CHADWICK (J. R.)

A Case of Nephro-lithotomy in which no Stone was Found.

BY

JAMES R CHADWICK, M.D.,

BOSTON.

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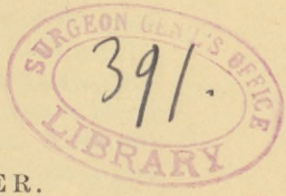

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A CASE OF NEPHRO-LITHOTOMY IN WHICH NO STONE WAS FOUND.

By James K. Chadwick, M.D.,
Boston.

Mrs. ——, of Cambridge, consulted me by advice of Drs. M. Wyman and J. P. Oliver, on October 20, 1881. She was forty-five years of age, had borne six children and had five miscarriages; menstruation, which had habitually been normal, had lately lasted but two or three days, been excessive in amount and attended with severe spasmodic pains. She had been losing flesh for a year but was not notably emaciated. The bowels were evacuated daily. Micturition was habitually normal but at times attended with pain. Her chief complaint was of attacks of violent colic in the epigastric region and occasionally in the pelvis during menstruation; they dated from the last miscarriage, two years previously. The attacks occurred every two or three days, generally toward night, and apparently as the result of eating when fatigued, worry, grief and other emotions. The pains would usually begin in the epigastric region and run down the left arm; they were exceptionally attended by palpitation of the heart. She had had inflammatory rheumatism when eighteen years, and malaria when twelve years of age; there had been no implication of the heart. She had had chronic diarrhœa in her youth and a liability to recurrence ever since. For two years she had depended upon McMunn's Elixir of Opium in twenty- to forty-drop doses to obtain relief from her sufferings when the attacks came on. Absolutely no organic lesions were found on examination of all the organs and excretions.

Without going into the details of treatment, I may say that in the course of a year all the symptoms were relieved by rest,

absence from home, the relinquishment of many intellectual obligations, and by the administration of hypnotics, diuretics, tonics, etc. The opium was entirely renounced.

The earliest record that I can find of the prominence of urinary symptoms is "irritable bladder," in 1885. Prof. E. S. Wood then analyzed the urine and reported the presence of "a very slight amount of albumin," and of an "excess of mucus in the sediment; some of the mucous coagula contain blood globules. There is a slight excess of vaginal or bladder epithelial cells, considerable calcic oxalate, mostly in the form of prismatic crystals. One clump, as large as the head of a pin, of dumb-bell and prismatic calcic oxalate crystals, is held together by mucus." In commenting on the analysis Dr. Wood said: "I see no evidence of much cystitis; . . . there is, however, oxaluria, and there may be a pelvic calculus."

By various alkaline waters, and especially by repeated absences from home, with its peculiarly onerous duties and cares, this condition was so ameliorated that I rarely saw my patient until the spring of 1888, when she again applied for relief of painful and frequent micturition and spasmodic attacks of pain in the region of the left kidney, with some local tenderness; nothing could be felt, but the urine was found to be deficient in amount, of low specific gravity, and to contain mucus, many calcic oxalate crystals, a few renal cells and hyaline casts, some pus, a few blood-corpuscles, and a very slight trace of albumin. I learned that for several months previously she had undergone great mental strain and worry. She improved under treatment, so that when I sailed for Europe, July 10th, the pus had disappeared, the blood and calcic oxalate diminished, the bladder symptoms ceased, and the attacks of renal colic become much less frequent. On my return, on January 1, 1889, I found that her sufferings had been on the increase for three months; the attacks of colic in the left renal region were more frequent, and there was a constant ache there as well as augmented tenderness; similar attacks of pain, though less severe, were now felt in the right kidney. I learned that on December 14th, while in New York, she had consulted Dr. L. B. Bangs, whose analysis of urine was essentially the same as those of Prof. Wood, upon which I had relied, but his interpretation of

the conditions differed from ours in that he diagnosticated "chronic diffuse nephritis (?)", whereas Dr. Wood and I had previously diagnosticated only *irritation* of the parenchyma of the kidney produced by the presence of a calculus in the left kidney. Dr. Bangs, consequently, had counselled against any surgical procedure for the removal of the stone, which we had already broached but not urged. In consequence of this radical divergence of opinion, early in March I summoned in consultation Dr. J. P. Oliver, her former medical attendant, and Dr. D. M. Cheever, Professor of Surgery in the Harvard Medical School, who both concurred in my diagnosis of calculus in the left kidney, and, in view of the recent occurrence of pain on the right side, the probability of another in the right kidney. We agreed in advising early operation upon the left kidney, and, if necessary, subsequent operation upon the right kidney. We all thought that any considerable delay would be hazardous as likely to lead to organic disease of the kidneys, which we did not believe to be then present.

