CLINICAL LECTURE

ON

A CASE OF ACUTE RHEUMATISM, WITH HEAD-SYMPTOMS AND HIGH TEMPERATURE, SUCCESSFULLY TREATED WITH BATHS.

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GENTLEMEN,—It has long been a familiar fact to all who are conversant with the history of acute rheumatism, that now and then, in a few rare and sparse examples, the malady proves fatal by an unexpected outbreak of overpowering nerve-symptoms. You will find ample illustrations of this in the works of those who wrote before the days of thermometry. It has been reserved for a later age, and, indeed, for the writers of the last five years, among whom Dr. Ringer stands foremost, to make the discovery that head-symptoms are complicated with hyperpyrexia in many rapidly fatal attacks of rheumatic fever. There can be no sort of question that the two sets of cases are essentially the same, and only differ in the commentaries given and the hypotheses advanced by the pathologists of past and present epochs. In older times it was all metastasis, meningitis, and the like processes; now it is all hyperpyrexia, or at all events an exorbitant stress has been laid upon hyperpyrexia *pathologically*. It is hardly possible to overrate its importance *practically*, as I shall presently show. Beyond question, inordinate body-heat is a destructive agent of great power, and capable of doing a vast amount of mischief to the nervous and other systems; nevertheless, in these particular cases any one who examines the records scattered through the journals and elsewhere, will at once see that the law is this: the nerve-symptoms invariably precede, and the hyperpyrexia, however it may intensify, or seem to intensify, those symptoms, invariably follows. The law may be annulled hereafter; but as far as existing data go, it must stand. The highest recorded temperature on the first accession of the nerve-symptoms in the case now under consideration (see page 122), appears to have been at most 105.5 deg.; but this example is unique, and in another part of the same record the temperature is limited to 105 deg. In a large proportion of cases the temperature is below this level, and oftentimes considerably below it. Clearly, then, on the assurance of all past experience, the mischief originates in some profound and damaging impression upon the nervous system—an impression which gives rise at once to the phenomena of cerebral or cerebro-spinal derangement, and to those of exalted body-heat. They are in the main coincident effects of one common cause. I have dwelt upon a point well known to those who, personally or by reading, are familiar with the cases in question, but much misconceived by many intelligent and well-informed persons. Be it so, you will say; but at any rate it is the hyperpyrexia which plays the principal part in the destruction of life. I am not so sure of that, gentlemen. Any one who watched the progress of my own case for many days before the invasion of anything like excessive fever-heat, and took note of the delirium, the tremors, the subultus, and the floccitation, must have felt assured that the boy's life was in jeopardy, whether the temperature should rise to the height of hyperpyrexia or not; as much in jeopardy as that of any one who presented the same symptoms in enteric fever or in variola. Yes; but the bath, and the wet sheet, and the ice-bag, reduce temperature, and at the same time restore consciousness, or, it may be, save life itself. It follows, therefore, you will say, that, as so much good ensues upon the removal of the hyperpyrexia, so, when the result is unfavourable, the hyperpyrexia is mainly responsible for the evil. The reasoning is inconclusive. There may be many factors at work, all conspiring together to compass the death of the patient. If the aggregate of these factors be overwhelmingly strong, there is an end of the matter, and the patient dies; but let the powers of life and death be more evenly adjusted, then the removal of any single factor (say the temperature) turns the scale in favour of life; or, to use a more homely metaphor, takes off the last ounce that is breaking the camel's back. You cannot, then, conclude with certainty that in fatal cases the hyperpyrexia has done all, or nearly all, the work of destruction, even if you regard the processes of refrigeration as resulting simply in the reduction of heat: still less are we at liberty to draw this conclusion if we change the point of view altogether, and presume (as not unreasonably we may) that our refrigerating agents strike home at the root of the evil,

