A C A S E
OF
DOUBLE NEPHROLITHOTOMY
IN WHICH LATERAL AND MEDIAN LITHOTOMY
HAD BEEN PREVIOUSLY PERFORMED,
WITH REMARKS ON SYMPATHY BETWEEN THE KIDNEYS.

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As a contribution to renal surgery I trust that the following case will be thought worthy of the attention of the Society. The history is a long one, but I will endeavour to tell it without excess of words.

W. W—, æt. 22, one of five, all healthy, a doubler in a tin mine in South Wales, an occupation involving much stooping and lifting heavy weights, was sent to me at St. Mary's Hospital by Dr. Evans, of Llanelly, on November 26th, 1886. For the last eight or ten years he had had pain in the region of the left kidney, but there was nothing specially noticeable about his urine until four years ago, when it was often high coloured and rich in sediment, and occasionally he passed gravel. In the course of a year from this time he began to have sudden stoppage in the act of micturition, with bladder irritability,

and at times the pain in his loin was more severe, and showed all the characteristics of transient renal colic. The evidence of stone in his bladder became more and more decided, and fifteen months ago, by lateral lithotomy at his home in Wales, three calculi were removed, the largest of them being the size of a hazel-nut, of a fawn colour and smooth surface. In a fortnight he was well, but on the day after the wound was closed he was seized with pain, much more violent than ever before, in the left loin; he was conscious of a stone passing down the ureter, and on the following day there was every indication of another stone being in his bladder.

At this time there was some blood in his urine, and probably pus also, for he describes his water as having deposited a thick white sediment. Since this calculus descended into his bladder fifteen months ago, he has never long been free from the sensation of its presence, though he speaks of the bladder pain as having been somewhat different from that caused by the first set of stones, the stone feeling to him as if it lodged at times in some pouch near the neck of the bladder. The pain is often very acute at the close of micturition, and compels him to keep at absolute rest on his back for three or four hours. He has moreover a continuous dull aching pain in his left loin, which is made acute by lying on his right side. He can precisely indicate the seat of pain, about midway between the last rib and the anterior superior spine of the ilium, and although not actually tender, he very much dislikes pressure at this point. No tumour is to be felt. It is some time since he had an attack of severe renal pain, and he does not think that any stone has descended into his bladder since the one now in it fifteen months ago. His general health has very much deteriorated during the past year; he is in constant pain, his sleep is bad, he has lost flesh, and is quite unfit for work. His urine occasionally contains a small quantity of blood, is acid, of a sp. gr. varying from 1010 to 1020, with numerous pus-cells, but no casts. A small stone in the bladder

was detected by sounding on November 29th, and from his previous history and present symptoms the further diagnosis was made that there was in all probability pyelonephritis with calculi on the left side. Nothing pointed to any mischief in the right kidney.

The question now arose as to the best course to be adopted for the removal of the stones, and it was decided first of all to take the calculus from the bladder, and then, should pain in the left loin continue in its former intensity, diminishing thereby the likelihood of its being a reflex pain from bladder disturbance, to perform lumbar nephrolithotomy. The stone in the bladder being small, and there being obviously some considerable degree of cystitis, I determined to extract it by median perineal incision, with the object of draining the bladder freely afterwards and keeping it at perfect rest. I deemed it better in the circumstances not to use the lithotrite, for fear of setting up more cystitis, which might possibly affect the kidney injuriously. Accordingly, on December 4th, a small calculus weighing forty-five grains (and composed in the main of oxalate of calcium with traces of phosphate of lime and magnesium as determined for me by Mr. Thompson) was removed from the bladder. The lithotomy wound calls for no comment. By December 12th he was passing water naturally *per urethram*, his temperature was normal, and in himself he felt better, having decidedly less pain in the back, and being free at any rate from one source of anxiety. By December 17th, the perineal wound was quite healed.