Soon after this my patient visited New York, and, at my suggestion, sought the opinion of Dr. R. S. Weir, who wrote me on March 27th, as follows: "I concur with your judgment as to the propriety of making a left lumbar incision, hoping to find a renal calculus. It may be that, on removal of this, if found, the pain on the right side may cease, as sometimes happens; if not, then nephrotomy on that side will be necessary."

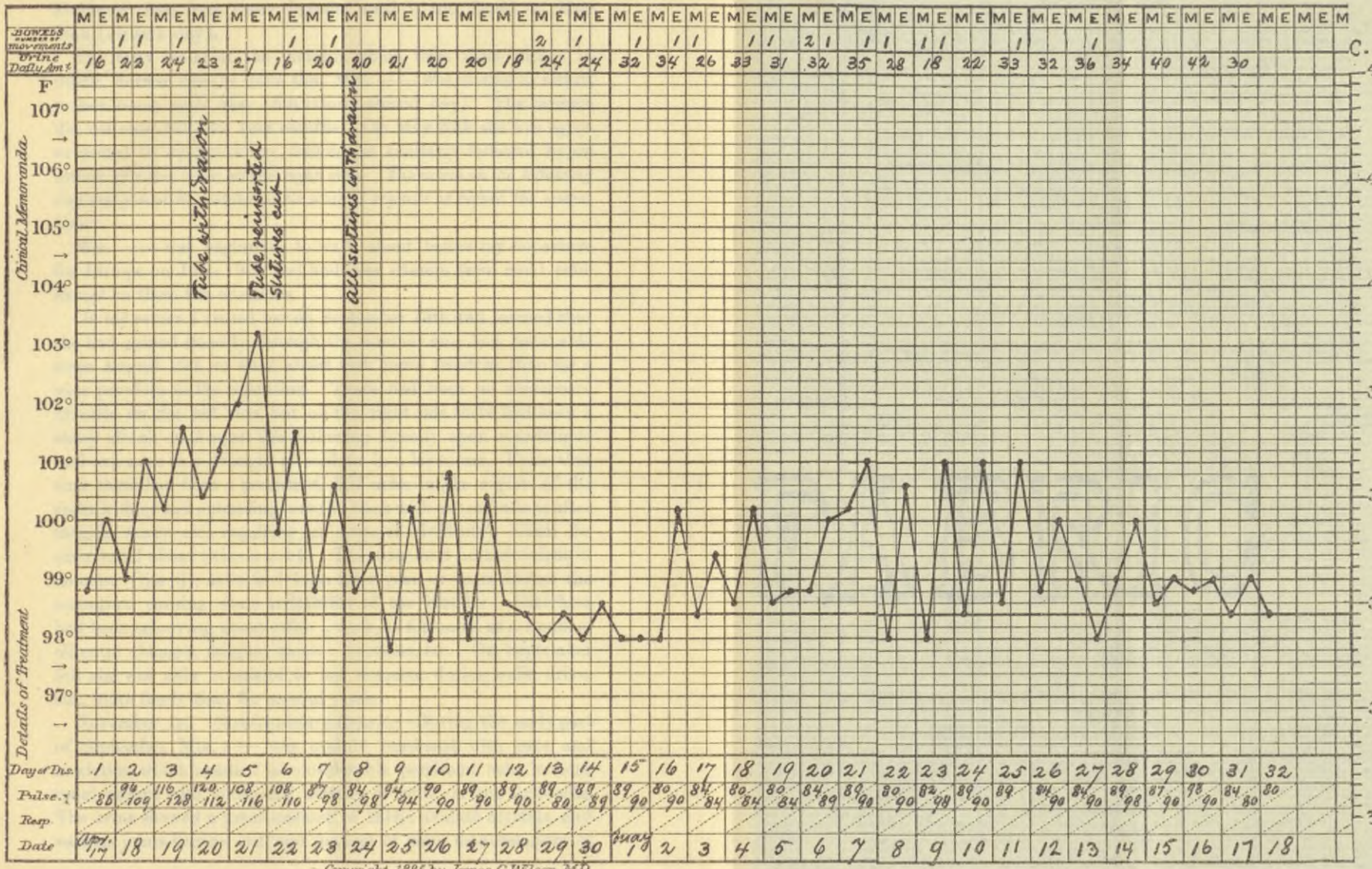
Fortified by these opinions I operated on April 17th, with the assistance of Drs. Cheever, G. H. Lyman, J. P. Oliver, C. M. Green, and G. Haven. An incision was made through the skin half an inch below and parallel to the last rib on the left side, which, owing to the great amount of sub-cutaneous fat, was extended to seven inches; through the muscular wall of the abdomen it was only three inches in length. Before the transverse muscle was incised the lower margin of the kidney could be distinctly felt rising and falling with each inspiration. When the abdominal cavity was opened the perineal fat welled up through the incision but was easily pushed aside and the kidney exposed to view. It was of normal size, color, constituency and mobility. Its pelvis could be easily reached by the fingers, but no trace of a

