THE VALUE OF EXPERT RADIOGRAPHY AND CYSTOSCOPY IN THE DETECTION OF OBSCURED TUBERCLE IN THE KIDNEY.

A DEMONSTRATION GIVEN IN THEATRE 5, ON MARCH 29TH, 1909, AT THE LONDON HOSPITAL.

By E. HURRY FENWICK, F.R.C.S.,
SURGEON TO, AND A LECTURER ON CLINICAL SURGERY AT, THE LONDON HOSPITAL.

[WITH COLOURED PLATE.]

As my knowledge of the radiography of caseating tubercle of the kidney has increased,¹ I have been encouraged to hope that I might meet with an unequivocal example of the disease in order that I might demonstrate to you, simply and yet impressively, the precision with which expert radiography and cystoscopy reveals to us this form of renal tubercle.

A patient sent to me a fortnight ago by Dr. Marr, of Dunstable, has afforded me the opportunity I have sought. She is a married woman, aged 36, and she complains of pain in the left kidney. It is the *right* kidney, however, which is really diseased, although it is painless, and although I cannot detect it by manipulation. Naturally, she wishes me to operate on her aching large left kidney, but I have persuaded her to allow me to remove the right kidney altogether!

Such divergent views and so strongly expressed an opinion must needs be based on the best of clinical evidence. I propose to adduce this and thus to justify my line of action before the patient is anaesthetized by describing to you the exact condition of her right kidney. I show you a pen and ink sketch (Fig. 1) which I have made of that organ. I want you to understand that this sketch, which I have sent to Dr. Marr, is not a conception, it is no fancy diagram. It is seriously meant to represent the actual fact, the exact size of the right kidney, its contour, and the bulgings on its surface. Indeed, when I have removed the kidney you shall place it on the sketch, and you will then be able to see how precisely it corresponds to it in shape and size.

You notice the contour of the upper pole, how it is widely scalloped to represent bulgings. These rounded prominences are due to cysts. Each cyst is marked by a cross (x). I contend that each cyst is filled with caseous material like cream cheese, which is permeated with lime phosphate—the inspissated remains of tuberculous abscesses. The central area has xxx on it. This area marks a small encapsulated caseous mass, but the caseous material is drier, for the cyst is older in formation than the others. It is in close proximity to the renal pelvis, but it does not open on to it. Note also the cyst uncrossed which occupies the lower pole of the kidney. Let me transfer this sketch to the blackboard (Fig. 2). You notice I make no attempt to represent a renal pelvis. There is no pelvis; it is replaced by fibrous tissue. Note also that I make the ureter small and thin, not like the huge thick ureters I have always drawn in other tuberculous kidneys.²

No; this ureter is a fibrous cord. The kidney is useless, because the ureter has been closed for years.

Now this sketch and this dogmatic statement concerning a kidney I cannot feel, and which the patient has not felt for years, will be startling if it prove accurate in every

detail. Yet there is no difficulty in the diagnosis; the entire matter is "simple to excess," as I hope to show you, for it is based on those modern methods of scientific research—expert radiography and cystoscopy—which have not as yet received the attention they deserve.

The patient was then anaesthetized, and the right kidney was removed by the lumbar incision.

The kidney was unrecognizable as a kidney. It was quite small (Plate, A), and when it was laid on the tissue paper sketch it corresponded with it almost exactly in size and outline.

The upper pole and the middle third was seen to have been transformed into bulging yellow cysts (Plate, A), the septal lines of which ran exactly as marked in outline on the sketch. Each cyst contained lime cream material of obscured tuberculous pus (Plate, B).

At the middle of the shrunken gland was, as described, an isolated collection of crude tubercle, hardish and yellow. The lower pole of the organ had also become cystic, but the contents of these cysts was different to that anticipated by the operator. He expected a thin caseous material, but it proved to be a dark urinous fluid. There was no pelvis; it was merely a tough mass of connective tissue. The ureter was an impervious cord.

All the details mentioned before the operation, with the exception of the contents of the lower cysts, were accurate enough to satisfy the most exacting of critics.

