REMARKS

ON

THE TREATMENT OF ACUTE RHEUMATISM BY TINCTURE OF THE PERCHLORIDE OF IRON.*

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In the year 1869, at the meeting of this Association in Leeds, I had the honour to read a paper upon the Treatment of Acute Rheumatism by the Tincture of the Perchloride of Iron. The facts which I then recorded were such as to induce me to continue the mode of treatment which I then described, and I wish now to lay before you some further results of that mode of dealing with the disease in question.

You will allow me to remind you that the possibility of relieving acute rheumatism by the tincture of perchloride of iron was suggested to my mind by observing the rapid arrest of certain other "spreading" inflammations—such as erysipelas, diphtheroid and hepatic sore-throats—by the administration of this drug; and that I stated at the time, and wish now to repeat the statement, that, in my judgment, the cases that I could then bring before you, and those which I can now submit to your consideration, are not sufficiently numerous to establish a therapeutic position; but that they are, so far as I can see, sufficiently significant to warrant a further trial of a mode of treatment which is certainly better than that which Warren said was all that he knew of that was good for rheumatism, viz., six weeks.

In the front of this paper I wish to state, that very many cases that have been under my care, both in hospital and in private practice, but of which I have no sufficient notes, have left upon my mind the strong conviction that those which I am able to bring before you understate rather than overrate the value of the mode of treatment that I have suggested. This I am convinced is the case especially with regard to the time of the relief afforded to spontaneous pain.

The treatment has been generally the administration of the tincture of perchloride of iron, in doses varying from 15 minims to a drachm every four hours, with or without 20 to 30 minims of glycerine and spirits of chloroform. No patient has complained of any discomfort of any kind, which could be referred to the medicine.

The facts which I have to submit to you have been gathered by my very able clinical assistant in University College Hospital, Mr. Voelcker, from the case-books of Sir William Jenner, Dr. Wilson Fox, and myself. The cases are sixty-five in number, all treated by iron, and the general results are as follows. Hyperpyrexia occurred in 3 cases; was fatal in 2, relieved in 1 on the seventeenth day. A normal temperature was observed throughout in 2 cases; 1 presenting friction sound and systolic apex murmur, probably old. No heart-affection was observed in 27 of 52 cases. The joint-affection was severe in 18, of medium intensity in 16, and but slight in 5. The severity of the disease, as judged of by the temperature before the commencement of the iron treatment, may be represented thus, generally, that in 37 of 52 cases it was at or above 102 degs. Fahr.

Analysing these cases more minutely, I find the following results.

1. With regard to the date on which the temperature became normal after the commencement of treatment, that in 20 of 57 cases the normal condition was reached on or before the fifth day; in 26, *i. e.*, in 45 per cent., before the end of the first week; in 15, between the fifth and tenth day, *i. e.*, in 35 cases, or 61 per cent. before the tenth day; in 15, between the tenth and twentieth days, *i. e.*, in 50 cases of 57, before the end of the third week. The most important point to notice here is, that in 36 per cent. the temperature was normal on or before the fifth day after the commencement of iron treatment.

2. The date of the disappearance of all pain may be shown thus: in 2 cases on the second day, in 3 on the third, in 6 on the fourth, and in 4 on the fifth, that is to say that in 15 of 57 cases (22 per cent.) all pain had gone by the fifth day; in 14 other cases, the pain had ceased after the sixth and before the tenth day. This gives 29 of 57 cases, more than 50 per cent., free from pain on or before the tenth day. And further, 22 cases found relief between the tenth and twentieth days; *i. e.*, 51 of 57 cases were relieved of all pain within twenty days. Here, again, the principal point of interest is the earliness of the date upon which pain disappeared in a considerable number of cases.