and directly antagonise the first deleterious impression on the nervous system by producing a salutary counter-impression, which controls alike the hyperpyrexia and all the associated elements of death. The evolution of heat may be paramount from beginning to end in sunstroke; but in sunstroke the rule is, that a temperature averaging 107 deg. precedes, and the nervous phenomena follow. In rheumatism, it appears to be the reverse. Nevertheless, it is universally believed that a continuous body-heat, ranging from 108.6 deg. to 112 deg., is absolutely incompatible with life; and I dare not gainsay that belief. Now, in the terrible cases of which I am speaking, the temperature, if unchecked, runs rapidly up to the aforesaid range, and, if unsubdued, must inevitably issue in death. It behoves us, therefore, practically to accept the dogma, that it is the heat which is the main destructive element, and to act upon it at the bedside, whether we believe it or not. We can control temperature, and we are bound to control it. This, in my judgment, is best accomplished agreeably to the plan originated in this country by Dr. Wilson Fox, by the use of the bath, at a temperature of 90 or 95 deg. in the first instance, gradually reduced by the addition of cold water to 70 deg., or even to a lower point in some cases. I confess I have no personal experience of the wet pack and the ice-bag; but many of those who assisted me had such experience, and they all emphatically declared their preference for the bath, as at once the easiest, the most manageable, and the least distressing of all the appliances. In our case, at any rate, the bath was all-sufficient for the purpose required; but it is possible that our case was exceptionally amenable to treatment.

And now, gentlemen, you will naturally ask me whether we are to be perpetually wielding the thermometer, registering temperatures, and constructing charts in every case of acute rheumatism. If we are sure of the ground we have taken, on a foundation of some five years' standing, such a proceeding would be a lamentable loss of time. Recollect what I said about the invariable antecedence of the nervous phenomena in the small minority of cases accompanied by hyperpyrexia. If, therefore, the law stand fast hereafter, as it has stood hitherto, you may in the main rest contented with the ordinary routine of daily registration two or three times in the twenty-four hours, and wait until one or more of the nerve-symptoms arouse the suspicion of impending peril; but you must give a large latitude of meaning to the term "nerve-symptom", and you must be keenly alive to everything that can fairly be included under it. I will enumerate all the prodromata of nervous origin that I have been able to gather from my own experience and from the cases recorded within the last five years—at least from those recorded in detail, and bearing conclusively upon the point in question. They are delirium, restlessness, rebellious to treatment, and, it may be, disproportionate to pain; subultus, tremors, disorderly respiration, stupor, somnolence, deafness, prostration, apathy, strangeness and waywardness of manner, unnatural anxiety and depression of mind; even unnatural gaiety and garrulity. Let any of these sound the note of alarm, and the thermometer, how slight soever its value by comparison hitherto, becomes invaluable now. It is now your bounden duty to apply it many times in the day: how many times, it is not easy to say. I will give you roughly my own ideas on the subject as far as they go. If there be delirium alone, or delirium with extreme restlessness, I should recommend the temperature to be taken at least every two hours. I gave these instructions in my own case. It is true the boy was naturally excitable in a high degree, and the case was an unpromising one from the first; but, under any circumstances, I should look upon a longer interval as unsafe, with a certain reservation for the contingency of sleep. After all, your labour will often be lost. Delirium and restlessness, as a rule, pass away, and leave nothing behind; nevertheless, they are now and then true prophets of evil, and their warnings are never to be disregarded. In cases of this nature I should not allow the temperature to go beyond 106 deg. before administering the bath.

As for the remaining prodromata on the list, it is difficult to estimate with precision their respective values: there are two, however, which I should regard with especial misgiving—over-anxiety and stupor. In the presence of stupor, I should take the temperature every hour or every half-hour; indeed, I should look upon the arrival of a climax as all but a certainty, and I should plunge the patient into a bath the moment the thermometer marked 105 or 105.5 deg. The case is somewhat different with over-anxiety: we might easily alarm the patient by perpetual interference; and it would be obviously inexpedient to disturb a calm and natural sleep, which might fairly be assumed to betoken that all was going on well. Under all circumstances, it is imperative to have the room cleared for action, and the bath and all its appliances in readiness. It is unsafe to be caught unprepared on this first ominous rise in the thermometer, for the interval between the event and the acme of the hyperpyrexia is sometimes fearfully short.

