this early exploratory operation, is the real secret of success in these as in all cases of cancer, and one a consideration to which every other is of secondary importance.

Fig. 3.—The portion of transverse colon excised, with the omenta attached. A, transverse colon showing longitudinal muscular band; B and C, omenta attached to it.

THE ACCURATE DELINEATION OF TUBERCULOUS FOCI IN EARLY DISEASE OF THE KIDNEY IN WOMEN BEFORE OPERATION IS UNDERTAKEN.*

(WITH COLOURED PLATE.)

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From this brief clinical review of renal tuberculosis, and from my statistics of successful nephrectomy (1 death in 45 cases) which I have laid before you, you will agree with me that the diagnosis and treatment of a primary tuberculous kidney in women is comparatively easy, provided the patient has renal pain, a renal tumour, an evening temperature, tubercle bacilli in her urine, and that the cystoscope demonstrates a characteristic change in the orifice of her aching and enlarged kidney. This is an advance of the last decade. But I want you, gentlemen, to-day, to learn how to take a much greater step forward in the accurate detection of this disease—a step which I feel convinced marks real progress in the future conservative surgery of the kidney. I will show you how a diagnosis can be made in some cases in which the disease is *latent*, even when no pain or tenderness is felt in the

kidney region, when no enlargement of the kidney can be discovered by the surgeon, when no tubercle bacilli in the urine can be found, when there is no guiding temperature—in fact, when no symptoms exist to help you to a correct diagnosis of kidney trouble at all—certainly none to permit you to assert definitely that tuberculosis of either or which kidney is present. So much I can teach you, but I am still more ambitious. I desire to demonstrate to you that you can in certain cases take pen or pencil and sketch with accuracy the areas of latent tuberculous disease in such a kidney, and mark you, not with diffidence, nor with hesitation, but with confidence and with certainty.

There is a woman, aged 44, in my operation ward, who was sent to me on September 21st, a little more than a fortnight ago, by Dr. J. Mackay of Halifax, for cystitis. She has had frequency and pain in micturition and pain in the perineal body for a year. There are no other symptoms, no pain in the loins, neither kidney can be felt. There is no temperature. The urine is acid and sterile—it contains small crystals of calcic oxalate—no tubercle bacilli. Dr. Eastes's full report is as follows:

Specimen.—Mrs. H., received September 21st, S.G. 1024, a distinct trace of albumen. Urates had separated but were dissolved by warmth before centrifugalizing. The deposit is chiefly composed of small crystals of calcic oxalate, frequently aggregated into small masses embedded in mucus. There are a very few granular tube casts, some red blood discs, and a small number of renal pelvic cells. There is no pus. No tubercle bacilli have been found.

Dr. Mackay suspected tuberculosis, but both his experts have failed to find the bacilli. Two London expert bacteriologists have examined for these bacilli at my request and have also failed to find them. This is so unusual in my tuberculous cases that I make an especial note of it. Thus the patient has no evidence, subjective or objective, of renal tuberculosis. But if you will come to No. 5 theatre I will cystoscope this patient, and demonstrate to you what I found a fortnight ago, when I examined her, namely, a displaced, retracted, left ureteric orifice, and a bladder which is only slightly eroded. On these two grounds alone I diagnose a left renal tuberculosis. I shall proceed further to draw for you a diagram of the exact state of her left kidney on the blackboard, marking those areas which I know to be affected by tuberculosis, and outlining the characteristic condition of her diseased renal pelvis, and the shape and calibre of her affected ureter. I shall then remove the left kidney without opening it, and after splitting it let you compare it with the sketch on the blackboard, so that you yourselves can judge whether my contention that an accurate appreciation of the disease in this kidney can be afforded by the cystoscope has been rightly urged or not. I may add, this patient was admitted yesterday, not for your edification nor to illustrate my lecture, but to be cured, if possible, of a dangerous disease. Moreover, I am not to-day doing anything unusual in making a blackboard diagram of latent kidney disease before operation. I now do this routinely, when I am certain of my facts.

[The patient was now anaesthetized, and the left ureteric orifice was shown by means of the cystoscope to each member of the class and the various visitors to the clinic. The opening was seen to be displaced, retracted and red, the left ureteric bar appearing as a broad, grooved, red fold (Plate D, E). The rest of the bladder was shown to be superficially eroded. A rough diagram of the kidney was then made on the blackboard. Three salient features were delineated.

1. Dense adhesions at the upper and lower poles. The middle third of the cortex was declared to be free from any adhesions.

2. The ureter was represented as greatly thickened (to the size of an ordinary lead pencil) and its calibre was declared to be narrowed.

3. A longitudinal section of the kidney was pictured so as to demonstrate a slightly dilated pelvis. The upper and the lower calyces were shaded to show that they were eroded by tuberculous ulceration, and from these erosions miliary tubercles were dotted in, as being sparsely scattered towards the cortex.

