

## TWO CASES OF MENINGITIS ADMITTED TO HOSPITAL AS ENTERIC FEVER, WITH TREATMENT (MEDICINAL AND DIETETIC).

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AT various times in this and other medical journals I have endeavoured to show the difficulties one meets in the endeavour to establish a correct diagnosis in the acute infectious diseases. The great importance of this, not only to the individual practitioner, but also to the municipality, is self-evident. Even with the numerous chemical, analytical, bacteriological and hæmatological methods which the present-day science affords us the task is far from an easy one, and, in my opinion, careful clinical records are still amongst the best means for preventing the general practitioner from falling into serious errors. We are, at the present day, too much given to putting the microscope and the test-tube before clinical acumen.

In the two cases I now describe the patients were from the poorest and dirtiest houses, and there was therefore not a fair opportunity for the practitioners in attendance to appreciate the signification of the initial symptoms. It is to the hospital physician that one must look for careful observation and record of these aberrant cases.

CASE I.—E. C., was that of a female, 11 years old. The illness had been indefinite in onset and vague in symptom, for in the lower strata of society it is unwise to attach much importance to descriptions, and I obtained several conflicting accounts of the early history of the case, some of these being unquestionably exaggerated. I saw the patient about two hours after admission. She was then in a fretful and anxious condition, relapsing frequently into dulness. Temperature was 101° F., but very shortly rose to 104° F., and remained high (between 102° and 104°) for the next four days. Breathing was shallow and rapid, ranging between 38 and 52 per minute, and this continued during the next four days also. Examination of the chest revealed a pretty general bronchitis with numerous râles and rhonci, there was deficient air-entry at both bases, but no sign of pneumonia or tuberculosis. She was slightly deaf, and had been so since this illness commenced. *There was no headache and no other sign of*

*disturbance of the nervous system.* The first heart sound was softened, but there was no bruit and no increase in præcordial dullness; pulse was 135, regular and soft, almost dicrotic. The tongue was dry, cracked, and thinly coated with brown fur. The abdomen was slightly flattened; spleen normal in size, no diarrhoea. No spots to be seen; Widal test was negative on two occasions. In spite of this, however, the clinical picture was fairly typical of enteric fever.

On the fourth day after admission the temperature fell to 98.6°, and this was followed by daily remission and intermission until the eleventh day, when it reached normal and remained so for seven days. At the same time the patient became brighter, and said she felt quite well; pulse and respiration rates fell to normal, tongue became clean and moist, and bowels acted moderately well, but were constipated; the chest was almost, though not quite, clear on auscultation. Just as one was beginning to think the diagnosis of enteric fever justified by the progress of the case the temperature rose, towards midnight of the eighteenth day, to 100.2°, with a marked increase in the pulse-rate. Next morning at 9.30 she had what the nurse described as "a mild fit," during which she was unconscious, and passed urine in bed. She rapidly got over this, and two days later was apparently quite well again.

On the twenty-fourth day after admission she was reported to be irritable and noisy. The temperature had sprung up to 103°, pulse 152, respirations 32 per minute. She complained of no pain at all, but was incoherent in her speech and may not have described what she felt accurately. At the end of a further twenty-four hours her temperature fell to normal again and never afterwards rose above 100°.

At this time, however, she began to gradually develop unfavourable symptoms, becoming pale, thin and haggard, and losing flesh very rapidly. Her mental condition became strange, and she developed what can only be described as "shouting fits," which left her much exhausted. Finally she lapsed into a comatose condition, lying for the most part on her right side with her legs drawn up, her eyes partly closed, and her head slightly retracted. Vomiting then set in for three days almost continuously. At the same time spasmodic contractions of the thigh and leg muscles commenced, sometimes in one and sometimes in both legs. The pupils were equal and normal in size; the discs of both eyes were slightly blurred, but there was no optic neuritis present;

there were no ear symptoms or discharge or evidences of mastoid disease. Tâche cérébrale was present and tendon reflexes exaggerated. Pulse was very irregular and rapid, and bowels constipated. The picture had now decidedly changed to one of cerebral meningitis.

I ordered a piece of unguentum hydrargyri about the size of a hazel nut to be rubbed well into the scalp, neck and spine twice a day. After three days the vomiting ceased, but her general condition remained the same, except that she was getting more emaciated daily. Indeed trophic nerve control, if one is to believe in that at the present day, appeared generally to be adversely affected, for in addition to the pronounced emaciation, and in spite of the most unremitting care in nursing, she developed severe bed-sores over the sacrum and great trochanters. Five days later she took an unexpected turn for the better, opening her eyes and appearing to take some notice of what was going on around her. Each succeeding day brought some improvement, until at the end of another week she seemed quite rational again, and asked for food, &c. Her pulse became quite regular and her deafness rapidly diminished. The knees remained slightly flexed and rigid, and this condition did not disappear in spite of daily massage until after leaving the hospital.