calculus could be felt there or elsewhere. A long needle was then passed through the cortex into the parenchyma in various directions in the expectation of detecting a stone, but in vain; an incision three-quarters of an inch long was then made through the capsule and my little finger forced through the cortex until it entered the pelvis. By means of a uterine sound the pelvis was subsequently explored thoroughly and a fruitless attempt made to insert a fine probe into the ureter; nothing having been found the pelvis was washed out with a forcible stream of hot water in order to remove any undetected concretions: none were seen. After holding together the walls of the incision into the kidney for five minutes, the oozing of blood, which had been considerable, ceased. A glass drainage-tube was then inserted down to, but not into, the kidney, and the wound in the abdominal walls closed by many sutures of silk and silkworm gut.

The accompanying chart requires but little comment. Bloody urine escaped from the tube in small amount for three days. On the fourth day, it having seemingly ceased, I made the mistake of withdrawing the tube, fearing lest it should establish a permanent urinary fistula, as has occasionally happened in such cases. This was followed by an immediate rise of pulse and temperature, which subsided upon the re-establishment of free drainage by removal of some of the sutures and the insertion of a smaller tube which was left in place until the twelfth day. The urine was drawn with a catheter until the eighth day, after which it was passed voluntarily. The diet was exclusively liquid (milk, beef-tea, clam-water, etc.) until the eleventh day. Several thirty-drop doses of McMunn's Elixir of Opium were required every day to relieve the pain in the wound for the first two weeks.

There was absolute freedom from renal colic on either side until the twenty-third day, when she had a severe attack on the right side, lasting two or three hours, which came on an hour after mental worry introduced from without the house.

The appended table of analyses of urine, made by Prof. Wood at various times from 1885 up to and including the day before the operation, demonstrates that whereas calcic oxalate crystals in considerable numbers had invariably been present in the urine before the operation, from the date of the operation the urine was


BOWELS number of movements
Urine Daily Am't
Clinical Memoranda
Details of Treatment
Tube with Stanton
Tube reinserted Sutures cut
All sutures out Thermometer
F
C.
107°
106°
105°
104°
103°
102°
101°
100°
99°
98°
97°
42°
41°
40°
39°
38°
37°
36°
35°
Day of Dis.
Pulse
Resp
Date
Copyright, 1885, by James C. Wilson, M.D.

absolutely free from these deposits until it was found on May 26th (fortieth day).

The fatty walls of the incision, which were three inches in depth, were so slow to unite that Mrs. —— was unable to return to her home until May 18th (thirty-second day). The incision did not close fully for four months. On May 25th she was again subjected to mental worry, which was similarly followed by an attack of renal colic on the right side. *The urine on the following day was found to contain calcic oxalate crystals as before the operation.*[1]

Mrs. —— was beginning to walk about before my departure for Europe on June 19th, and had been exempt from renal colic except on these two occasions.

On my return I visited her on September 15th and learned that she had gained steadily through the summer and had been able since August 15th to walk about with more freedom than for a year previous to the operation. There had been no recurrence of colic on the left side, but on the right side there had been a sharp attack on August 22d following directly upon over-fatigue and exposure to a draught of cold air in a horse-car. From that time there had been a persistent dull ache in the region of the right kidney and extending into the back with exacerbations after fatigue, worry, etc., requiring ten drops of McMunn's Elixir for their relief about twice a week. The urine had been deficient in amount (Ojss–ij), as it had been for a year or more before the operation, causing some irritability of the bladder. Diarrhœa had been occurring about twice a week, as formerly, as a result of climatic changes, fatigue, mental emotions, etc. On September 5th she was able to attend to her domestic duties, walk, drive, etc., more freely than for several years.

November 1st. *Supplementary Report.*—During the early part of September Mrs. —— was unduly burdened with care and anxieties, which resulted in considerable persistent ache in both renal organs with occasional attacks of colic on the right side. The urine showed a great amount of calcic oxalate crystals, and various joints became stiff and the seat of pain, manifestations of

[1] Unfortunately the urine was not analyzed subsequent to the first attack of colic on the twenty-third day.

the gouty diathesis which she inherited from her father. During October she was treated by electricity to the joints, and later with colchicum under the care of Dr. J. J. Putnam, with such relief that she has left for a month's visit in New York, free from renal ache or colic, and her joints comparatively painless. The daily amount of urine excreted cannot be made to exceed one and a half pints.