The caseous cream-cheese-like material was subsequently examined by Dr. Pantou, who reported that it was composed of fat, no cholesterine, considerable inorganic residue. Calcium salts formed 15 per cent. of weight of the total substance. Unluckily the clear fluid of the lower cysts was lost.]

Let us look at the many and varied lessons which this case can teach us.

What were the data at my command which enabled me with so much confidence to remove a painless kidney and leave an aching one? On what grounds did I venture to describe the right kidney as useless and to draw its exact shape and size—to delineate its cysts and to anticipate what the contents of those cysts would be? To affirm it had no pelvis and that its ureter was a cord, not a canal?

First, I knew the patient had had tuberculosis of the urinary tract. Eighteen years ago she was sent to me, when she was a girl of 17, by Dr. Steele of Hemel Hempstead, suffering from cystitis. I examined her with the then new instrument, the cystoscope, and found ulceration of the bladder near the right ureter. I subsequently published the details of the case.³ I did not know then, as I do now, that this ulcer in the ureteric area generally indicates renal tuberculosis of the same side.

Incidentally I may mention that I treated her with Koch's tuberculin, and she improved, and I lost sight of her. An enthusiast might jump to the conclusion that the obscured condition to which this kidney tubercle has passed is due to the treatment by tuberculin. This is not so, I feel sure. Eighteen years' experience of tuberculin has proved to me it rarely "cures" urinary tubercle. It generally reduces the absorptive toxicity of the debris and the caustic destructiveness of the urine. I have never published or taught that tuberculin was a cure, but I always use it if I can, because it is the most important therapeutical remedy we possess for allaying the bladder distress of early tubercle.

Reading through these old notes, illuminated by the light of eighteen years' experience of cystoscopy, I realized

x CYST FILLED WITH LIME CREAM

xxx CRETIFIED TUBERCLE

Fig. 1.—Sketch of right kidney made before the operation.

(To illustrate Mr. Hurry Fenwick's paper.)

A

Advanced "massive tuberculous degeneration"
of Right Kidney.

B

Hemi-section showing thick white putty substance
in sacs of Right Kidney.

C

Radiograph showing oval shadows (white arrowed) of loculated sacs of "massive tuberculous degeneration"
of Right Kidney.

that the right kidney had probably been tuberculous when I first saw the patient. But what was its condition now, for it was painless, and the urine contained but little pus. Had the ureter closed and the kidney become useless? This was the most probable explanation of the quiescence.

To solve this problem I cystoscoped the patient last week, and showed the visitors and students a scar on the right side of the posterior wall of the bladder, just where the ulcer had appeared eighteen years ago. I showed pages of notes and drawings of this bladder which I had made eighteen years ago, and together we compared the then and the now. Without cavil the ulcer of 1891 had healed. I then decided to pass a ureteric catheter up to the right ureter, but I could not find an orifice. The ureteric lips were there, but they were sealed. I examined per vaginam in order to feel the ureter as it crosses the back of the bladder. I could hardly feel that tube. The deduction was that the ureter was impervious, and therefore that the kidney was useless.

The next question was, If the kidney is functionless, is its presence detrimental? What has happened to the tuberculous deposits of eighteen years ago? Have they obsolesced? The patient was x-rayed by Mr. Coldwell (Plate, C), and a dense shadow was found in the right renal region. Careful examination of this under bright light revealed that it was composed of a congeries of curved sharp-edged shadows obviously cast by cysts, and these together assumed the shape of a kidney. Each cyst was clearly defined. Some of the cysts were darker than others. By previous experience—for I have been examining cysts under the x rays for some time—I knew that these cysts contained material more or less impregnated with lime phosphate. If the patient had been tuberculous the cyst would contain the usual cream-cheese or putty-like material.

I had now all the facts at command. I was therefore able to designate in the sketch the size of the kidney, its cysts and the contents of the cysts, the atrophic ureter and pelvis.

I should like to say here what a fine series of cyst densities this case reveals. They range from the solid to the semi-solid and the liquid, a valuable series for comparison with those hydatid cyst shadows which project from the dome of the liver.

