After some trouble the stone was again displaced into the pelvis, and being held there by the first and second fingers of the left hand, the pelvis was divided over it. In doing this, however, the stone again slipped away into its calix bed and was lost. The aperture in

the pelvis was then enlarged so as to admit the left fore-finger, and a pair of curved forceps being inserted and guided by the finger the stone was seized and extracted. The pelvis was not found to be of any great size, but the kidney was large, and its tissue apparently healthy. Urine began to drip away as soon as the pelvis was incised.

The stone was rather more than three quarters of an inch in length, and in diameter, from three eighths to five eighths, and one inch and a quarter in its greatest circumference. From its appearance it will be seen it was exactly of the shape to act as a ball-valve to the top of the ureter.

A drainage-tube of large size was placed beneath the wound in the kidney and brought out at the lower part of the wound, and the remainder of the wound was closed with thirteen wire sutures. Before the dressings were applied, urine mixed with blood dropped freely from the drainage-tube. The wound was covered with gauze and iodoform, and a large pad of absorbent wool was applied outside. The operation lasted one hour and a quarter, and the patient recovered well from the effects of the anæsthetic.

The pads were changed at six o'clock the same evening owing to the escape of fluid from the wound. She was sick once at eight o'clock in the evening after the operation, but from that time no sickness occurred.

October 30th.—The patient passed a fair night, sleeping comfortably. The pads were changed five times during the night owing to the large escape of urine from the drainage-tube. No urine passed into the bladder. The wound was dressed and looked well. She has taken two ounces of milk and ice during the night. Temp. 99°.

31st.—The patient did not pass quite so good a night but feels no worse. The pads have to be constantly changed owing to the escape of urine. She takes milk, ice, and soda water without feeling sick. Temperature normal.

November 1st.—Still no water from the bladder, but the urine flows freely from the tube so that the pads have constantly to be changed. Wound looks well; ordered brandy 3ij.

2nd.—Patient looks better, but complains of dry mouth and a feeling of dizziness. Temperature normal. No urine by the bladder; ordered chicken broth.

3rd.—Three of the stitches were taken out and the wound found to be healing well. She takes beef tea and jelly. All the urine still comes by the tube.

4th.—Patient had a good night's rest and feels better. Temperature normal. Wound dressed and more stitches removed. No urine passed from the bladder. She ate some boiled sole. Enema saponis was administered.

5th.—Passed a fair night, but complains of pain in the wound. After having slept for a time she gets into a cold perspiration and feels giddy. No urine by the bladder.

7th.—The remaining stitches were taken out, wound healthy. Temp. 99·2° last night. Still no urine by the bladder.

10th.—To-day for the first time since the operation the patient passed, *per urethram*, an ounce and a half of urine. It caused sharp cutting pain in passing, and contained a large amount of sediment. There was a large quantity of albumen, pus, epithelial-cells, and a trace of blood. The temperature last night was 99·4°.

13th.—The large tube was removed and replaced by a smaller one. She passed about two ounces of urine by the urethra.

15th.—Patient passed about ten ounces of urine by urethra this morning, she feels much better and looks brighter. The wound is granulating up well.

17th.—The patient passed in the last twenty-four hours twenty-nine ounces of urine, sp. gr. 1015, slightly alkaline in reaction, containing a trace of albumen, no blood or sugar, but phosphates and a small quantity of pus and epithelium.

18th.—Patient passed thirty-six ounces of urine in the last twenty-four hours of sp. gr. 1020, alkaline with a trace of albumen and a little sediment of phosphates, pus, and albumen. All the urine appears now to come by the natural channel. There is very little discharge from the loin, the dressings only requiring to be changed occasionally.

19th.—The patient passed forty-two ounces of urine to-day by the urethra. No urine now comes by the tube only a little discharge. The tube was shortened one and a quarter of an inch. The wound, through which the tube passes, is granulating up measuring two and a half inches by half an inch. The remainder has healed.

25th.—The patient has been making good progress. She has passed from thirty-two ounces to forty ounces of urine in the twenty-four hours since the last report. The tube has been gradually shortened and was to-day removed. There is very little discharge from the wound. Temp. 99° in the evening, 98·6° in morning.