Two letters have been received from my patient while this paper is going through the press, both of which support the views enunciated above:

"NEW YORK, November 17th.

"DEAR DOCTOR: I am already much better, and have only been here a little over a week. Could you see me going to the theatre, out shopping, and even going to church twice a day, you would be inclined to doubt the evidence of your senses. My joints are giving very little trouble, though the arms still stay stiff. I have no pain to speak of in either kidney, and I pass from two to three quarts of water daily. My appetite is very good, and I sleep well. Can't I go home soon?"

"NEW YORK, December 1st.

"DEAR DOCTOR: I walked to church this morning from Thirty-fourth to Fifty-fifth Street, over a mile. My appetite is glorious. I never have an ache or pain in either kidney. . . ."

The last report from my patient (dated December 25th) is satisfactory:

"Time is a thief, as you've heard tell;
But if all time were ~~speech~~ as well
As ~~gems~~, when back to me you gave
The gift of health and strength I have,
All hearts and doors would open wide
To catch the thief, whate'er betide,
For time and age can bring no shame,
But only honor to *your* name."

"With Christmas greetings."

While preparing for publication a report of this case, I tabulated the details of the examinations of the urine by Prof. Wood—omitting many incomplete ones of my own—to see if, by close comparison, any clew could be obtained for differentiating between renal colic due to the passing of calcic oxalate crystals *through* the kidney, and renal colic due to their aggregation and permanent arrest in the form of concretions (calculus) *in* the kidney.

It is a sad comment on the present state of our knowledge on this subject, if six physicians and surgeons, with more than the average knowledge of such diseases, and, in my case, with an opportunity of studying the symptoms for several years, should all concur (with the possible exception of Dr. Bangs) in making a decided diagnosis of one or more renal calculi when none appears to have been present.

Of course, there is a possibility that concretions were washed out of the pelvis of the left kidney at the time of the operation without being detected; but, in that case, the pain would not have been arrested in the right kidney, or, if reflex from the left, would not have returned in the right subsequently when it was still absent in the left. The perfectly normal size and character of the pelvis of the left kidney, and the absolutely healthy appearance of its parenchyma, would likewise militate against such an assumption.

A study of these tables demonstrates the accuracy and discernment of Prof. Wood, as expressed in the following letter, which he sent to me after examining the tables:

"HARVARD MEDICAL SCHOOL LABORATORY,
"BOSTON, November 7, 1889.

"DEAR DOCTOR: The points which appear to me especially interesting are:

"1. The appearance of pyelitis between March 28 and May 2, 1888, which gradually diminished and disappeared by June 8th. Evidences of pyelitis appeared again in February, 1889, and continued until the time of the operation. The pyelitis and persistent oxaluria show inflammation due to the calcic oxalate; but

ANALYSES OF URINE BEFORE OPERATION, BY DR. E. S. WOOD,

Sugar and bile pigments were invariably absent.

Dates.	Color.	Reaction.	Urophœin.	Indoxyl.	Urea.	Uric acid.	Albumen.	Specific gravity.	Chlorides.	Earthy phosphates.	Alkaline phosphates.	Amount of urine in ounces.	Amount of sediment.
1885 Sept. 30	None	Acid	...	...	None	+	*Very* slight trace.	1017	None	...	...	...	+
1888 March 28	None	Acid	None	None	—	+	*Very* slight trace.	1015	None	None	—	...	+
May 2	None	Acid	...	...	...	...	*Very* slight trace.	1013	...	...	...	38	+
May 15	Pale	Acid	...	...	...	...	*Very* slight trace.	1011	...	...	...	...	+
June 8	None	Acid	...	...	...	...	*Very* slight trace.	...	...	...	...	28	+
Sept. 11	.....	...	...	...	...	...	Absent	1015	...	...	...	17	+
Sept. 19	.....	...	...	...	...	...	*Very* slight trace.	1012	...	...	...	28	...
Dec. 29 Analysis by Dr. L. Bangs, of New York	None	Acid	+	+	+	+	Absent	1026	None	None	None	...	+
1889 Feb. 19	High	Acid	+	None	+	+	Very slight trace.	1025	None	+	None	19	+
April 16 Day before operation.	Pale	Acid	—	—	—	+	Very slight trace.	1012	—	—	—	...	—

PROFESSOR OF CHEMISTRY IN THE HARVARD MEDICAL SCHOOL.

Sugar and bile pigments were invariably absent.

