Presidential Address

ON THE

MEDICAL ASPECTS OF SOME URINARY DISEASES.

Delivered before the Section of Urology of the Royal Society of Medicine

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MANY of the problems met with in uro-genital diseases are of joint medical and surgical interest, requiring the combined efforts of surgeons and physicians for their proper elucidation, and offering a field for both types of mind and for both kinds of training. The contemplation of the physician and the technique of the surgeon combine to secure the patient's welfare, for in the last analysis it is the study of the pathology of his disease and a survey of his general state which must dictate both diagnosis and treatment.

THE ENLARGED PROSTATE.

At first sight it would seem that the diagnosis and treatment of simple prostatic enlargement with its mechanical disabilities, to which our first president, the late Sir Peter Freyer, made such a valuable contribution, is a purely surgical affair; and no doubt in a large number of cases the medical interest in this condition is reduced to a minimum. And yet the mortality in prostatectomy, even to-day, is by no means a negligible affair. It is probably not less than 10 per cent. by the two-stage method, nor less than 15 per cent. by the one-stage method.[1] And this consideration alone raises the question of the desirability of reducing, if possible, the risks of operation. When the patient is elderly, as he frequently may be; when the urine is infected, as is not uncommon; or when the trouble coexists with some other known defect which may introduce its special risk during or after operation—then the case is no longer entirely surgical. Elderly patients are sometimes the subjects of latent diseases (only discovered by a complete overhauling), which may, or may not, constitute a bar to a major operation. Recently, during a routine examination of a candidate for prostatectomy, I found the patient to be a case of chronic lymphatic leukæmia. The reason he had been sent to me was that he was short of breath, and this symptom was thought to be of cardiac origin. Some treatment led to great improvement in his condition, and he stood his operation very well. I think most careful surgeons like their prostate patients examined methodically before the final decision is given relative to excision. I know this is not an invariable rule, because a short time ago I was asked to see a very ill man a week after his prostate had been removed, and whilst examining the bases of his lungs I came across a good-sized lump, densely hard and firmly fixed to one of his ribs—no doubt a metastatic deposit from a primary growth in the prostate, which I learned had been unusually difficult to remove. When my surgical colleagues ask me to see these candidates for prostatectomy, I find, after examination, that they can be placed in one or other of these three groups: (1) Cases in which examination reveals no abnormality which is not commensurate with the patient's age, or only reveals trivial defects which cannot be regarded as likely to prejudice the results of operation. (2) Cases in which one or more defects add to the normal risk of the procedure—defects in the heart, kidneys, blood-vessels, bronchial tract, lungs, portal system or central nervous system—but in which the degree of the defect does not contra-indicate major surgery, given very definite surgical indications for the procedure. In a good many cases some preliminary treatment will reasonably lower this added risk. (3) Cases in which one or more of these same disabilities is present to a degree sufficient seriously to imperil life by the operation, and in which little or no improvement is to be expected from treatment.

The exact surgical position is, of course, made clear to the physician at the time the patient is sent for examination, or during consultation. The surgeon may estimate that eventual difficulties are not likely to arise within a time shorter than the duration of life estimated by the physician; if so, and especially if the patient come into group 3, prostatectomy is definitely discountenanced. In group 2 come a good many cases demanding very careful judgment, as all who are familiar with this type of patient will know.

Mr. John Pardoe, a friend and former colleague of many of us here this evening, was speaking to me recently of the cases, very grave but fortunately uncommon, in which late hæmorrhage followed prostatectomy, and he confessed himself puzzled as to their meaning. An obvious suggestion is that the underlying cause is sepsis; but this is by no means certain, or demonstrated, and here seems one more problem in the elucidation of which physicians and surgeons are probably both concerned.

Whilst it is the patient's general state, rather than the local lesion, which has medical bearings in prostatic enlargement, it is both the general and the local condition which are of interest to the physician in

NEPHROLITHIASIS.

Indeed, the surgical interest in this disease centres round the end-result rather than round the pathological process. It is true that our metabolic studies do not, as yet, give us any very definite lead in the direction of the prevention of uratic and oxalic deposits in the kidney and renal pelvis; but, at least, the main principles of prevention are understood, and it is fairly certain that a large number of patients are kept in a safe position with regard to the reformation of calculi when once they have been frightened into obedience by the experience of a nephrotomy or a nephrectomy. One of the most interesting problems that presents itself is the type of case in which calculi are known to be present in the kidney, perhaps in both kidneys, but the condition is largely latent as regards pain or hæmaturia. In these cases it is important to assess, as nearly as may be, the probable future history of the patient in respect of his trouble. His renal adequacy, and the question of sub-infection of the urinary tract—perhaps of the intermitting kind—are points which need investigation, and must be taken into account, together with points of general health and future mode of life, before a sound opinion can be given as to whether any surgical procedure shall be adopted and what its nature shall be.