On December 12th, eight days after the lithotomy, he passed a considerable quantity of gravel, but had no acute pain. Early on the morning of the 13th, however, he began to feel more aching in the loin. This increased gradually during the day, and culminated in the afternoon in very violent renal pain, and his temperature rose to 101·8° F. This attack seemed to settle the question as to there being stones in his left kidney or its pelvis, and accordingly, on December 15th, this kidney was explored by

the usual transverse incision in the loin. There was considerable difficulty in making out where the kidney lay. It could neither be seen nor felt, but there came into view a large cyst, which looked like, and at first was thought to be, distended colon. The real nature of it having at length been determined by puncture with a hypodermic syringe, the cyst was freely incised, and exit was given to some ten ounces of offensive urinous pus, and with it two small calculi, each of them having a highly polished surface, with distinct facets, and about half the size of that which had been previously taken from the bladder. (These also are mainly composed of oxalate of calcium.) The kidney could now be felt high up under the ribs, and evidently very shrunk and small. No calculus could be detected in it, nor surface irregularity, but its extreme wasting led more than one of my colleagues to suggest that it would be better at once to remove it, as being a useless organ. I was not myself of that opinion, and the sequel of the case will show that we did wisely to leave it where it was. It helped very largely, I think, on a future day to save the patient's life.

For four or five days after the operation the patient had a great deal of pain in the neighbourhood of the wound, and opium had to be frequently given to him. There was, however, nothing wrong to be noticed about the parts, and urine escaped freely from the side. There was in fact every indication of the functional activity of this kidney, while the record of the urine passed by the urethra shows that the right kidney was in all probability excreting some twenty to thirty or more ounces a day.

The drainage-tube was not finally removed until January 27th, for it had been deemed advisable to keep it in thus long in order that the cyst might be irrigated and freely drained. The temperature had been normal after January 10th, and so it continued until February 18th, by which date the wound was soundly closed. We had been disappointed, however, to note that the pus had not really

been diminishing in quantity, and notwithstanding his general wellbeing and great improvement in appearance, and his entire freedom from pain or discomfort on the left side, he more than once complained, in the latter half of January, of feeling pain for a few moments in the region of the right kidney. I tried to calm his anxiety and our own by the suggestion that this pain was due to a distended colon, but its more frequent recurrence in the early half of February, and the decided increase in the quantity of pus, made me very suspicious, and I more than once remarked that the right kidney in all probability was affected as the left had been.

All doubt was set at rest on this point on February 18th by rise of his temperature to 101° F., simultaneously with a very sharp attack of pain in the right loin. On the following day he was much worse; his temperature was 103° F., he had several rigors, incessant vomiting, retraction of the right testis, intense pain, and all the symptoms were present of a very severe attack of renal colic. It was noted that on February 18th the quantity of urine suddenly dropped from forty-two to twenty ounces, and both on this and the two following days there was a great diminution likewise in the quantity of pus. On the 19th the urine had again risen to its former volume of forty ounces, and on the 22nd the pain and other symptoms of colic were very much less, and simultaneously there was a vast increase in the amount of the pus, far exceeding any previous quantity. Rightly or not these phenomena were interpreted as a sign that there had been obstruction somewhere to the flow of urine and pus from the right kidney, and that the left kidney, having its pelvis now pretty well free from suppuration, was really the source of the urine which reached the bladder. Now it was that the left kidney was in all probability the means of saving the patient from grave and imminent danger. The right kidney had either struck work, or had been mechanically prevented from excreting urine, and it seems not unreasonable to think that its chances of recovery

might have been worse, or even annihilated altogether, had there been no kidney on the opposite side.

The 24th and 25th of February brought a return of the renal pain, and this was now accompanied with much local tenderness and some suspicion of resistance and fullness in the loin. These were so marked on the 25th that it was decided, more especially as the man had had another very severe rigor, to delay no longer; and accordingly on this day the right kidney was exposed by transverse incision in the loin. It was found to be surrounded by stinking urinous pus, and the finger passed easily through an opening into the pelvis. It was evident that a collection of pus in the pelvis had burst into the perinephral tissue, and so had set up general suppuration around the gland. The kidney itself was considerably hypertrophied, but its appearance and feel, as far as feel could tell, were perfectly healthy. I could find no stones. There was much collapse after the operation, but otherwise the patient did well. The temperature fell at once to normal, urine flowed freely from the side for a fortnight, and then began to diminish, yet it did not entirely cease until March 18th. The wound was rather slow in healing and was not finally closed and sound until the 8th of May. He had all along been very much improving, was free from pain and gaining flesh, and expressed himself as more comfortable than he had been for years. The quantity of urine had steadily increased, and March, April, and May saw it ranging from forty to sixty ounces in the day. It still contained some pus, and it should be noted that once, and once only, two days after the second operation, he said he felt sure that another stone was in his bladder. He had, however, already gone through so much that I felt loath to sound or otherwise disturb him, hoping that if there were a calculus it might ultimately be expelled. He left the hospital on May 26th, well in himself, but still passing a very small quantity of pus, and still complaining of some pain in both loins, which was attributed to stretching of cicatricial