The thing which gave most trouble in this case was the restoration of the child to a decent state of nutrition. Food was taken with avidity, she was always hungry, her diet was carefully planned so as to encourage flesh-formation and muscle-tone, and at first I fondly hoped that with such a good appetite and with such a generous diet we should soon turn out a patient who would do us credit. But we got practically no result with anything until I put the child on a liberal allowance of sanatogen—a substance I have found of really noteworthy value in atrophy, debility and malnutrition following upon infectious disease. Under its use a literally astonishing result came about almost immediately, for sooner than I anticipated not only was general nutrition markedly promoted but the three ulcers, the result of the bed-sores alluded to previously, which had up to now taken a very sluggish course, speedily healed.

With regard to the etiology of this case I am still in doubt. There was clinically no evidence whatever of tubercle, though the predisposing factors in this case were undoubtedly strong—over-crowding, dirt, insufficiency of fresh air and inadequacy of food having been her lot at home during the whole of her life. The

exhibition of mercury, I am convinced, had considerable influence in this case, for although it was not pushed to the extent advocated by many physicians, and not to the point of affecting the gums, the distressing vomiting ceased three days after its commencement and the return to a normal mental condition followed this very shortly.

CASE II.—J. E., male, aged 13 years, admitted as enteric fever. This patient came from a dirty, drunken and dissolute household; he was most neglected in every way, for he was verminous, and scattered over both legs and both arms, as well as on the trunk, were numerous small offensive sores. He was very poorly nourished, and had been obviously ill-treated, for there were bruises on both tibiae and on the lower jaw. On admission he was very restless and noisy, screaming every two or three minutes, though hardly with the typical "meningitis cry." The head was very slightly retracted, but became more markedly so at each cry, and there was some tossing about and boring of the head. During the first twenty-four hours the restlessness and noisiness diminished gradually. The diagnosis of enteric fever had been made on sustained evening temperatures, restlessness and occasional delirium, a little diarrhoea and some abdominal fulness and tenderness, the head symptoms not being pronounced until the day of admission to hospital.

About thirty-six hours after admission the child gradually became quite unconscious, and lay curled up on his left side with the head strongly retracted. There was moderate opisthotonos, the legs were flexed and adducted and fairly rigid; the forearms were not pronated but the fingers were firmly clenched. About this time "champing" of the jaws began to be manifested. His condition continued unchanged for four days, despite such treatment as ice-bags, leeching, blisters and the like. Bearing in mind the possibility of confusion with the nervous types of acute febrile disease, a most careful physical examination was made for concealed pneumonia and for pericarditis but with no result. Rash, splenic enlargement and diarrhoea were all absent, and, as in the former case, two blood-specimens taken at a few days' interval failed to yield the Widal reaction. Fluid nourishment was given in small amounts frequently though with some difficulty.

At the end of the sixth day after admission the condition was but faintly changed. The child had a staring look, his eyes being half opened and moving slowly but continuously in a rotatory

manner; the pupils reacted fairly well to light and there was no strabismus. The temperature, which had been 101·8° F. on admission, fell after some intermission and remission to normal on the fifth day and remained so during the continuance of the illness.

The pulse, which was rapid but regular at first, became quite normal on the ninth day. Respiration, though increased in rate, possessed no abnormal accompaniments. Constipation continued during the whole of the illness.

On the fifth day after admission vomiting commenced of a frequent and persistent type, lasting for over three days and necessitating rectal feeding.

The disease practically remained at a standstill for nineteen days, after which a fairly rapid return to consciousness took place; the limbs relaxed and the spinal rigidity and retraction of the head gradually disappeared. About this time urticaria appeared on the front of both tibiæ and lasted for four days.

On the child's return to consciousness it was apparent that he could not make out objects that were presented to him—for example, feeders, spoons, &c.—and he did not hear what was said to him unless the nurses shouted very loudly. Nothing whatever was to be made out, however, on examination of the eyes and ears, and his mother, whom I interviewed, was positive that she had never noticed anything wrong with them before this illness. Both improved during his stay in hospital, though there was some impairment still left at the time of his discharge.

