dren's Hospital, April 13, 1907. History of pain and limp of right leg for two months. Frequent night cries. Unable to walk. Right hip very sensitive, with no motion. Large tender and fluctuating area about the great trochanter. The diagnosis of osteomyelitis was made and she was sent into the house.

April 16, 1907. Operation by Dr. Lovett.

An abscess containing about ten ounces of pus was opened. No opening in the bone was found. The culture from the pus showed staphylococcus pyogenes aureus. After evacuation of abscess, motion of the hip became nearly normal and the acute symptoms subsided. The abscess discharged for about three months.

At the end of five months the motion became normal with no pain or tenderness.

Secondary pyogenic infection from a primary tuberculous lesion is, of course, possible. To rule out this possibility, guinea pigs were inoculated by pus or necrotic material, in all cases coming to operation. At the end of six weeks they showed no evidence of tuberculosis.

In conclusion, little need be said of the early diagnosis of these acute pyogenic infections except its importance in demanding operative interference.

In chronic cases of pyogenic infection with symptoms identical with symptoms of tuberculosis of the hip, we believe that we should hesitate in making a differential diagnosis when, after careful observation, if destruction is taking place, operative interference is demanded, in the meantime, of course, keeping the cases under protective treatment.

AN ANALYSIS OF THE SYMPTOMS IN FORTY CASES OF SUPPURATION OF THE KIDNEY OR KIDNEY PELVIS.*

BY ARTHUR L. CHUTE, M.D., BOSTON.

ALL men who do much cystoscopic work are, I think, impressed with the number of renal suppurations they find in which the history and the other means of examination, with the exception of cystoscopy, show little to direct one's attention to the kidney.

The fact that there are present in some cases few or none of the symptoms commonly recognized as indicative of renal suppuration is, I am sure, responsible for a more extensive destruction of the relatively non-resistant renal tissue than would otherwise be permitted.

With this in mind I have gone over my demonstrated cases of renal suppuration to ascertain what symptoms they have shown, and to find out more particularly in what proportion the signs that I believe are very commonly looked for in suspected cases of renal suppuration, and quite often depended upon for making that diagnosis, have been lacking. A few of my cases I have been unable to include in this analysis through a failure on my part to make a sufficiently full record at the time; there remain, however, 40 suppurative cases in which the record is suffi-

ciently complete to be of use for this purpose. This series of cases includes 15 cases of pyelitis, 12 of renal tuberculosis, 5 of pyelonephritis, 5 of pyonephrosis, 2 of calculous pyelonephritis, and 1 of abscess of the kidney. The observations have the advantage that all have been made by one observer.

I have gone over and tabulated these cases as to the presence of pain, the presence or absence of a renal mass, whether tenderness could be elicited and whether renal casts were found, points which in my experience are largely depended upon in determining whether a given suppuration is of a kidney or of the bladder. I have also noted whether these patients had any disturbance of urination and whether the bladder gave cystoscopic evidence of being diseased. I have finally noted the diagnosis and my reason for arriving at that conclusion. As all these patients presented a turbid urine, varying more or less in degree, no individual reference has been made to this fact.

I will first take up the matter of pain in the loin or back in these 40 cases. This came from the history and was in no way influenced by the personal opinion of the writer as to what might or might not be fairly considered pain. It was purely an expression of the patient's opinion on this subject. It was found that 23 patients had at some time suffered from pain in the loin or back, while 17 had not. Of the acute processes, all gave the history of pain; of the chronic processes there were 17 who gave a history of pain and an equal number who gave no history of pain. It may perfectly well be that those who did not complain of pain had had pain at some time but had forgotten about it. Against this perhaps is the fact that in several of these patients the history was of pain quite a number of years before. It is, however, not important to us to know whether these 17 patients actually never had any pain, or whether they had forgotten about it. What is important is that in 34 suppurations that might be considered subacute or chronic, one half made no complaint of pain in the loin or back. In passing, it is of interest to note that one of the patients who did complain of pain referred it to the well, or at least the better, kidney. This phenomenon is sometimes put down to a reflex of some sort, but is more usually ascribed to compensatory hypertrophy. I believe this latter is probably the true explanation. Pain in the well kidney, as well as tenderness and increase in its size, I have most often seen in tuberculous cases, and I think it is very difficult in these cases to rule out the possibility of a small cortical focus, which does not connect with the renal pelvis and, therefore, does not give a turbid urine, the cardinal symptom of a renal suppuration. It is on the absence of a turbid urine in such cases that one draws his conclusion that the painful kidney is normal.