tissue at the site of the wounds. I have heard of him often since, and saw him last on October 24th. He then told me that a week after leaving the hospital he passed four very small stones, after a slight attack of right-sided pain. These in all probability were the stones which, being very small and weighing in all not more than twenty grains, were missed at the second operation, and which had been dislodged from a position of rest, either in the pelvis of the kidney, or more probably the bladder, by his journey home. With this exception he had been free from pain and had gained steadily in weight, health, and strength. He can hold his water for the natural length of time, and only very seldom is there anything which looks like pus. The cicatrices are sound, and there is no tenderness even on somewhat rough manipulation. In January again he wrote that he was better than he had been for years.

Table of Urine passed in 24 hours.

Date. 1886.	Ounces.		Total in 24 hours.		Date. 1887.	Ounces		Total in 24 hours.
	A.M.	P.M.				A.M.	P.M.	
Dec. 5	...	18 ... 11	...	29	30	...	—	...
6	...	14 ... 10	...	24	31	...	—	...
7	...	16 ... 13	...	29	1887.			
8	...	15 ... 14	...	29	Jan. 1	...	28 ... 24	...
9	...	18 ... —	...	—	2	...	— ... 22	...
14	...	23 ... —	...	—	3	...	36 ... 35	...
15	...	Operation.		—	4	...	— ... 28	...
16	...	13 ... 10	...	23	5	...	48 ... 36	...
17	...	14 ... 8	...	22	6	...	40 ... 22	...
18	...	16 ... 12	...	28	7	...	44 ... 22	...
19	...	16 ... 22	...	38	8	...	28 ... 24	...
20	...	20 ... 16	...	36	9	...	30 ... 28	...
21	...	20 ... 24	...	44	10	...	14 ... 16	...
22	...	18 ... 22	...	40	11	...	12 ... 16	...
23	...	20 ... 21	...	41	12	...	16 ... 16	...
24	...	18 ... 20	...	38	13	...	18 ... 20	...
25	...	20 ... 32	...	52	14	...	24 ... 24	...
26	...	15 ... 17	...	32	15	...	28 ... 20	...
27	...	24 ... 40	...	64	16	...	23 ... 24	...
28	...	26 ... 28	...	54	17	...	26 ... 22	...
29	...	36 ... 24	...	60	18	...	30 ... 18	...

Date. 1887.	Ounces		Total in 24 hours.		Date. 1887.	Ounces		Total in 24 hours.	
	A.M.	P.M.				A.M.	P.M.		
19	20	24	44		9	26	24	50	
20	20	28	48		10	20	22	42	
21	26	22	48		11	22	22	44	
22	22	18	40		12	18	20	38	
23	28	18	46		13	23	24	47	
24	40	24	64		14	22	20	42	
25	28	24	52		15	22	22	44	
26	28	18	46		16	23	20	43	
27	27	26	53		17	20	22	42	
28	28	24	52		18	8	12	20	
29	26	26	52		19	16	24	40	
30	16	30	46		20	18	22	40	
31	22	22	44		21	23	16	39	
Feb. 1	20	25	45		22	26	26	52	
3	20	25	45		23	24	24	48	
4	27	18	45		Operation.				
5	24	20	44		25	18	16	34	
6	26	23	49		26	12	24	36	
7	28	24	52		27	—	—	49	
8	18	30	48		28	—	—	51	
Date. 1887.	Ounces in 24 hours.	Date. 1887.	Ounces in 24 hours.		Date. 1887.	Ounces in 24 hours.	Date. 1887.	Ounces in 24 hours.	
Mar. 1	40	23	52		14	50	6	60	
2	45	24	50		15	40	7	54	
3	43	25	50		16	48	8	47	
4	40	26	44		17	45	9	50	
5	50	27	62		18	41	10	70	
6	45	28	52		19	43	11	48	
7	66	29	56		20	46	12	52	
8	54	30	62		21	42	13	60	
9	47	31	54		22	42	14	52	
10	32	April 1	50		23	44	15	50	
11	43	2	46		24	44	16	48	
12	26	3	39		25	48	17	51	
13	32	4	50		26	45	18	42	
14	34	5	38		27	44	19	48	
15	52	6	50		28	42	20	44	
16	82	7	56		29	38	21	56	
17	72	8	56		30	54	22	42	
18	58	9	52		May 1	62	23	44	
19	62	10	50		2	48	24	50	
20	56	11	32		3	48	25	46	
21	48	12	47		4	54	26	50	
22	64	13	48		5	57