From this time onward there was little to note. The trace of albumen and pus gradually disappeared from the urine. Quantity passed varied from thirty ounces to forty-four ounces.

December 20th.—The superficial wound was dressed with zinc ointment.

24th.—She sat up for the first time.

In January, 1886, the wound was completely healed, but she was kept in the hospital until February 14th, 1886, chiefly for the sake of observation, and because the weather was cold.

Remarks.—It will be noted that the symptoms commenced early on Sunday morning, and that it was not until the afternoon of Thursday, the fifth day, that the operation was undertaken. From a study of cases of obstructive suppression, previously reported, I was aware that the most serious symptoms seldom set in before six or eight days from the commencement of the obstruction, and this knowledge caused me to yield to the advice of

my medical colleagues to wait, even after the patient was admitted into the hospital, before attempting an operation which appeared to them must of necessity prove fatal. The case meanwhile was watched by a special nurse who had instructions to send for me if any convulsion, coma, or serious depression, showed itself. I waited until it became difficult to rouse the patient to answer questions, and until it was evident to all that her condition was getting desperate.

It will be observed that, as in obstruction of the intestine, the symptoms which were most urgent at the commencement tended to lessen as the case went on. The agonizing pain in the loin grew less, and might have led to the deceptive thought that the calculus had travelled on down the ureter. The vomiting also became less urgent, and the restlessness and sleeplessness gave way to a general sense of indifference, and the severe headache and giddiness almost disappeared. All this quiescence of symptoms pointed merely to the wearing out of the vital powers, and indicated no improvement in the patient's condition, whilst complete anuria remained. The size of the stone removed showed how hopeless it was to think that it could ever have passed down a ureter.

It was pretty clear that the stone had been a long time forming, but resting somewhere in the fleshy part of the kidney had given rise to no symptoms, until it dropped out of its bed and fell into the pelvis. This agrees with my general experience of renal calculus, which is that the fleshy substance of the kidney is comparatively insensitive, so that a fixed stone there gives rise to little symptom, but a stone, movable in the pelvis of the kidney and impinging on the outlet, causes the greatest agony.

Its mobility gave rise to a difficulty in detecting it, when I had exposed the kidney; for the moment I touched it, it slipped away into its nest, where it could no longer be felt. When I again brought it into the pelvis by manipulating the cortex, I held it between the tips of two fingers of my left hand whilst incising the membrane over

it; but so easily did it move that before this was completed it had again disappeared. It was eventually turned out by the finger introduced through the pelvis, and removed by curved forceps.

It was interesting to note how rapidly relief to symptoms followed the opening of the kidney, and the free exit thus obtained for the urine.

The patient was sick once only after the operation, at eight o'clock the same evening. After this she fell into a refreshing sleep. From that time headache was no longer complained of, but a feeling of giddiness remained for several days.

The wound, in spite of the escape of urine, ran an antiseptic course, the temperature never reaching 100°, except once, six weeks after the operation, when she had a chill and her temperature rose for three days as in an ordinary cold.

It was not until twelve days after the operation that any urine was passed by the urethra, and I began to dread further obstruction lower down and a permanent urinary fistula in the loin. The urine first passed contained a thick sediment of pus, epithelium, phosphates, and some blood. It also caused great pain during micturition, at first only one ounce and a half passed through the bladder in twenty-four hours, but the quantity naturally voided rapidly increased after the sixteenth day, when the large drainage-tube in her loin was replaced by a smaller one. After the nineteenth day all the urine passed naturally, and none whatever was afterwards detected in the dressings. The wounds took about ten weeks to heal completely, and since that time there has been no sinus or any inconvenience from the operations on the two loins.

(For report of the discussion on this paper, see 'Proceedings of the Royal Medical and Chirurgical Society,' Third Series, vol. iii, p. 42.)

DESCRIPTION OF PLATE II.

Nephrolithotomy following Nephrectomy for Total Suppression
of Urine lasting Five Days (Mr. R. CLEMENT LUCAS).

A. Vertical section of the right kidney removed, choked with
calculi, weighing twenty-one ounces. Reduced in size.

B. Conical calculus removed by operation, which blocked the
orifice of the left kidney, and caused total suppression of urine.
Actual size.