3. The relation between the severity of the disease, as judged of by temperature elevation, and its duration after the iron was administered, may be thus exhibited in 52 cases. Under 101 degs. Fahr. of 15 cases, the temperature became normal in 7 during the first week, in 5 during the second week; at 102 degs., and between 101 and 102 degs. of 19 cases, the temperature became normal in 11 during the first week, in 2 during the second week, and in 9 during the third and fourth weeks. In 14 cases when the temperature was 103 degs. at the commencement of treatment, 4 convalesced in the first week, 4 in the second, 5 in the third, and 1 in the fourth. Of 4 cases in which the temperature was 104 degs. when the iron was first given, 2 presented a normal heat in the second week, and 2 others in the third.

The result of this examination may be most correctly exhibited by dividing the cases into two groups, those in the first having a temperature ranging from 99 to 101 degs., those in the second group varying from above 101 to 104 degs. Of the first group, 15 in number, 46 per cent. convalesced during the first week; of the second group, 37 in number, 40 per cent. attained a normal temperature within the same period. It is obvious from these facts, that the duration of fever after the administration of iron was not determined, and but only slightly affected (6 per cent.) by the degree of fever which had been previously attained. In other words, it was in severe as well as in moderate and mild cases, that the beneficial effects of treatment might be observed.

4. The degree to which the condition of the heart affected the duration of fever in cases of acute rheumatism, may be shown in 52 cases; thus, in 21 cases the heart was healthy throughout, and of these, 10 convalesced within five days, and 6 between the fifth and tenth days; whereas, of 31 cases with endocarditis, pericarditis, or the two combined, but 9 reached a normal temperature on or before the fifth day, and 6 between the fifth and tenth days. Further, of those 21 cases in which the heart was healthy, five only presented an abnormal temperature beyond the second week; while of those 31 in whom heart-disease existed, 16 remained feverish beyond that period. Representing these facts by calculations per cent., they stand thus; that when there was no cardiac affection the temperature was normal before the tenth day in 76 per cent., and when there was heart disease only 22 per cent. convalesced during that period. It may be interesting further to know, that of these 52 cases, 16 presented endocarditis alone, 7 pericarditis alone, and 8 endopericarditis.

From this it is obvious, that the presence of cardiac affection protracted the duration of the fever, and, *pro tanto*, diminished the beneficial action of the drug.

5. The influence of the severity of the joint-affection upon the duration of the abnormal temperature may be exhibited in 39 cases. In 18 the severity was great, in 16 medium, and in 5 inconsiderable. Of the 18 severe cases the temperature became normal within the fifth day in 4, between the fifth and tenth days in 5, between the tenth and fifteenth in 4, and between the fifteenth and twentieth in another 4; and, in one case, it was not reduced to 98.4 until the thirtieth day. In 21 cases of medium or slight severity, the temperature was normal in 7 before the fifth day, in 8 between the fifth and tenth days, in 3 between the tenth and nineteenth days; in 2 medium cases it remained elevated until the twentieth day; and, in one mild case, the fever continued until the thirtieth day.

Representing these facts by percentage, they show that in severe cases the temperature became normal before the tenth day in 50 per cent.; and that it was normal in moderate and slight cases in 71 per cent. by the same date. Or, separating those of medium severity from those of but slight joint affection, we find the temperature normal before the tenth day in extreme cases in 50 per cent., in moderate cases in 68 per cent., in mild cases in 80 per cent. Remembering that, as a rule, endo- and pericarditis are more frequently found in cases of severe than of but slight joint affection, the facts that I have stated cannot, I think, be referred to the mere chapter of accidents. I do not remember to have seen under other modes of treatment one half of the cases of severe acute rheumatism, presenting a normal temperature within fifteen days from the commencement of treatment.