Beyond the record which has been already given there are one or two points of interest in this case to which I should now like to refer. It will be remembered that in the last session of the Society the discussion upon a "Case of Obstruction of one Ureter by a Calculus, accompanied by complete Suppression of Urine," brought forward by Mr. Godlee, was directed to the supposed "sympathy" between the two kidneys. The chief objection raised to the state of the one kidney having actually caused suppression of urine in the other, by sympathy, was in that case the fact that the other and presumably uninjured kidney was not a perfectly healthy organ ('Proc.,' N. S., No. 16, p. 238), that it had in reality been diseased for some time before the fatal attack seized the patient. Mr. Godlee had no doubt that a diseased would be more disposed than a healthy kidney to stop its secretion under the influence of irritation on the opposite side, not meaning to say, present knowledge perhaps not letting him go as far as to say, that such irritation would give rise to suppression in a perfectly healthy gland. With that opinion I should feel inclined to agree, but I would ask if this apparent sympathy may not rather be due to the irritation in one kidney "finding out," as it were, the mischief which is going on, and may have been going on for some time unsuspected or unknown in the fellow organ. Constitutional crises of very different kinds may exercise a like influence, and the "finding out" of a kidney's weakness may be the work of irritation or disturbance in other parts than the opposite kidney. This was what happened, I take it, in a case at this moment (January, 1888) under my care, the case of a patient from whose left kidney a large calculus was removed six weeks ago, and who it is believed has a calculus to be presently taken from her right kidney also, and in whom the first symptom of any kidney trouble whatever arose a fortnight after the operation of hysterectomy by my late colleague Dr. Meadows early last year. The symptoms began with great acuteness and suddenness,

with high temperature, violent pain, and frequent vomiting, with rigors and pus in the urine, which rapidly increased in quantity. It was believed at the time, and with this diagnosis already made she first came under my observation, that an acute suppurative pyelitis had been set up by direct extension from the hysterectomy wound, a wound which nevertheless had healed without untoward symptoms. I operated accordingly in the expectation of having to drain a suppurating pelvis, and possibly abscess cavities in the kidney itself. But the kidney was healthy, and a calculus firmly lodged in the hilum was the only thing wrong. The stone must have been there before Dr. Meadows removed her uterus, but its existence was first made manifest by the constitutional disturbance which his operation entailed. We may conjecture—we cannot of course say with certainty—that irritation in one kidney really does no more than this to its fellow, and there is no closer bond of sympathy between them.

Again, a renal calculus may be long quiescent, and give rise to no symptoms, neither pain nor pus, and the kidney in which it lies may excrete a normal quantity of perfectly healthy urine, yet nevertheless the kidney so affected cannot be as certainly healthy as one in which there is no stone. The gland is predisposed by the very presence of the stone to suffer, and it may even be to fail in conditions of constitutional disturbance, in conditions such as may arise, for example, from operation upon its fellow, and by the stress then thrown upon it its own weakness is revealed. A goodly number of cases are on record in which this apparently has been the sequence of events, while in none of them can it be said that the disturbance in the one kidney directly caused the mischief in the other. Thus in a case of Dr. F. Lange's (given in detail in Brodeur's work, '*Affections du Rein*,' 1886, p. 320) nephrolithomy was performed on the left side, where for years there had been pain, on October 2nd, and all went well until November 25th, when the patient was seized with severe pain, the urine fell in quantity,

and in four days the pain was so distinctly localised in the right kidney, which had never previously been affected, with at the same time almost complete suppression of urine, that right lumbar nephrotomy became necessary. Before proceeding to this, however, the wound in the left loin was again laid open, and several small calculi were removed. The right kidney was found surrounded by pus, there was pus in the pelvis, and the ureter was blocked by calcareous concretions which the operator succeeded, by the use of a syringe, in washing down into the bladder. A like experience befell Mr. Lucas in having to perform nephrolithotomy on a patient's left side, four months after the removal of the right kidney for calculous pyelo-nephritis of long standing.

