Diseases of the kidney which require surgical operation : illustrated by three cases / by W. Morrant Baker.

International Medical Congress

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ILLUSTRATED BY THREE CASES

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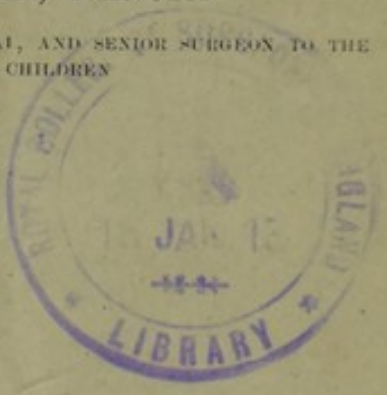
W. MORRANT BAKER, F.R.C.S.

ASSISTANT-SURGEON TO ST. BARTHOLOMEW'S HOSPITAL, AND SENIOR SURGEON TO THE EVELINA HOSPITAL FOR SICK CHILDREN



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J. W. KOLCKMANN, 2, LANGHAM PLACE

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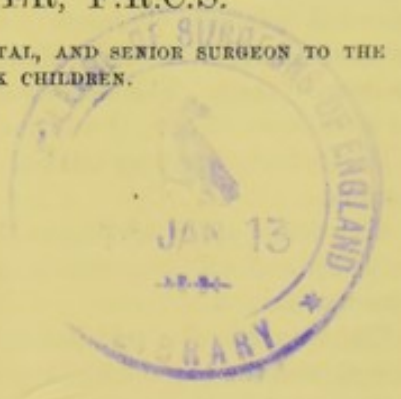

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DISEASES OF THE KIDNEY WHICH REQUIRE SURGICAL OPERATION

I.—A case of Nephrotomy, in which Nephrectomy was subsequently performed.
II.—A case of Nephrotomy.
III.—A case of Renal Lithotomy.

Case I.—*A case of Nephrotomy, in which Nephrectomy was subsequently performed.*—For the detailed notes from which the following abstract has been made, I am indebted to Dr. Hale White, House-surgeon, and Mr. H. Fraser Stokes, Registrar to the Evelina Hospital.] The patient, a girl (A.P.), seven years old, was admitted into the Evelina Hospital for Sick Children, under the the care of Dr. Buchanan Baxter, October 8, 1880. She was said to have been always delicate, but free from any serious illness until about eighteen months before her admission into the hospital, when a large quantity of blood, in part coagulated, was passed with the urine. No more blood was noticed until about a year after the first hæmorrhage, when she again had an attack of hæmaturia, but less severe. No blood has been passed since; but at about the same time it was noticed that the urine became purulent; and this condition remained up to the date of admission. For several months, and before the second attack of hæmaturia, she had become languid, and complained of pain in the chest. She also perspired much at night and lost flesh.

At the time of the child's admission into the hospital, a rounded swelling of somewhat indefinite character was found in the abdomen—deeply seated in the region of the right kidney—dull to percussion, and not very tender, varying in size from to time. The urine was pale and contained a large quantity of pus, and sometimes blood. It was passed frequently, and in small quantities at a time.

Hectic fever was very marked. Temperature 104° F. at night, 97° F. in the morning.

Six weeks after admission the quantity of pus in the urine had become doubled; and on one occasion, at about this period, half-a-pint of blood-red urine was passed.

Eight weeks after admission her appetite failed, hectic fever became more marked, and the patient was evidently becoming weaker.

December 7, 1880.—As the result of a consultation with Dr. Baxter, I performed nephrotomy at this date, an incision being made parallel to and below the last rib, as for lumbar colotomy. The kidney was exposed without any special difficulty and incised; and the interior of the organ, which was found much sacculated, was explored with the finger. No stone was detected.

A drainage-tube was inserted into the kidney, and the wound, which had been made under the carbolic spray, was dressed in the usual manner.