SEDIMENT:						Remarks by Professor E. S. Wood.
Mucus	Calcic oxalate.	Blood.	Pus.	Casts.	Other ingredients.	
In excess.	Considerable in form of prismatic crystals, one clump as large as head of pin, dumb-bell and prismatic crystals held together by mucus.	Globules in mucous coagula.	.....	.....	Bladder or vaginal epithelial cells in excess.	No evidence of much inflammation, else there would be pus. There is oxaluria, and it may be that there is a pelvic calculus, in which case the pain is sometimes referred to the bladder or vulvar region. No positive diagnosis of calculus.
Much excess and leucocytes.	Much in form of octahedral, oval and dumb-bell crystals in aggregations and casts.	Few globules.	.....	Few, some with blood and vesical cells adherent.	Excess of renal cells; no excess of bladder cells.	
...	Much, octahedral and dumb-bell crystals.	Occasional globule.	Considerable.	Few hyaline and finely granular of very small diameter; occasional calcic oxalate.	Chiefly amorphous matter; excess of small round cells.	
...	Few aggregations of small crystals.	Occasional globule.	Very little.	Occasional small hyaline.	Slight excess of small, round cells	Less pus, cells, and calcic oxalate than on May 2d.
...	Few aggregations of oval and dumb-bell crystals, few large octahedral.	Few globules	None.	.....	.....	
...	Numerous octahedral, oval and dumb-bell crystals.	.....	.....	.....	.....	
...	Less, and mostly in crystals: an occasional large oval and dumb-bell crystal and aggregation of small octahedra	Occasional globule.	Occasional cell.	.....	Occasional group of pelvic cells.	
...	Many crystals also of uric acid.	Few globules	.....	.....	Increase of leucocytes.	"Imperfect metamorphosis of tissue and chronic diffuse nephritis (?)–that is to say, she had granular casts, uric acid crystals, and crystals of oxalate of lime at different times, together with small percentage of albumen, which varied from time to time."—L. B. Bangs, Dec. 14, 1888.
...	Little; partly in aggregations of an occasional cast.	Few globules	Ltttle in clumps with small round cells.	Occasional small hyaline and granular.	.....	But little change in character of sediment since last May. Urine is much too concentrated to-day, only 565 c. c. being passed. I find no large calcic oxalate crystals, but there is now and has always been more or less oxaluria.
...	Occasional small aggregation of small crystals and casts; very few large oval and dumb-bell; less than in March.	Very little.	Very little; occas'l clump with small, round cells.	Very few hyaline and finely granular of medium diameter, some with vesical cells adherent.	.....	This analysis throws no new light on the case.

ANALYSES OF URINE

Dates.	Color.	Reaction.	Urophœin.	Indoxyl.	Urea.	Uric acid.	Albumen.	Specific gravity.	Chlorides.	Earthy phosphates.	Alkaline phosphates.	Amount of urine in ounces.	Amount of sediment.
1889 April 18	Brown	Acid	...	...	+	+	Slight trace.	1027	...	...	...	22	+
April 19	Brown	Acid	...	...	+	+	Very slight trace.	1025	—	...	...	24	+
April 20	High, slightly brown.	Very acid.	...	...	+	+	Very slight trace.	1023	—	...	...	23	+
April 21	High, not brown.	Acid	...	...	+	+	Slight trace.	1024	—	...	...	27	+
April 22	High	Acid	...	...	+ 2½ pr. ct.	+	Slight trace.	1023	—	...	...	16	—
April 24	High	Acid	...	...	+	+	Very slight trace.	1018	Much	...	...	20	+
April 26	Higher than on 24th.	Acid	...	...	+ 2.56 pr. ct.	+	Slight trace.	1017	Much	...	...	20	+
April 29	High	Acid	...	...	+ 2.8 pr. ct.	+	Very slight trace.	1015	—	...	...	24	+
May 1	High	Acid	...	...	+	+	Very slight trace.	1015	—	...	...	32	+
May 3	Pale	Acid	...	...	— 1.33 pr ct.	...	Very slight trace.	1009	—	...	...	26	+
May 7	None	Acid	...	...	Sli'tly	—	Very slight trace.	1016	—	...	...	35	+
May 14	High	Acid	...	...	None 2.1 pr. ct.	+	Very slight trace.	1014	—	...	...	34	+
May 26	None	Acid	...	...	None	+	Very slight trace.	1018	None	...	...	...	+
June 18	High	Acid	+	+	+	+	Very slight trace.	1023	None	...	None	...	+
Sept. 18	None	Acid	...	...	—	+	Very slight trace.	1010	None	...	...	...	+

AFTER OPERATION.