If, in reference to the possibility of overlooking the nervous phenomena, or, in order to make assurance doubly sure, you require collateral evidences of approaching danger, I will mention a few symptoms which are held to be of peculiar significance. A dry unsperspiring skin; a profuse and intensely red miliary rash; an abatement of the pain and swelling in the joints, or their total disappearance; diarrhoea, and a copious flow of pale alkaline or neutral urine, have all been observed to accompany or to precede the paroxysms: they may even precede the nervous prodromata, specially so called. In our case, a free flow of urine occurred before delirium, and diarrhoea occurred with it. The articular pains, for many days before the outbreak of delirium, appeared in all the joints, and disappeared from all in the most desultory way. Again, during the four days prior to that outbreak, there was a slow rise in the temperature, which on the fourth evening culminated at 104.2 deg.; the pulse-rate, also, during the same period, ruled higher than before; but the complexity and continued severity of the case seemed sufficient to explain these occurrences. An unexplained rise in either direction would certainly be a suspicious symptom: perhaps even a rise of any kind should put us on our guard. Unfortunately, the collateral evidences are all inconstant, but they are useful auxiliaries, and when they appear they ought to awaken attention. Let me remark, by way of parenthesis, that, as I should be vigilant myself, so I should inculcate the extremest vigilance on every one entrusted with the care of the patient; and I should direct the attendants, on the appearance of anything strange in his aspect or demeanour, to use the thermometer assiduously, and, if ever it rose to 105 deg., to send at once for the physician.

Gentlemen, I have laid down the law that, for all practical purposes, as far as the bath is concerned, we must take the thermometer for our guide. I wish, in some measure, to modify this hard and fast rule. So singularly calming is the bath, even when there is no great exaltation of the body-heat, that I should be disposed to administer it as a simple palliative in all exacerbations of delirium and restlessness, although the heat may have fallen far below its point of maximum intensity, and may register at the time no more than from 102.5 to 104 deg. in the axilla. At a lower level than the above it would not be desirable to use the bath, for such temperature would not allow a sufficient range to cover both the fall within the bath, which we can regulate, and the fall after the bath, which we cannot regulate with exactness; although, from a comparison of Dr. Wilson Fox's cases, I should roughly reckon the average for the after-fall at about four degrees. On the foregoing plan our last bath was administered, when the temperature was no higher than 103.1 deg. in the axilla, and it accomplished its purpose. Perhaps I might have adopted the same plan with advantage during the prolonged agitation which preceded the climax. In this connexion I would remark that, with a temperature descending gradually from 95 or 90 to 70 deg. or thereabouts, the bath is at least as much a warm bath as a cold bath; and warm baths have for ages been recognised as sedatives to the nervous system.

Before dismissing the subject of the bath, it is important to observe that the chest-complications, severe and extensive as they were, including pneumonia, pleurisy, bronchitis, and pericarditis, underwent no perceptible change for the worse in consequence of its use.

With regard to medicinal remedies, opium and hydrate of chloral are the only soporifics and sedatives of any real value. They may be given freely enough during the premonitory period, or stage of suspicion, to control mere delirium or restlessness; but if I saw the danger-signal in the thermometer, I should put on the break at once and stop the opium for the time being. I might resort to it again if, after the subsidence of the hyperpyrexia, the agitation persisted, and chloral failed to soothe it. Under these circumstances, we cannot afford to dispense with opium altogether; but let it never be forgotten that there is no sharp and unvarying line of distinction between the comatose and the delirious class of symptoms; that stupor may alternate with excitement, and that death by coma is the natural termination of the attack.

In cases characterised by stupor from the first, with or without alternations of excitement, you may apply ice to the forehead or scalp, or the so-called revulsives to the trunk and extremities. I confess I should be afraid of blisters, wherever applied. As the symptoms progressed, I should trust principally to the early employment of the bath, as before stated. In all cases, of whatever type, I should feed and stimulate the patient largely, and I should take especial care not to weaken him in any way.