It may be mentioned that the distinction between the kidney and its capsule could be very readily made out, and the organ could have been enucleated at this time without any difficulty.

At first, some benefit seemed to accrue from the operation; no shock attending it, and the quantity of pus in the urine becoming somewhat less. But the notes of about a month's date after the operation record that but little pus drains away through the tube, while the amount in the urine is almost as great as before the operation. There has been no repetition of the hæmaturia.

The carbolic dressings had been discontinued on account of carboluria. At a date two-and-a-half months after the nephrotomy, it was noted that hectic fever had been very marked of late, the evening temperature rising sometimes to 104·2° F. The wound showed no disposition to contract.

As it seemed obvious that the patient was losing ground, it was decided to remove the kidney, and I performed nephrectomy on the 22nd of February, 1881, being assisted by my colleagues, Mr. Howse and Mr. Clement Lucas.

The operation was somewhat complicated by the condition of the parts which had resulted from the previous nephrotomy. On exploring with the finger, in the first place, through the old incision, which was still at the surface widely open, it was found that all the soft parts around the kidney had become much condensed and matted together; and it was at first very difficult to distinguish the kidney itself from the tissues which embraced it. The conditions presented a marked contrast to those which were present at the time of the nephrotomy ten weeks previously. The outline of the kidney was, however, detected after a few minutes' search, and with the finger the organ was carefully separated from within its capsule, until the line was reached apparently at which the capsule became continuous at the hilus with the upper dilated portion of the ureter. A double strong silk ligature was now passed around the pedicle, with the help of a special blunt needle, and one loop of this was tied, the other being left in reserve, and tied after the removal of the kidney, which was effected by snipping the pedicle with strong curved blunt-pointed scissors.

The first part of the operation was performed under the carbolic spray, but this was discontinued as soon as it became clear that there was no risk of wounding the peritoneum.

During the operation, and especially at the time at which the pedicle was ligatured, the patient became very faint, but revived under artificial respiration and the sub-cutaneous injection of brandy.

The kidney removed weighed 2¾ ounces; and I am indebted to Dr. Hale White, House-surgeon, for the following account of it:—"The specimen presented the usual characters of a so-called scrofulous kidney. The kidney-substance was riddled with cavities of various size, each being lined by a thick, whitish, pus-secreting membrane. No healthy structure could be detected anywhere, and no stone was discovered. Under the microscope it was found that almost all trace of normal kidney structure had disappeared, the only remnant visible being a few Malpighian bodies, some of which appeared to have undergone fibroid degeneration. The destruction of the normal texture appears to be due to extensive cellular infiltration of the whole of the intertubular connective tissue, which has encroached upon and destroyed the intervening structures. The infiltration is most marked at the surface of the pus-secreting cavities. Many of the blood-vessels are thickened."

The shock produced by the operation was of short duration, and within a few

days it was obvious that much improvement in the general condition of the patient had resulted from it. The quantity of pus in the urine had diminished, though by only about one-half of its previous amount. The ligatures were found loose in the wound on the ninth day after the operation.

A slow but steady improvement in the condition of the patient has continued since this date, and on April 20 (two months after the operation) it is noted that the child eats and sleeps well, that she has no pain, and that she looks better and is in much better spirits than formerly. She has gained slightly in weight.

The amount of pus in the urine is less than half of what it was before the operation. On one occasion it has contained a little blood. The wound is looking healthy and healing soundly from the bottom.

The notes of July 15, 1881, record that at this date—five months after the removal of the kidney—a most marked improvement in every way is perceptible The child has gained in colour, flesh, and strength, is much more lively, and plays about all day long, frequently going out of doors for a walk. The appetite is good, and she sleeps well. The temperature ranges between 98° and 99° F.

The wound is slowly cicatrising from the edges, and is now about a quarter of an inch only in width. There are still a few sinuses about a quarter of an inch in depth, leading off from the main wound.