PHOSPHATURIA AND OXALURIA.

Phosphaturia and oxaluria are probably of more medical than surgical interest, when not complicated by concretions of a gross kind. The known associations of both of these conditions with gastric and intestinal dyspepsia, and the close association of phosphaturia with nerve states, make it of paramount importance that the patients suffering from them should be fully and carefully examined. In the great majority of the cases it is found that such symptoms as are referable to the urinary tract are of secondary and not of primary origin, and that they yield to treatment on general medical lines, if this is carried out thoroughly and perseveringly. Again and again, however, this class of case requires, for its satisfactory elucidation, that both surgical and medical aspects of the problem be passed in review.

I will not stay to refer to difficult cases of *renal pain* with no obvious cause discoverable by the surgeon, and the moot question of exploration that arises in connexion with them; to cases of obscure *hæmaturia*,

[1] Since writing this Mr. Thomson Walker informs me that statistics at St. Peter's Hospital show a smaller total mortality than this: 8·13 per cent. in 1276 cases from 1901 to 1918.

or to cases of *dysuria* in which, again, instrumental examination reveals no renal or vesical origin. The importance of taking a wide view of all these cases as they present themselves becomes more and more apparent with the growth of knowledge. As I am this evening dealing with the urinary tract and not with renal conditions—though the distinction is frankly a loose one—I shall not enter into the question of mobile kidney and its obvious interest for both physician and surgeon.

INFECTION.

But it is, after all, the large and important subject of infection which provides the chief meeting-ground for physicians and surgeons in urinary diseases, whether the infection be of the urinary tract, of the kidney, or of the peri-renal tissues. I suppose the fact that so-called primary infections of the urinary tract are still very largely dealt with by surgeons is a survival of the old doctrine which taught that all infections were "ascending" in nature. Practitioners are still to be met who visualise a stone in the bladder, or some other gross lesion, so soon as a case of acute urinary infection presents itself. It is perhaps only fair to suggest that another reason why surgeons still hold a lien over many of these cases is that they have been more in the van of progress than have the physicians in the matter of elucidation of the problems connected with this subject. All the same, I am quite sure that it is in the interest of patients generally—I do not speak of any individual patient, nor of any individual practitioner—that the chief centre of interest in these cases should shift to the medical side. I say this quite apart from the fact that the general majority of these acute cases do very well with medical treatment. I say it because there are so many associated ætiological factors of a general kind, requiring careful consideration, in order to arrive at a complete diagnosis and a convincing programme of treatment. The state of the bowel, the nervous and vascular tone, the patient's habits—all these need investigation, because they have important bearings upon treatment during the actual attack, and even more important bearings upon prophylaxis against future relapses. This is not to say that the surgeon is incapable of taking long views, nor of giving excellent advice on all the points just mentioned, any more than it is to say that the physician is possessed of no technical ability. It is rather that this class of case is better adapted to the physician's routine methods of work than to that of the surgeon.