But, you say naturally, Why operate at all; the other kidney is the painful one? The one you have removed, although useless, is inert.

No, pardon me. I catheterized the left ureter and found rod-shaped bacilli and evidences of tuberculous degeneration in the urine, and these, with the clinical symptoms, satisfy me that the left kidney is in a state of consecutive nephritis (Albarran), induced probably by absorption from the foci in the right kidney. It was wiser, I consider, to remove any possible source of absorption, especially as the right kidney was movable; the operation would therefore be easy and rapid and the shock of no moment.

But how could I tell the kidney was movable without feeling it? The answer contains a point of practical value which is worth noticing and remembering.

The kidney is always radiographed for me in two positions; in one the patient takes a deep breath and holds it while the x rays are switched on; the effort thrusts and keeps a mobile kidney down. For the preparation of the next plate the patient breathes easily and naturally; the mobile kidney rises and falls and is radiographed. If the shadow of the kidney corresponds in position in the two plates I have to deal with a dangerously-fixed kidney. If the shadow has moved the kidney is movable and the operation is relatively easy.

Finally, you might ask this question: Having removed

this inert kidney, are you content? By no means. The surgeon's task has only just commenced. The attempt must now be made to repair the left kidney by therapeutics.

There are three areas to repair.

The renal pelvis, which is affected by the tubercle bacillus. This is done by graduated minute doses of Koch's new tuberculin. But that is not curative.

A coincident attempt is made to wall in the destructive processes by lime, either by administering lime chloride or lactate—what you will, as long as you imitate Nature's method of cure by giving lime, for I hold the profession are blindly chasing bacteria to root them out, and are forgetting to wall them in and render them innocuous.

The structure of the kidney, especially the cortex, is also repaired by giving crushed kidney—a valuable medicine I have had in active employment for fifteen years, and the powers of which I am only just beginning to realize; and lastly, the

general health is improved and nutrition aided by fresh air and the addition of sugars and fats to the diet.

The wound healed rapidly, and the patient's last report (June 16th, 1909) showed she was improving.

REFERENCES.

- ¹ E. Hurry Fenwick: *The Value of Radiography in the Diagnosis of Urinary Stone*, Chapter x, p. 118.
- ² Pre-operative Demonstration of Tuberculous Foci in the Kidney, *BRITISH MEDICAL JOURNAL*, January 27th, 1906.
- ³ *Handbook of Clinical Electric Light Cystoscopy*, p. 177: Mary A., aged 17.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

QUININE DERMATITIS.

THE following instance of acute dermatitis resulting from the smallest doses of quinine may be interesting. A lady who knew that she was most susceptible to quinine, and always had a rash after taking it—for instance, one dose of "a one-day cold cure" caused eruption all over her within twelve hours, and desquamation lasting more than a fortnight—took only two half-doses, that is, one teaspoonful, of bynin amara; this preparation appears to contain less than $\frac{1}{4}$ grain to the drachm. During the day the usual eruption appeared on the hands and arms, and by night had spread over the whole body, with intense irritation. She was advised to continue with even smaller doses in the hope that she might become accustomed to it. During the next two days the condition remained the same; the irritation was worse at night; she had no headache, and practically no eruption on the face. The quinine was stopped. On the fourth day the hands, and particularly the legs and ankles, were very greatly swollen; the palms especially were red and shining, and the feet less so, but the fingers and toes were stiff, feeling numb and distinctly cold to the touch. Baths, with bran, oatmeal, etc., gave no relief. By the seventh day desquamation began on the hands and arms, and extended to the trunk and lower limbs, the epidermis separating in large strips and flakes with almost casts from the toes. During the fourth week this was not completed, and the general appearance was as like scarlet fever as could be. It is somewhat curious that the same patient has most unpleasant symptoms on taking sodium salicylate.

Wallington, Surrey.

WALTER GRIPPER.

STRYCHNINE POISONING: RECOVERY.

ALL cases of poisoning should be published, with the treatment adopted.

At midnight, on May 26th, 1909, Mrs. P., aged 39, was noticed to be suffering from twitchings. About fourteen

Fig. 2.—Blackboard sketch of kidney made before the operation.