The family doctor, a man of ripe experience, was somewhat astonished at the development of the case, for, after making allowance for aberration in type, and for the age of the patient, the clinical signs had pointed with no uncertain finger to enteric fever of the nervous type. However, the development after admission so clearly pointed to meningeal inflammation that the only doubt left in my mind was whether the disease was epidemic cerebrospinal meningitis. The state of the skin of the lumbar region—covered as it was with pustules and the sores already alluded to—alone prevented me from making a lumbar puncture. Moreover, an able pathologist and physician who saw the case in friendly consultation with me on several occasions concurred with me in the diagnosis of posterior basic meningitis.

The medicinal treatment adopted in this case after its nature was clearly apparent was inunction with unguentum hydrargyri, used precisely as in the former one. Here, again, its administration was followed by speedy amelioration of the graver symptoms,

and I am therefore inclined to put this drug (not only from this but also from previous similar experience of it) in a foremost place in the treatment of acute meningeal inflammations.

The more acute symptoms having been conquered I found myself, as in the previous case, face to face with a condition where text-book knowledge avails but little. The patient was in a deplorable state of emaciation, the cause of which I venture to assert was due to a profound inertness of assimilation and cell-metabolism caused by paralysis or paresis of nerve-nutrition-control. It is difficult, if not impossible, in the face of cases such as those described, to yield to that school of physiologists who deny any trophic influence to the nerves. No one has, I believe, cast any doubt on the clear and positive evidence that in the nervous system itself the nerve-cells exercise a trophic influence upon nerve-fibres; the only doubt seems to be whether the tissues supplied by those nerve-fibres are similarly affected. I am inclined to share the belief of those who assert that this trophic influence originates in the nerve-cells, and is a *direct stimulus* transmitted to the tissues in the area of supply of the nerve concerned, and not a mere indirect vascular effect. The trophic theory best fits in with the results I obtained by what I may term direct feeding of the nerve-cells by the glycerophosphate contained in sanatogen. No theory propounded by the non-trophic school fits in so well either with clinical observations or with the effects of treatment. In this particular case I rang the changes for several weeks on every food-stuff which is noted in other diseases for promoting flesh-formation, and yet no progress whatever was made. Stimulants, tonics and much-advertised and expensive food materials were tried again and again, only to result in disappointment. Phosphates, hypophosphites, iodides, iron and even protylin (a new organic phosphorus combination said to lead to the retention of phosphorus in the tissues) were all tried and abandoned. My happy results with sanatogen in similar cases induced me to try it once more, and I determined to press it, giving it both with solid and liquid food. No perceptible change occurred for the first six days, and I feared I was again to be disappointed, but at the end of this time I noticed a slight increase in his facial muscles and a tinge of colour in his cheeks, whilst there was some return of power in his limbs, and he could now hold a cup steadily to his lips. The Sister-in-Charge stated that he took a livelier interest in what went on around him, though his impaired vision and hearing rather handicapped him in this. The sanatogen was continued

for another fortnight, and it is not too much to say that during this time an increase in strength, firmness and co-ordination of muscle, and general mental activity was observable day by day. When he was ultimately handed over to his mother she declared that he was stouter than before his illness, and much more so than any of her five other children, two of whom were older than this boy.

It is a rare thing for me to be concerned in the prescription of either drugs or other things which savour in the least of a proprietary character, but I feel bound to place on record my experience with sanatogen in these two cases. I have by no means been converted to its use by the cases just described, for I had previously given it an extensive trial in cases of diphtheria, scarlet fever and typhoid fever attended by considerable loss of muscle power and tone, with the most marked benefit. I had, moreover, made a careful study of its chemical analysis, and of feeding experiments carried out by men of note, both in this country and abroad, which had convinced me that *prima facie* it was an article to be ear-marked for extended trial. My results with it have really been so striking that for the future in all cases of wasting disease in either children or adults, as well as in such cases as neurasthenia, anæmia, rickets, &c., I shall use it first and not last, for I am satisfied that we have in it a tissue-stimulant of no mean order. I may perhaps add that I have never yet seen it rejected by the feeblest or most capricious stomach.

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## THE TREATMENT OF TETANUS.

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ALTHOUGH tetanus antitoxin has been used all over the civilised world for the treatment of tetanus in the human subject for many years, no general agreement has yet been reached as to its value. Scores of papers have been written on the subject, recording on the one hand recoveries which have been attributed to its use, and whereby its value has been demonstrated to the satisfaction of the author, or, on the other hand, cases in which the absolute failure of antitoxin to arrest or modify the progress of the disease has been reluctantly admitted.

Two recent papers may be cited illustrating both points of view. In the first, Suter<sup>1</sup> records three cases in which antitoxin was freely used after tetanus had developed and in all of which recovery took