When one considers the question of a renal mass, one comes to something in which the personal equation undoubtedly plays a large part. In these cases I have put down as a "mass"

* Read before the American Urological Association in Chicago, June 2, 1908.

practically every kidney that I could feel more plainly than I felt I should be able to, as well as those that showed a considerable increase in size. In these 40 cases I found a mass, using the term in the sense defined above, in 11 cases. I should describe 3 of these 11 cases as acute and 8 as chronic or quiescent. In 2 cases the kidney that was not diseased, so far at least as I was able to determine, was the one that felt enlarged, due undoubtedly to compensatory hypertrophy. In 5 of the 11 cases showing a mass, I was able to verify the presence of an enlarged kidney at operation. The rest of the 11 cases did not come to operation so far as I know. Of the 29 cases in which I was unable to make out any increase in size, there were 7 in which I found the kidney actually enlarged at the time of operation; in 2 it was very considerably enlarged. In most of these cases several examinations had failed to make out any increase in size.

Renal tenderness in its lesser grades is even more difficult to determine than a slight increase in size. As there is no fixed standard of what one is justified in considering as tenderness, different observers will differ regarding the same case. It is possible to exert a degree of pressure in the flank of practically any person which will give the same discomfort that one would call tenderness if brought about by a lesser pressure. In this series of 40 patients I was able to get what I considered tenderness in 15 cases. All of the cases that I should call acute presented tenderness, as well as 9 that I should term quiescent. Two cases showed tenderness over the well kidney instead of the diseased one.

The number of cases in which renal casts were found is of especial interest, as it is my experience that the *not finding* of casts raises in the minds of many physicians a strong presumption against the probability of a given suppuration being of renal origin. In this series of patients, casts were found in 7 cases, while there were 33 cases in which they were not found. I believe that casts were undoubtedly present in a much larger proportion of these cases and would have been found had long and repeated search been made. However, as the specimens examined in these cases were almost without exception drawn by catheter and centrifugalized, I believe it gives a fair idea, not probably of the percentage that had casts, but of the percentage in which one is likely to find them. It is a striking example of the unreliability of "negative findings."

The quantity of albumin was not accurately determined in most of this series of cases, and no attempt has therefore been made to tabulate the amounts. It is of interest to note that in one case (22) with a very acutely suppurating pyelonephritis, the Esbach test showed but 4 per mille, or one fortieth of 1%.

In this series there were 6 cases in which urination might be considered normal and 34 in which it was either painful or abnormally frequent or both. The bladder showed involvement in 28 of these cases, though in a considerable proportion the involvement was trifling and limited to the

region about one ureter. In the remaining 12 there was no involvement of the bladder that I could determine. In all the patients who had normal urination the bladder proved to be normal in appearance; on the other hand, 6 patients with normal-appearing bladders showed a disturbance of urination.

It is beyond the scope of this paper, which deals simply with suppurations of the kidney and kidney pelvis as a whole, to point out the frequency with which the various symptoms have appeared or been wanting in any particular type of disease. A reference to the accompanying chart will show this.

In summing up, I would call attention to certain facts which it is possible, perhaps even probable, that the tabulation of a larger series of cases might modify somewhat.

Less than one half of the patients in this series (42.5%) gave a history of lumbar pain.

In only a little more than one fourth (28.5%) could I make out any enlargement of the diseased kidney.

Tenderness was present in 38.5%.

Casts, on which some men place much importance, appeared in but 17.5%.

A very striking thing to me was the fact that 11 of these 40 cases (27.5%) presented neither pain, renal mass, tenderness nor casts.

From an analysis of these cases it appears that we have in suppurations of the kidney and kidney pelvis but one sign that is always present, that is, a turbid urine. The next most frequent sign, present in 85% of the cases, is a disturbance of micturition; both these symptoms also occur almost constantly in conditions limited to the bladder. There is a considerable proportion of renal suppuration (27.5% in this particular series) in which we get only these two signs.

This brings me to the points that I wish to emphasize: first, the lack of distinctive symptoms in many renal suppurations; second, the absolute unreliability of negative findings in these cases; last, the tremendous importance of the use of the cystoscope in the study of urinary suppurations.

THE NECESSITY OF DISINFECTION AFTER THE DEATH OR REMOVAL OF TUBERCULOUS PATIENTS.*

BY HENRY JACKSON, M.D., BOSTON.

At this time when so much money is spent and so much time is given to aid those suffering from tuberculosis, it is certainly wise to make exertions in every possible way to prevent the development of new cases. A very important branch of the work, now in thorough working order under the charge of Dr. Locke in the Municipal Tuberculosis Out-Patient Clinic at Burroughs Place, is careful search for signs of early tuberculosis in the families of those known to have the disease. Similar work is being done by the school inspectors and by the social workers connected with the Massachusetts

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