6. The length of the persistence of pyrexia after the commencement of treatment by iron in relation to the day from the attack at which such treatment was begun, is somewhat curious. No case was treated before the third day of the attack; and of those which were treated within the first week, 23 in number, 10 presented a normal temperature before the seventh day, 8 before the end of the second week, 1 in the third week, and 4 in the fourth. Of those, 15 whose treatment did not commence until the second week from the date of attack, 5 presented a normal temperature within seven days, whereas abnormal heat remained in 8 until eight and twelve days from the administration of the iron. It is interesting to note that in two cases, each of whom had suffered for

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longer than three weeks before the medicine was given, this temperature became normal in one on the second day, and in another on the third. Of 45 individuals, including extreme cases, the mean duration of fever after giving iron was eleven days; and this was so in each of two groups, one of 25 in whom the treatment was commenced before the seventh day, and in the other, of 20 cases who had undergone no treatment until after that date. The point of importance lies in the fact that although, when treated within the first week, 43 per cent. presented a normal temperature within seven days; and that when the treatment was not commenced until the second week, 33 per cent. lost their fever during the same period, it is not warrantable to conclude that the date at which the case was taken into hand alone determined the duration of the malady, for in two cases which had resisted other treatment for a period of three weeks, relief followed the administration of iron, and the temperature became normal within three days.

7. The relation between the number of attacks which the patients have suffered, and the duration of abnormal temperature may be thus shown in 55 cases: 29 were in their first attack, and, of these, 13 lost all fever within the first week; 9 within the first five days; 19 were in their second attack, and of these 7 were of normal heat within six days; 6 were in their third attack, and of these 3 presented a normal temperature within five days. Or, putting it another way, of those who were in their first attack, 44 per cent. were convalescent within the first week, while of those who suffered in their second, third, or fourth attack, 42 per cent. recovered within the same period.

It is obvious from these facts that so far as iron treatment is concerned, it is a matter of indifference whether the patient be suffering in a first, second, or third attack.

In several cases I have observed a remarkable diminution in the frequency of the pulse at and after the time at which the temperature has become normal; thus it has been as low as 40, 30, and even 28, but regular in rhythm and force, and the patients have made no complaint of pain or faintness.

I have purposely stated the facts already in my possession, in a bald manner, and have avoided all theory with regard to the treating, that at some future meeting of this Association I may be able so to increase their number as to be able positively to answer the question as to the utility of treating acute rheumatism in the manner I have described.

SACCULATION OF, AND STONE IN, THE BLADDER.*

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I DESIRE in this communication, as briefly as I can, to direct the attention of the meeting to the combination—I may say the unhappy combination—of stone in and sacculation of the bladder, chiefly with reference to operations for the removal of the stone, and especially to the risks of lithotripsy in such cases. I do not allude to ordinary cases of encysted stone—cases which may occur in the young as well as in the aged—in which probably there is a single cyst, which may, and very likely have, been caused by the presence of the stone itself. These cases are fully described in surgical works; they are happily rare in practice, and each one must be dealt with, or left alone, according to the judgment and skill of individual surgeons. I allude rather to those cases of sacculation of the bladder which occur chiefly in the aged, or in those who have experienced continued obstruction to the outflow of the urine, whether from stricture of the urethra, from enlargement of the prostate gland, or from other causes. The mode of formation of these sacculi is well understood and easily explained. The impediment to the escape of urine necessitates increased expelling power on the part of the bladder; this leads to hypertrophy of the muscular walls and interlacing columns; the equal pressure of the fluid in all directions forces the mucous membrane, which is capable of great distension, into the spaces between the interlacing muscular columns; and in this way sacculi of every size, shape, and character are accounted for, from the simple recess between the muscular columns to the perfect hernial protrusion through the entire muscular wall, in which there is no covering to the sac except the peritoneum. Muscular hypertrophy of the bladder, as of the heart, may exist under two conditions, simple hypertrophy, or hypertrophy with dilatation. The former is seen most frequently in cases where the obstruction is due to stricture, where the patients are of middle age, and in the possession of fair vital power; the latter, in the aged, whose enlarged prostate is the

impediment, whose vital power is on the wane, and in whom the bladder is apt to exhibit atony or even paralysis. In simple hypertrophy, the result of stricture, sacculation is far less frequently met with than where there is a dilated bladder from prostatic obstruction. In the latter case, judging from my own observation in *post mortem* examinations and of specimens in museums, sacculation of the mucous membrane exists in the majority of cases.