The quantity of pus in the urine is less. At the present date it averages about half-an-ounce a day. Six weeks ago it was three-quarters of an ounce. Occasionally, a little blood is passed in the urine, and this is usually accompanied by some pain in the region of the bladder.

The total amount of urine passed is about half-a-pint a day.

Case II.—*A case of Nephrotomy.*—[For the details of the notes I am indebted to Mr. Hewer, Surgical Dresser.] The patient, a lad sixteen years old, was admitted into St. Bartholomew's Hospital, February 26, 1881, under my care, on account of a large swelling in the region of the left kidney. He had been for some time previously under the care of Dr. Dyce Duckworth. He was in perfect health until about four years before admission into the hospital, when his illness began with a sudden sharp pain, in the left renal region, which obliged him to go home and lie in bed. By the next morning, however, the pain had ceased, and he was as well as ever. A second attack, with like symptoms, occurred a fortnight afterwards; and, subsequently, attacks came on at almost uniform intervals of a week, and these have continued to the date of his admission into the hospital; the attacks lasting usually from eight to sixteen hours, and the pain being very acute and always felt in the same region—that of the left kidney. During an attack a large swelling, fluctuating to pressure, has been perceptible on examination in the painful region. The swelling has however, subsided soon afterwards, and no trace of it can be discovered until the onset of a fresh attack.

Before an attack it is said the urine is clear; immediately afterwards it becomes thick with pus, the thickness then again disappearing gradually, and the urine remaining clear until the patient has suffered from another onset of pain. During an attack he always lies on his back, with the knees drawn up; and while the pain lasts he is said to take no food, nor does he pass urine, even when the attack is prolonged for many hours.

In June, 1879, he was admitted into a medical ward, under the care of Dr. Andrew, and remained there for two months, but without permanent benefit; the attacks of pain and the accompanying symptoms appearing with great regularity.

The general health was somewhat impaired by the repeated attacks; but the patient was able to attend as an out-patient, under the care of Dr. Duckworth until the date of his readmission into the hospital.

March 15, 1881. At this date, rather more than a fortnight after the patien t's readmission, he had a severe attack of pain, and, the left renal region being occupied by a large, fluctuating and tense swelling, I decided on seizing the opportunity and exploring the tumour by operation.

The incisions made resembled those commonly adopted for lumbar colotomy the wound being enlarged subsequently by making an incision upwards at right angles to the first which lay parallel to the last rib. After exposure of the tumour, which proved to be a largely dilated kidney, it was punctured; and about a pint and a half of pale slightly turbid fluid escaped. [Sp. gr. 1005, neutral in reaction, and containing pus-cells and a trace of albumen.]

The opening was then enlarged, and the dilated kidney was explored as thoroughly as possible by the finger and, afterwards, a metal sound. The lower boundaries, which seemed to extend into the pelvis, could not be satisfactorily reached. No calculus was discovered.

The edges of the wound in the kidney-cyst were now stitched, as to part of their extent, to the edges of the wound in the abdominal wall, and an India-rubber tracheotomy tube was afterwards inserted to ensure good drainage. The wound was dressed lightly with carbolized oil.

Carbolic spray was used during the early stages of the operation, but was discontinued as soon as all danger of wounding the peritoneum was over.

The subsequent history of this case is only one of almost uninterrupted progress towards recovery—that is, so far as the operation and its immediate results are concerned. The patient has completely regained his health and is free from pain. He still wears a drainage tube, through which a considerable quantity of urinary fluid is daily discharged. Quite recently Mr. Buckland, one of the surgical dressers, has arranged a simple apparatus, by means of which the fluid is discharged into a bottle which the patient, when walking about, carries slung to his waist.

Mr. Buckland has kindly furnished me with the following account of the urinary fluid passed through the renal fistula, and of the urine passed per urethram:

Fluid discharged by the renal fistula: average amount (daily) 21 ounces, sp. gr. 1005.

Albumen:—July 22, $\frac{1}{4}$.
July 29, $\frac{1}{8}$.
August 1, $\frac{1}{9}$.