The middle third of the kidney was marked off as comparatively healthy.]

I should like to have supplemented this rough blackboard sketch with a letter I sent back with the patient to Dr. Mackay on September 21st, in which I drew a better

* An extract from a post-graduate demonstration in No. 5 Operating Theatre, October 9th, 1905.

PRE-OPERATIVE DELINEATION OF THE TUBERCULOUS KIDNEY BASED ON CYSTOSCOPIC FINDINGS.

Cystoscopic appearance of the trigone, showing broad red fold of the left interureteric bar and displaced "retracted" left ureteric orifice.

Magnified view of "retracted" left ureteric orifice.

diagram, giving a little more detail, but I have not got it by me. (Dr. Mackay kindly returned it. Fig. 1.)

Operation.

The left kidney was then exposed by the usual lumbar incision, the healthy middle third of the cortex was shown (Plate c), the tough adhesions at the upper and lower poles were demonstrated and divided with scissors, and the kidney was removed. The organ was then split longitudinally, and compared with the pre-operatively made diagram, and found to agree even in the smallest detail. The specimen was painted next day by Danielsson (Plate A, B, Sectional halves. D, Cortex).

Three questions would present themselves, and these I attempt to answer:

1. What does a dragged out, "retracted" ureteric orifice denote?

I believe I am responsible for this term, and for establishing the fact that this condition is a very important feature of one class of tuberculous kidneys. I have entered very fully into the matter in my book on *Obscure Diseases of the Kidney*, pp. 171-181. I have known of it since 1885, and have now collected sufficient material of it in this great hospital to assert that when this condition is well marked it can be relied upon absolutely as indicating tuberculous infection of the corresponding kidney. But how does it afford the surgeon a knowledge of the kidney changes? I will give you the steps. The retracted, displaced, ureteric orifice points to a thickened ureter, shortening lengthwise. This involves narrowing and obstruction of the channel of the ureter. This again spells back-pressure of urine upon a thickened, unyielding

pelvis, and a tough renal parenchyma, for all these kidneys are small and tough, and many show, microscopically, interstitial nephritis. This back-pressure on the pelvis invariably means that the upper and lower calyces will suffer, for I have remarked that the upper and lower poles of the kidney suffer first in all back-pressures, consequently the stress of the tuberculosis must fall chiefly on these traumatized areas. Hence they will be eroded. Spreading from the eroded ulcerated surfaces of the upper and lower calyces and radiating to the cortex there will be, if the stage be an early one, tuberculous changes. This latter means miliary tubercle and inflammation of that part of the cortex—namely, upper and lower poles of the kidney. This, again, invariably demands tough adhesions.

Hence we build up our kidney little by little on the blackboard, only stipulating that the history is within the two years' duration and that the urine is sterile, for if septicity has started in such a kidney no prescience can foretell upon what areas the destructive changes will fall, or what alteration will ensue in the contour of the organ, and hence no diagram can be made before the operation if the urine be septic. You say, "How simple and easy it all is!" Quite so, but it has taken fifteen years to collect the facts upon which this simple diagram is drawn.

2. Does a retracted ureter always mean a thickened, lead-pencil-sized ureter which can be felt per vaginam? Yes, always; but remember, a thickened ureter is not always a retracted ureter. Hence when you feel a thickened ureter by the vagina or bowel, do not diagnose tuberculosis. You may and should suspect it, and should investigate the urine for bacilli, but do not

jump to the conclusion that it must necessarily indicate tuberculosis. A thickened ureter merely means chronic ureteritis. It is the extreme shortening and retraction of the ureter and of the orifice which seems characteristic of this particular type of renal tuberculosis.

The third and last question is: Is it met with often and in both sexes? I have found it in only 18 per cent. of my proved cases of renal tuberculosis, and much more often in women than in men.

Now, lastly, gentlemen, you may say, *Cui bono?*—of what value is it to be able to draw, before operation, the exact condition of a tuberculous kidney? This knowledge may allow us in the future to resect the upper and lower poles, and to leave the healthy middle of the kidney to go on working for the good of

Fig. 1.—Half page of a letter sent to Dr. R. J. Mackay on September 22nd, 1905, in reference to Mrs. H. (Eighteen days before operation.)

the body. It is sound knowledge and it makes for progress in conservative surgery. We have only to recognize the disease early enough, and be prepared to act if the middle third of the kidney permits resection. This particular kidney did not permit me to resect, and you will note I anticipated this and found what I anticipated—namely, that there were commencing changes of tubercle in the middle third of the gland.

[The patient left the hospital healed and much relieved at the end of the third week.]

LEPROSY IN JAPAN.—It is stated that at the approaching session of the Imperial Diet of Japan legislation will be proposed with the object of enabling the Government to control the spread of leprosy.