Given, then, such a sacculated condition of bladder, let us inquire what may happen when a calculus passes into it from the kidney. From the impediment to the escape of urine which always exists in these cases, the stone is very likely to remain in the bladder and increase in size. It may pass at once into one of the sacs, remain and grow there, and cause the symptoms characteristic of encysted stone; or it may not, and I believe, as a rule, does not, at first enter a sac, but remains free in the bladder, and causes the usual symptoms of stone with which we are all familiar.

Then comes the question of operation. The patient either submits to lithotomy, in which case he would probably recover as if no sacculation existed; or to lithotripsy, in which case some of the small fragments of *d.bris* will be very likely to find entrance into one or more of the sacs, and lead either to immediate fatal inflammation extending to the peritoneal membrane, or to prolonged incurable cystitis, recurring stone, and ultimate death. These chronic and deplorable results, however, do not manifest themselves at once; the present and immediate effects of the operation are satisfactory. The mass of the stone, excepting only a few imprisoned pieces, being well removed, the bladder is for the time happy and comfortable; the symptoms almost disappear; only a slight irritability remains, which is attributed either to the enlarged prostate or to the effects of the frequent recent use of instruments; the patient goes home; and the case swells the lists of triumphant successes of lithotripsy which now and then appear in the medical journals. If you scrutinise these lists of successful cases, you will find a not inconsiderable number described somewhat in this way: "A gentleman, aged 70; six sittings; all the stone removed, but some irritability of the bladder remaining." Now, in many of these cases—these so-called "successful" cases—I believe that some fragment has entered one or more of the numerous sacculi, and keeps up the irritability; that by degrees it increases in size, and projects into the cavity of the bladder, and is again met with by the sound, and is probably reduced in size by the lithotrite, and the patient's condition is for a time improved. But the imprisoned stone can never be removed (or but very seldom) from the cyst; it soon sprouts up again into the cavity of the bladder, to be again attacked by the lithotrite; and so the process goes on, until the patient is worn out by continued suffering and repeated operations. No one, I apprehend, will deny the truth of this picture; but it is said that such cases are very rarely met with. Is it so? I have looked closely through my own cases, and, finding half a dozen at least in which this accident (if I may call it so) has occurred, the conviction is strong in my mind that it is of more frequent occurrence than writers on lithotripsy have been willing to allow. It is probable that provincial surgeons, who draw their cases mainly from their own neighbourhood, are better able to trace the subsequent history of their patients than those who practise in London; and to them, therefore, we must look for a note of warning, such as that which I am now attempting to give.

Permit me to illustrate these points by briefly narrating a few cases.

CASE 1.—In 1868, a Jewish gentleman, aged 64, from Yarmouth, consulted me for stone in the bladder. For four or five years, he had had chronic prostatic retention, and passed all his urine by the catheter. For some months, he had experienced sharp symptoms of stone, in addition to those of enlarged prostate, with cystitis. I examined him with a lithotrite, and found that there was more than one stone, the largest of which measured seven lines. After four or five sittings, in which the stone was well broken, and the fragments removed partly by repeated introduction of the screw-scoop, and partly by Clover's exhausting syringe, all the stone appeared to be gone, and the symptoms were greatly improved. Very soon, however, the cystitis returned; small atoms of phosphatic stone began to escape through the large eye of a large catheter; and in a month or two I was enabled, after several vain explorations, to detect a stone, which then, and always afterwards, appeared to be fixed and encysted at the lower and right side of the bladder. At first, it was very difficult to find this stone, or rather the small point of it which projected through the mouth of the sac; but by degrees it grew up into the bladder, and was from time to time attacked by the lithotrite; that is to say, it was broken off level with the aperture leading into the sac, and the loose pieces removed. For nearly two years I did this for him at frequent intervals, and his condition was one of persistent cystitis. He is still living; and his surgeon, Mr. Meadows, I believe, carries on the same

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