Sediment:						Remarks by Professor E S. Wood.
Mucus.	Calcic oxalate.	Blood	Pus.	Casts.	Other ingredients.	
...	*None.*	Chiefly blood.	.....	Considerable number of hyaline, brown-granular, and epithelial.	Much renal epithelium; little fibrin.	This examination shows what would be expected after the operation, except perhaps the entire absence of any calcic oxalate crystals.
...	None.	Little free blood.	Occasional clump.	Comparatively few casts, hyaline, brown-granular, blood, fibrinous and epithelial.	Little renal epithelium and pelvic epithelium.	The casts are fewer than on yesterday.
...	.....	Fewer globules	.....	Fewer casts of same character.	.....	
...	None.	Much less.	.....	Same, except less bloody.	.....	
...	.....	Occasional globule.	Much less.	Occasional.	Slight excess of leucocytes and small round cells occasionally in clumps.	Much less pus, cells, and casts than yesterday.
...	.....	.....	More than on the 22d.	Same.	.....	
...	.....	Very little.	Considerable.	Few granular and fibrinous	Considerable pelvic epithelium.	
...	None.	.....	Little.	Occasional hyaline.	Excess of pelvic epithelium.	Evident that local acute inflammation of renal tissue is over.
...	Same as on 29th.	.....	.....	.....	.....	
...	None.	Occasional globule.	Very little.	None.	Few small round cells.	Evidence of pyelitis nearly disappeared.
...	.....	Occasional globule.	Very little.	Occasional hyaline with vesical cells adherent.	.....	Slight excess of small, round cells
...	.....	.....	Little.	Few hyaline, some with an occasional oil globule and fatty vesical cells adherent.	Little pelvic epithelium; few small clumps of cells and pus.	
...	Little, in octahedral and oval crystals.	Occasional globule.	Little; some in small clump with small, round and caudate cells.	An occasional, brown, straight tubule.	.....	
...	Numerous octahedral, oval, and dumb-bell crystals.	Considerable.	Considerable; occasional clump	Occasional hyaline and granular, some with calcic oxalate dumb bells adherent.	Considerable pelvic epithelioma; round and caudate pelvic cells.	This specimen shows the old condition of things, oxaluria and irritation of the kidney and pelvis of the kidney.
...	Large amount in very large crystals of every form.	Few globules	.....	Occasional small cast.	Excess of renal cells.	There is more calcic oxalate than in any previous specimen.

the fact that the pyelitis disappeared for a time would look as if it were due to calcic oxalate sand, rather than to an oxalate calculus which was too large to be passed through the ureter.

"2. The excessive diminution of the normal urinary solids during the whole time; and,

"3. The habitually small amount of urine passed, combined generally with a low specific gravity.

"Very truly yours, EDWARD S. WOOD."

Unfortunately, neither Dr. Wood nor I noticed the intermittence of the pyelitis during the course of the treatment. No reference is made to this point in the most comprehensive and recent work of Newman;[1] in fact, he is singularly reticent on the subject of renal colic due to calcic oxalate crystals in the urine. He says (p. 252): "The symptoms which characterize renal calculus, as I have already said, are lumbar pain extending at times to the groin and testicle, paroxysmal, aggravated by movements, and accompanied or followed by hæmaturia, pyuria, and frequent micturition; but, while these are the indications of renal calculus, experience has abundantly shown that all these symptoms may be present without the existence of a stone in the kidney or the presence of vesical disease. And, on the other hand, calculi may exist in the kidney for years, and lead up to a fatal termination, without the development of symptoms indicative of their presence."

He quotes, with approval, this among other conclusions of Mr. Henry Morris, in an address "On Some Points in the Surgery of the Kidneys": "Pain alone, when persistent or frequently paroxysmal, and giving rise to sickness and sweatings, or subject to exacerbations during perfect rest, justifies lumbar explorations."

My patient had all the symptoms indicated in the above quotations, and yet there was no calculus, and the operation, consequently, was unjustifiable.

[1] Lectures to Practitioners on Diseases of the Kidney Amenable to Surgical Treatment, by David Newman. London, 1888.

The frequency of this error is made manifest by the tabulation of cases made by Dr. Dickinson,[1] which shows "that out of thirty-five persons operated on for stone in the kidney, a calculus was found to be present in twenty-two, whereas in thirteen no stone was discovered."

I said above, that if it had been known that no stone was present, my operation would have been unjustifiable. The opinion of experts on this point would undoubtedly be unanimous, yet all the ordinary measures recommended by various writers to prevent the appearance of calcic oxalate crystals in the urine had been tried without avail, and the operation worked an immediate, though, perhaps, not a permanent, cure, and an apparently long-continued amelioration.

I cannot learn that the instantaneous disappearance of calcic oxalate in the urine after the operation, when it had been found on every analysis during the preceding four years, as demonstrated by Prof. Wood, has been previously noted. It is a point that may become of extreme importance in its bearing on the etiology of calcic oxalate in the urine, which has always been an unsettled question. Roberts[2] says: "Oxalic acid constitutes, probably, one of the penultimate stages in the series of decompositions through which the effete tissues pass preparatory to their final exit from the body. . . . It is easy, therefore, to understand how oxalic acid should exist in urine; also, that it may be partly derived from the blood, and appear in the urine at the moment of secretion, and partly be produced after the urine is secreted, by conversion from uric acid."