More striking than these cases is the case of Lucas-Championnière (recorded in Brodeur's work, p. 352). A woman, æt. 42, had been passing calculi and suffering severe left lumbar pain for eleven years. In November, 1884, a small calculus was removed from the bladder, but there was no marked cessation of her other symptoms. In November, 1885, there was more severe pain in the left loin, and only a few drops of urine were passed in the twenty-four hours. Then for four days there was complete suppression. On the 21st a few drops were passed, and then again for four days there was no urine. Such at any rate was the story when she was admitted into hospital on November 30th, with high temperature and frequent vomiting. There was no urine, and Lucas-Championnière diagnosed obstruction of the left ureter, and "reflex anuria" on the opposite side. An exploratory loin incision was made on December 5th, when the finger opened a large abscess in the kidney substance, but no calculus was found. There was much flow of urine from the wound, but not until twenty-one days after was there any passage by the urethra. On December 30th urine ceased to flow from the side. Early in January (1886) a calculus was detected in and removed from the bladder, and later in the same month she had a return of

severe lumbar pain with high temperature, with the passage of a long blood-clot but no stone. A case like this is of much importance in considering the question of sympathy between the kidneys, although I cannot refrain from expressing grave doubts as to this patient having had a right kidney at all. If "reflex anuria" be the true explanation of the suppression, which clearly was of the "obstructive" variety in Lucas-Championnière's case, it is to say the least remarkable that reflex suppression is so rare a thing in cases of calculous pyelo-nephritis. And this appears the more remarkable when we remember that the conditions predisposing to the formation of stone must affect both kidneys alike, and that when there is certainly a calculus on one side, there is some, though it may not be very strong, presumptive evidence that there is a calculus on the other, and that the other kidney, even though there be an absence of the symptoms of stone in it and it be doing its work well, may be in a condition, not perhaps of active disease, but in a condition in which disease may be very readily established. Was that the state of things in the case recorded to-night, and in others like it, or had the affection of the one kidney which was known to be diseased no influence whatever, neither direct nor indirect, on the later affection of the other kidney which had previously shown no symptoms at all? No certain answer can be given, but whatever be the true explanation the facts of the case remain, and have an important bearing on renal surgery, especially on the operation of nephrectomy, and on preliminary abdominal exploration for determining the state of each organ.

Had I performed nephrectomy in this case I know now that I should have done very wrong, but I have never quite been able to satisfy myself that had the abdomen been explored, and we had found the left kidney much atrophied and with a huge dilated pelvis, seemingly in such a condition as to suggest, as indeed at a future time it was suggested, that it was a worthless organ and had

better be removed, and we had at the same time felt that the right kidney was healthy, if such a thing can be determined by the feel, that it was moreover enlarged sufficiently to do the work of two, and there had been no discovery of the small calculi which it contained, we might not have been led to take the left kidney away. And thereafter might have arisen that event which has been recorded in the history, when the right kidney was in its turn placed *hors de combat*, was inadequate in fact for the needs of the individual, and the left, the atrophied and seemingly useless kidney, had to carry on the work of both glands. Is it as likely that the patient would have been alive now if the left kidney had been removed at the time of the first operation?

Abdominal exploration may be a good thing, but it may be a very evil thing if there be a neglect of the considerations which are suggested, not I think without some warrant, by the case brought before the Society to-night, for the surgeon may be led by it to the removal of an organ which the patient at some future time may sorely need.

In some very interesting "Reflections suggested by a Series of Cases of Renal Calculus," Mr. Godlee ('Practitioner,' Nov. and Dec., 1887) points out that we must not be in too great a hurry in urging a patient to submit to the removal of a kidney; for it must be remembered that though the organ may be a source of discomfort and of possible danger, it still does a certain amount of work. "It is exceedingly difficult," he says, "to estimate the exact condition of that of the opposite side, and I have shown elsewhere (making reference here, he is, to the case brought before this Society last session) that disturbance occurring in or in the neighbourhood of a much-diseased kidney may cause great functional derangement, amounting even to complete stoppage of that of the other side, although the latter may be much less diseased, in fact, comparatively speaking, healthy."

This question of the supposed sympathy between the

kidneys is clearly a most important one, and needs much further elucidation. If I needed an excuse for bringing this case before the Society I should say that we do not by any means know all that there is to be known; and with Mr. Godlee, I will add that "we have yet to learn a good deal about the history of patients who are left with only one kidney" ('Practitioner,' Nov., 1887, p. 329).

Note.—The patient was present when this paper was read, and was then in every respect in perfect health.

(For report of the discussion on this paper, see 'Proceedings of the Royal Medical and Chirurgical Society,' New Series, vol. ii, p. 367.)