It is generally agreed that instrumental investigation is not only unnecessary but contra-indicated in acute urinary infections, except those of the urethra in gonorrhœa. And the more acute the infection the more emphatic the contra-indication. But from a lack of appreciation of the true pathology of these acute primary infections, this rule is by no means always followed. If, however, an acute infection persists, *despite adequate treatment* (and the opinion of someone fully versed in the particular problem may well be that the treatment has *not* been adequate) it is considered sound practice to use the cystoscope, and by its means determine more accurately the local conditions. There may then arise the question as to the desirability or otherwise of lavage of the pelvis of the kidney. Into this question I will not go fully this evening. I have an open mind in regard to this as, I hope, in regard to most other conditions in which we have alternative treatments, but I have not yet met with a case in which really careful and detailed management on general lines failed to cure, and in which pelvic lavage did. Let me repeat: "really careful and detailed management." And without going into particulars I may instance the dietetic part of the régime, which I find personally to be of the greatest importance, yet which is frequently quite neglected. In acute cases it too often happens that the firmly established British conviction that milk is the proper diet for all acute illnesses determines the matter here also. And even after the acute stage is over milk is often a staple article in the diet. My own experience leads me to exclude milk (as such) entirely from the diet in all these cases, and at whatever stage. In the cases of the disease occurring in nervous little girls, the suggestion to exclude milk from the diet is often met with great distrust by the mother, who fears loss of weight, and if this happens during the first week or so the milk is often promptly resumed. If time allowed I could refer to some very striking instances of emergence from prolonged acute attacks, and of rapid improvement in subacute and intermittent cases, as the direct result of changing the milk diet which the patients were taking for a diet free from milk, and also, I may add, free from eggs. I will only mention one case, that of an adult male who had been ill with an acute coliform infection for some six weeks, running a very high and intermitting temperature, and showing the usual depression, lethargy, foul tongue, constipation, and abdominal tympanites. After ordering a trial of antistreptococcus serum and silver injections intramuscularly, and getting no response in a couple of weeks, an eminent genito-urinary surgeon cut down upon both kidneys, freed them in the perirenal tissues, and stitched them in the horizontal position, explaining by the aid of diagrams that in this way the pelves would be able to drain more efficiently than was possible when the kidneys lay in the position chosen by Nature. The immediate result was complete anuria for three days, and a desperately ill patient. Then the former condition of affairs was gradually resumed, with the symptoms exactly as before, except that the abdominal distension was somewhat greater. This was the state of things when I saw the patient. From the naked eye and olfactory characters of the urine the infection was clearly coliform in nature. As a preliminary measure I changed the milk diet, expressing agreement with the rest of the treatment, and I promised to report concerning the urine, and whether or no I advised the use of a vaccine. Within three days, however, and before my report arrived, the patient had improved, and by the end of the week the temperature was normal.

We must not, of course, confuse the question, whether patients get well after pelvic lavage, with the question whether the lavage is necessary. Like many other organs in the body the kidney pelvis will tolerate chemical interference with little or no detriment, provided the technique be sufficiently skilled. No doubt each case must be treated on its merits—a principle, like a good many other principles, sufficiently hackneyed but too often disregarded. It is quite reasonable to make a local effort to reduce the pelvic infection in cases which continue to resist general measures of treatment. But I must confess that, in some of the cases that have come under my observation after the treatment has been adopted, the procedure has seemed to me to illustrate the triumph of technique over reason. I certainly think this is so where efforts have been made to soak the kidney with antiseptic, rather than to disinfect the pelvis. For if, as is allowed—nay, insisted—by one ardent apostle of this method, the kidney is really more sinned against than sinning in the matter of the infection, and if the microbe is not primarily but only indirectly responsible, by an upset in the "bacterial balance" (I borrow the expression for the moment) resulting from faults in the patient's general health—if things be so, then is it rational to think that an effort to get an antiseptic solution to percolate backwards through the kidney will materially alter the course of the disease?

The more I see of these cases of coliform infection the more convinced I am that until the function of the colon is healthy, the patient is not free from relapses or from a chronic bacilluria. And, since I saw, some years ago, a case of some 15 years' standing (if not longer) completely clear up after an emergency operation for intestinal obstruction caused by a band which had evidently caused some degree of mechanical difficulty for a very long time, I have given up any idea as to the possible duration of a bacilluria before

it should be regarded as incurable. In a chronic case, whether in child or adult, no point in treatment having the least bearing upon the bowel condition seems too trivial for attention. The choice of aperients is an important point, and patients should be made to understand that it is not the frequency or regularity of the bowel action that matters so much as the character of the stool passed.

CONCLUSION.

It is, however, my métier to-night not to deal specifically with treatment of any type of case, but rather to indicate the importance of taking broad views of the pathology underlying several types. Upon staphylococcus infection I will not dwell, but merely remind you of the great importance of the cases, because of their frequent obscurity and also because of their great gravity. Both the urinary infection and the peri-renal abscess that may develop are manifestations of a pyæmia, and although prompt surgical measures are of the utmost value in draining foci when these are established, the main onus of treatment is medical in coping with the underlying septicæmia.

Before leaving this important matter of urinary infection, the mere knowledge of the fact that no longer can we regard the mere discovery of micro-organisms in the urine of a patient as indicating an infection within the urinary tract is sufficient to establish the thesis that all cases should be considered to have possible medical bearings until this is proved not to be the case. For what is the actual position? Micro-organisms in the urine may indicate one of the following conditions: (1) A mere elimination of these from the blood stream without any urinary infection at all; (2) a focal infection at some point in the urinary tract; (3) a focal infection outside the urinary tract, but communicating with it either by gross continuity or by lymphatic spread; (4) a diffuse infection of the urinary tract; (5) that the urinary tract is a "carrier" of the micro-organism, as seems the nature of some cases of bacilluria. With all these possibilities before us it is, as I say, clear that wide views should be taken of any case with which we have to deal.