Beneke, as quoted by Roberts,[3] asserts that

"1. Oxaluria, a condition which accompanies the lighter and severer forms of illness, has its proximate cause in an impeded metamorphosis—that is, in an insufficient activity of

[1] Newman: loc. cit., p. 428.

[2] A Practical Treatise on Urinary and Renal Diseases, by William Roberts. Third Amer. edition, 1879, p. 77.

[3] Roberts: loc. cit., p. 81.

that stage of oxidation which changes oxalic acid into carbonic.

"2. Oxalic acid has, if not its sole, its chief source in the azotized constituents of the blood and food; everything, therefore, which retards the metamorphosis of these constituents occasions oxaluria.

"3. Such a retardation of the metamorphosis of the azotized constituents of the blood may be determined by the following causes:

"*a.* Abuse of azotized articles of food (direct retardation).

"*b.* Abuse of saccharine and starchy articles of food (indirect retardation).

"*c.* Insufficiency of the red blood-corpuscles and (eventually) diminished oxidation.

"*d.* Insufficient enjoyment of pure, fresh, ventilated air.

"*e.* Organic lesions which in any way impede respiration and the circulation of the blood.

"*f.* Conditions of the nervous system which bear a character of depression, whether these arise primarily from mental derangement or from pathological states of the blood.

"4. Excess of alkaline bases in the blood, which, as numerous observations tend to show, plays an important part among the etiological conditions of oxaluria; and it is not improbable that an increased production of lactic and butyric acids in the digestive canal, consequent thereupon, impedes the development of the red blood-corpuscles, and thereby generates that chlorotic state which so often occasions and accompanies oxaluria.

"5. Catarrhal conditions of the intestinal mucous membrane, in case they are accompanied by oxaluria, have at most only a common source. They may determine oxaluria by causing deranged digestion, but cannot be considered its proximate cause."

My personal experience with patients suffering from the effects of oxalic acid in the urine would lead me to attribute far greater influence in its production to "conditions of the

nervous system which bear a character of depression," than to any of the other causes assigned by Beneke or other writers. I have recently had under my care four other cases suffering from calcic oxalates in the urine, in no one of which could any cause other than " worry of mind " be discovered ; in two of them this cause was most pronounced. In one, after ten years' persistence of oxalate of lime in the urine, with frequent recurrence of renal colic, the patient died of an intercurrent affection, and the autopsy revealed a perfectly normal condition of both kidneys, ureters, and bladder. The others are still under observation.

That a hysterical condition or temperament may be an essential cause of renal colic is made evident by the following unpublished case of Dr. H. C. Coe, though the exciting cause seems to have been uric acid in the urine, and not oxalic—an unessential difference.

Case of Hysteria, simulating Impacted Renal Calculus. (Communicated by Dr. H. C. Coe, of New York.)—On January 1, 1887, I was called to see Mrs. P., a healthy young woman, of whose history I knew little, except that she had been treated for pelvic trouble, and was of a neurotic temperament. She was a good liver, and drank considerable wine. She presented the typical symptoms of renal colic, which she stated had developed suddenly that morning. She thought that she could recall a similar attack, but had never passed a calculus. I remained with her the entire afternoon, giving forty-five minims of Majendie without relieving the pain. I then administered two ounces of chloroform, which only gave temporary relief. The urine was scanty, containing uric acid in excess. The pain was localized in the region of the left kidney, and did *not* radiate downward as low as the pelvis. I attended the patient for a week, during which time she was able to retain but little nourishment, and was seldom free from paroxysms of pain, except when under the influence of an opiate. She was seen by the late Dr. James B. Hunter, who agreed with the opinion at which I had arrived early in the case—that there was a renal calculus impacted in the pelvis of the kidney, or in the upper portion of the ureter.