Urea:—July 22, 0·2 per cent.
July 29, 0·1 „
August 1, 0·1 „

Acid, slightly; blood, a trace; sugar, none.

Urine discharged per urethram, average amount daily, 28 ounces, sp. gr. 1015.

Albumen, none.

Urea:—July 22, 1·0 per cent.
July 29, 1·4 „
August 1, 2·0 „

Acid, slightly; sugar, none; blood, none.

Case III.—*A case of Renal Lithotomy.*—A poorly-nourished, rather feeble woman, aged forty-three, was admitted into St. Bartholomew's Hospital under the

care of Dr. Dyce Duckworth, in September, 1874, on account of a tumour in the right renal region. "Pulse, 100; temperature, 98° F.; appetite, bad; frequent vomiting in the morning."

The urine was at all times very turbid, and a considerable quantity of pus was deposited in it on standing.

The right renal region was occupied by a large swelling, which extended to the middle line of the body, and was estimated to be of about the size of a full-grown fœtal head. The swelling was dull to percussion, but not over its whole extent, and very tender. Its size was variable.

The patient's illness began with pain in the right side, accompanied by slight rigors, eight months before her admission into the hospital, when she was in the fifth month of pregnancy. Immediately after her confinement she first noticed the swelling, which was at that time of about the size of a hen's egg. The urine had been very thick for some time before this date.

About a fortnight after the patient's admission into the hospital, I saw her in consultation with Dr. Duckworth and punctured the swelling, drawing off about eight ounces of pus.

Some relief was experienced from the operation; the temperature, which was previously raised, becoming normal, and no pain ensuing. The tumour also became smaller. Three weeks afterwards, however, the symptoms had become the the same as before the operation, and it was determined to explore the swelling more thoroughly.

October, 28, 1874.—An incision was made in the right loin, parallel with the last rib, as for lumbar colotomy, and the tissues carefully divided, until the peritoneum was reached. This was then gently pushed forward and lifted, so to speak, off the subjacent structures, until, having been in this way safely placed out of the way of injury, the outer surface of a tense sac, corresponding to the tumour previously felt, was exposed to view. Only one bloodvessel had required a ligature. The cyst was now punctured with a trocar and cannula, and on the withdrawal of the former a quantity of thick offensive pus streamed out. A sensation, as of the point of the trocar coming down on a calculus, was perceived as it entered deeply into the cyst. The wound in the cyst-wall having been now enlarged with a scalpel, the forefinger was introduced and a large branched calculus was at once discovered. The opening in the wall of the kidney was now enlarged, and the greater part of the calculus was extracted in pieces, with some difficulty. A very free oozing of dark blood from the vascular walls of the sacculated kidney occurred during the removal of the stone, but no hæmorrhage from any special bloodvessel. A small fragment of stone, deeply lodged in an outlying pouch of the kidney, and barely within reach of the tip of the finger, even when pressure was made on the front wall of the abdomen, was left, as the patient began to show signs of failing strength, and it seemed unadvisable further to prolong the operation.

Drainage tubes were inserted, and the wound was syringed out with warm water containing permanganate of potash. No sutures were inserted; the edges of the wound in the abdominal walls being only in part approximated by strapping.

The patient was much collapsed immediately after the operation, and never fairly rallied. She died on the third day after the operation, with no other symptoms (excepting chloroform-vomiting) than those of exhaustion. Her temperature did not rise above 101·1° F.

Permission could not be obtained to make a post-mortem examination.

The calculus removed weighed nearly two ounces, and consisted almost entirely of phosphate of calcium, with much organic matter. Its shape was irregular and characteristic of the situation in which it was lodged—forming, as it did, a cast of the sacculated kidney which had contained it.

The short time at my disposal will permit only a very brief consideration of the points raised by the foregoing cases.