OBSERVATIONS ON POSTURAL PROTEINURIA.

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OWING to the interest which has recently been shown in "albuminuria of uncertain origin,"[1] the notes of four such cases are recorded below. If postural proteinuria be considered to include all cases of "albuminuria" which decreases or disappears on lying down only to increase or reappear on rising again, then the term includes at least two distinct groups of patients—viz., group (1) where no evidence is forthcoming of any organic lesion of the kidneys (or of any part of the urinary tract)—I propose to call this group "cyclic proteinuria" or "functional postural proteinuria"—and group (2) where there is evidence of some slight organic lesion of the kidneys (or of some part of the urinary tract)—e.g., slight pyuria, occasional casts (other than hyaline), &c.—I propose to call this group "organic postural proteinuria." Naturally, where the actual position of the lesion can be defined, the cases will be termed nephritis, pyelonephritis, pyelitis, cystitis, prostatitis, &c., even though the resulting proteinuria may be postural in type at some stage of the disease (for instance, occasionally in nephritis, during recovery, the albuminuria may become postural in character); I am not referring to such cases under the heading of organic postural proteinuria, but rather to those mild organic cases which cannot so be labelled.

[1] THE LANCET, 1920, i., p. 868, and 1921, i., pp. 116, 126, and 136.

Of the four cases I regard Nos. 1 and 2 as cyclic proteinuria (functional postural proteinuria) and Nos. 3 and 4 as organic postural proteinuria. It is more than likely that all such groupings are purely artificial. It is possible that it is merely a matter of the severity of the disease. Very mild organic lesions tend to recover of themselves and are apt not to be followed up. It may be that our methods of investigation are not sufficiently delicate to prove the existence of an organic lesion in cyclic proteinuria.

Importance of Careful Investigation.

From the point of view of examination for life insurance, there is a tendency to regard cases of cyclic proteinuria as healthy beings, whereas cases of organic postural proteinuria would probably be deferred or heavily loaded on account of the results of the microscopical examination of the deposit, if such examination was performed. The main purpose of this paper is to indicate the importance of very careful investigation of these cases of postural proteinuria, lest the patient belong to the second group (organic), and the early stages of disease be allowed to pass untreated. It is admitted that the majority of the second group probably recover spontaneously, but it is possible that some of them may advance, and so occasionally justify the suspicion with which postural proteinuria is viewed by insurance companies. It is suggested that the examination of the urine for protein at frequent intervals (e.g., every two hours for one or two days), combined with a microscopical examination of the centrifugalised deposit of some of the specimens in which protein is found, provides a simple (though somewhat laborious) method of determining whether the patient belongs to the group of organic postural proteinurics or to the group of cyclic proteinurics.

I consider the term "cyclic proteinuria" very appropriate for the latter group. It contains no suggestion of the underlying cause, but reminds one of the extraordinary variations which may occur in any given period of 24 hours—variations, which to my mind, it is essential to demonstrate before diagnosing cyclic proteinuria. "Albuminuria of adolescence"[2] is not sufficiently comprehensive because this condition may occur long before puberty; "hæmatogenous albuminuria" is far too comprehensive because many physicians use it to embrace albuminuria resulting from various anæmias, or occurring in the course of acute specific fevers, &c. "Proteinuria" is obviously a more accurate term than "albuminuria."

I wish particularly to emphasise a fact often overlooked in judging the value of quantitative renal function tests—viz., that it is estimated that probably not until about three-quarters of the total kidney tissue has functionally been put out of action do such tests reveal any abnormality. I refer, of course, to estimations of the functional activity of the two kidneys together. The surgeon is able with the aid of ureteric catheterisation to compare the function of the two kidneys. How far "catheter inhibition" may interfere with the absolute quantitative measure of the function of each kidney separately is at present imperfectly known. Obviously, therefore, in cyclic proteinuria the current tests of renal efficiency will chiefly be of negative value in that they exclude very gross kidney lesions. While discussing this point I should like to draw attention to the case published by Dr. Ivor T. Davies in THE LANCET of Dec. 18th, 1920. It is perfectly reasonable to consider that at the time the diastatic index was normal (a month before death) probably more than a quarter of the total kidney substance was functioning—that is all the result implied at the time the test was made. It is necessary to repeat kidney function tests at intervals if it is desired (*a*) to show that the amount of damage has not reached the "three-quarter line,"[3] or (*b*) the degree of damage having reached that point, to obtain

[2] Dr. R. Hingston Fox: THE LANCET, 1921, i., 116.

[3] Three-quarters is adopted merely as a rough working hypothesis.