The patient's condition became so alarming that I considered that surgical interference was warranted, and asked Drs. Weir and Bull to see her. It was necessary to nourish her by enemata. A thorough examination was made under ether. As she was quite stout, this was not entirely satisfactory. Supposed enlargement of the left kidney was made out. Examination *per vaginam* and rectum revealed nothing abnormal. Explorative lumbar section was proposed, to which the patient readily consented. Dr. Weir exposed the kidney, which was of normal size, palpated it thoroughly, and explored the pelvis with a needle; the ureter was also palpated as low as the pelvic brim. No calculus could be felt. During the operation the patient's pulse became so feeble that it was necessary to give hypodermics of brandy and ether. On recovering from the anæsthetic she expressed herself as feeling relieved from the pain; in fact, *it did not reappear*. She was soon able to take stimulants and nourishment by the mouth, and convalesced rapidly. The urine continued to be loaded with uric acid for several days, but contained no blood; nor did I ever find a calculus, though the daily amount of urine was always saved and carefully examined. The patient manifested a strong hysterical tendency throughout her convalescence, and I began to suspect that this might be the principal trouble. My suspicions were confirmed two weeks after the operation (the patient then being able to sit up), when I was called to her at two o'clock in the morning, and found that she had an attack of pain precisely similar to the first one—this time on the *right* side. My patience was now thoroughly exhausted. Without asking any questions, I at once clapped my ether-cone over her nose and anæsthetized her. Under this treatment the pain speedily disappeared, and my promise to repeat the same on every occasion when she had a return of the trouble prevented any subsequent attack. In a few days she was up and about, and as she left the city soon after, I never saw her again. I do not believe that the patient ever had a calculus. She may have had some irritation of the kidney—due to acidity of the urine, the result of her indiscretion in eating and drinking, and the pain was exaggerated through her hysterical tendency. The entire relief of the pain as soon as she knew that the operation had been performed, and the repetition of the same in the opposite side, with

its prompt disappearance when she saw that she had ceased to be an object of sympathy, all seem to favor the explanation which I have suggested. There remain, however, certain unexplained facts—notably, the incessant vomiting which nearly placed her life in jeopardy. That a woman without any actual organic trouble should submit to such a serious operation seems almost incredible."

A legitimate query now presents itself as to the cause of the temporary disappearance of the calcic oxalate immediately after the operation, and the corresponding freedom from renal colic. I regard it as due purely to mental influences; to the mental condition induced by submission to an operation which was known to endanger life, and in addition to the absolute withdrawal of the patient from the persons and surroundings that constituted the disturbing mental influences, and even to the temporary forgetfulness of them engendered by the sufferings attendant upon the convalescence. The first two attacks of colic after the operation—upon the twenty-third and thirty-ninth days respectively—occurred within two hours after acknowledged occasions for mental perturbation. The summer was passed in comparative tranquillity of mind, and the pain was slight and rarely felt; in the autumn, troubles again assailed her, and the calcic oxalate, with its attendant suffering, reappeared. On leaving home, in November, the pain ceased almost immediately.

In this connection a new theory to explain the cure of nephralgia after nephro-lithotomy where no stone is found,[1] is worthy of mention from the weight of Prof. Tiffany's authority and the evidence adduced in support of his views. Reasoning upon the frequent failure of surgeons to find a stone in the kidney of patients presenting all the symptoms of renal calculus, it appeared likely to Dr. Tiffany "that from one cause or another swelling of an irritated kidney might occur, which swelling, being resisted by the capsule, could

[1] Free Division of the Capsule of the Kidney for the Relief of Nephralgia, by L. McLane Tiffany, A.M., M.D., of Baltimore. Republished from the Transactions of the American Surgical Association, May, 1889.

induce a sensation of pain." Acting upon this theory, he cut down upon the kidney of a patient presenting the typical symptoms of renal calculus, and, after failing to detect a stone by passing a needle into the kidney in various directions, and by exploring the pelvis and each calyx, "the capsule of the kidney was then freely slit open for a distance of three inches or more. The edges of the cut capsule gaped widely, which was considered evidence that tension had existed." Three weeks after the operation, pain in the loin was complained of, and for a while after the wound had healed, "yet the pain steadily diminished in intensity, and the patient returned to her regular habit of life, took exercise, attended to her household duties, and went to the country in the spring."

Unfortunately, we are given no series of urine analyses, and no statement of the mental condition of this patient, so that a discrimination between our opposing theories of causation cannot be instituted. I do not see, however, that his theory can explain the relief experienced in my case, for the reasons that (1) the incision through the capsule was only three-quarters of an inch in length, and, therefore, inadequate to afford much relief to the assumed tension of the renal parenchyma; (2) the strong presumption established by the urinary analyses that the pain was due, both before and after the operation, to the passage of calcic oxalate crystals; and (3) finally, that the cause of the calcic oxalate in the urine was mental disturbance.

Dr. Tiffany gives a valuable summary of twenty-one cases of nephro-lithotomy in which no stone was found, of which he found reports in current literature. He wisely refrains from claiming support to his views which several of them appear to give, for in the majority the evidence as to the incision and its effect is meagre and contradictory. There is absolutely no evidence deducible from them in favor of the theory of causation which I advocate in connection with my case, and manifestly could be none until after the suggestion had been made and disseminated.