You are aware that modern researches have established for quinine a high reputation as a refrigerant; but in all the cases that I have perused, I fail to find any illustration of this reputed power. In my own case, as the boy happened to be doing well, on the principle of letting well alone I was unwilling to alter one iota of the treatment, and so he remained for days and weeks under the influence of quinine,

whatever that might be. I cannot determine its value; and the same thing is true of the digitalis associated with it. The possible production of cinchonism is a great drawback to the use of quinine, and might embarrass the prognosis in a class of cases where deafness may be a spontaneous symptom, and a dangerous one.

Gentlemen, in this lecture I have enlarged in great measure on the premonitory symptoms, and passed lightly over the features of the developed attack. With the addition of hyperpyrexia, the last stage is, in the main, the climax and complement of the first. The symptoms may be more conspicuously typhoid in character; there may be convulsions or cyanosis; and there is sure to be coma. I have preferred to dwell upon the premonitions, because the great practical point is to discern the nascent mischief at the moment of its possible origin, and to arrest its ulterior evolution.

I have not ventured formally to affix the name hyperpyrexia to my case: indeed, I know not how to define hyperpyrexia exactly; but this I know, that no one who saw the patient on the night of his first bath would hesitate to say that, without the bath, he must have died in the course of a few hours, with hyperpyrexia on any definition.

In conclusion, I beg to acknowledge the great services rendered by the resident medical officer and all the clinical assistants, without whose aid the patient would never have lived.

CLINICAL LECTURE ON INJURIES FROM LIGHTNING.

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GENTLEMEN,—Opportunities for witnessing the effects of lightning on the human body are not in ordinary seasons very common in this country; and the cases of which I propose to speak to you to-day are well worth your attention, not only from their rarity, but also on account of the many curious and interesting circumstances connected with them.

On the afternoon of Tuesday, June 18th, two men, having with them a horse and cart, were at work, road-making, in a field near Willesden. A severe thunder-storm coming on, they took shelter under a large oak-tree growing in an earthen bank, with no hedge or other tree within a considerable distance. The horse and cart stood near, but not under, the tree. The men were close together, but not touching the trunk of the tree. Suddenly they were both struck down; one was rendered completely insensible; the other did not lose his senses, but was unable to rise from loss of power in his lower limbs. Some men who saw what had occurred went to their assistance, and, as soon as a conveyance could be procured, they were brought to the hospital. When the men were struck, the horse took fright and bolted with the cart, but neither horse nor cart sustained any injury. A large branch was torn off from the trunk of the tree.

One of the men was but slightly injured. When admitted, he appeared to be suffering from shock; his pupils were dilated, and he was unable to stand. The loss of power, however, was confined to the lower extremities, on both of which an erythematous blush was seen extending from the knee downwards. There was nowhere any breach of surface or ecchymosis, and his clothing was uninjured. This man's symptoms soon subsided; by the next morning the redness was gone, and the paralysis had completely passed off. He said he felt quite well, and was allowed to leave the hospital.

With the other man the case was very different. He is reported to have been quite unconscious for about ten minutes after the occurrence; then he recovered himself for awhile, but again lost his senses, probably from faintness. He says that he remembers feeling a violent blow on the head, which made "his eyes strike fire". When admitted, he was conscious, but in a state of collapse, and his pupils were widely dilated. He had bleeding from the right ear, the external part of which was of a dark purple colour, and seemed both excoriated and bruised. Some of the hair above the ear, and also the right whisker, had been burnt away. From the whisker there was an ecchymosis extending down the neck, and ceasing by forming a narrow circular line round the back of the neck, corresponding to the position of a silver watch-chain which he was wearing when he was struck. From this point, down to the right groin, there was no sign of injury; but from the groin downwards there was a purple discoloration of the skin, about two inches wide, passing round the outside of the thigh to