With respect to Case I., the chief interest I think, is to be found in the following facts: 1. The small amount of benefit, if any, which was derived from merely incising and draining the diseased kidney. The drainage was maintained as efficiently as it is likely to be under similar circumstances; but, notwithstanding this, the quantity of pus in the urine was, after a short period, practically unaltered. The wound, moreover, although granulating freely, showed but little indication, even two months after the operation, of healing or closing in at any part of its boundaries. The exposed kidney seemed, if one may so express it, to act as a foreign body.

2.—The removal of the kidney was made much more difficult by the previous Nephrotomy. It is true that, after the boundary line of the kidney-substance was once found, not much trouble was afterwards experienced in the enucleation of the organ. But it seemed, at the time, as if it would be quite possible to miss altogether the outer surface of the kidney; and, in this case, had an attempt been made to separate anything outside the kidney itself or, in other words, to remove the capsule or condensed tissue adherent to the outer surface of the latter, the troubles attendant on the operation would have been multiplied tenfold, and the peritoneal cavity would have been almost certainly opened.

3.—So far as one case can prove anything, this case proves that the operation is greatly facilitated by removing the kidney from within its capsule.

4.—The peril of the operation (nephrectomy) seemed, during its performance, very great; and without such energetic assistance as was rendered at the time, in the performance of artificial respiration, by Mr. Lucas and others, I think the patient would have died. The syncope occurred at about the period at which the ligature was applied; but the child had been much reduced in strength before the operation, and I am disposed to doubt whether, under more favourable constitutional conditions, there would have occurred the shock which made us anxious at this particular time with regard to the life of the patient. It is certain that the effects of the shock, properly so-called, disappeared very rapidly. Twenty-four hours afterwards, the child was very pale and seemed exhausted, but she was quite composed, and on being asked if she wished for anything, replied that she would like a little meat. And within a few days it was clear that she was in a better constitutional condition than before the operation.

5.—The continued presence of pus in the urine and the occasional though slight attacks of hæmaturia prove that recovery is not yet complete, and seem to indicate the presence of disease either in the ureter on the affected side or possibly in some part of the opposite renal tract, if not in the bladder itself to the region of which the pain is sometimes referred. It is impossible to decide this question yet. But the case does not, I believe, stand alone in respect of long continuance of symptoms in a modified degree after the operation.

There is one point with reference to the operation itself to which I would draw attention, and that is the advisability of being provided with a special blunt pointed needle, for passing the ligature around the pedicle. The depth of the

wound and the narrow space in which one has to work render an instrument of the sort more necessary than would be believed by one who had not had occasion to perform the operation.

With regard to Case II.—that of Nephrotomy for hydronephrosis—I have but little to say. The relief has been very great. All pain has disappeared, and the lad's health has been restored. Sooner or later, however, it will be necessary to explore again the condition of the large urinary cyst which still remains, and to decide on the desirability of leaving matters as they are or of extirpation.

Case III—that of Renal lithotomy—illustrates only too well the danger of removing a large branched calculus from the kidney, even when the operation has not been complicated by a wound of the peritoneum or other mishap not of necessity attendant on the operation. It is true that the patient was in this instance but a weakly subject, and a better result might have accrued had the operation been undertaken at an earlier period of her illness. But I believe any operation for the removal of a stone similar to that which was taken away from this patient must be necessarily very perilous, both from shock and, perhaps still more, from the loss of blood from the inner surface of the dilated and vascular kidney. Of course these remarks would not be applicable to any case of renal calculus of small or even moderate size. But, in the case of a large branched stone, I am disposed to think that it would be a safer procedure to remove the kidney forthwith, with the calculus, than to make a prolonged attempt to remove the stone. And this seems more especially advisable when one considers the diseased condition of the kidney, of which the stone is, perhaps, rather a representative than a cause. One case is, of course, of but little value in determining a surgical procedure, and can prove nothing. But the present case may help with others in establishing the right method of treatment in these cases, so irremediable except by surgical operation, and for this reason it seems right to place it on record.