

Le Sourd and Pagniez, that during the stage of absent plates the blood clot does not retract, was confirmed by Duke in the human cases, and supports the original statement by Hayem that blood freed from blood plates does not retract.

Conclusion.—A condition resembling purpura and presenting other features of the hæmorrhagic diathesis can be produced in guinea-pigs by inoculation of an antiserum prepared by immunising rabbits with guinea-pig blood plates.

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TUBERCLE OF THE CRUS CEREBRI SIMULATING ENTERIC FEVER.

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THE diagnosis of enteric fever in its early stages is so difficult and such a constant source of anxiety both to the general practitioner and to those in charge of isolation hospitals, and the number of conditions which may be mistaken for it by competent observers is so numerous, that it should be worth while to record some particulars of a comparatively rare condition in which the earlier manifestations presented a clinical picture very difficult to distinguish from enteric fever.

This case, moreover, is one of a considerable number coming within the scope of my own recent experience which illustrate the danger of placing too implicit reliance on the Widal reaction in diagnosis. Without minimising its value when properly applied one is justified in pointing out that it is a method in which the personal equation is very considerable, and I have known more than one doubtful case in which discrepant results were recorded by different observers. I have also had charge of a number of cases in which a "positive" reaction was unassociated with any clinical evidence of the disease in its later stages. Not all of these were ambulatory cases, for several of them developed in other and quite definite directions. The simple process of taking a blood tube and examining it or sending it away to be examined must not be allowed to become an easy substitute for careful and accurate observations of the purely clinical aspect of the case, and I am inclined to the belief that a "positive" result should only be regarded as conclusive if it occurs in considerably higher dilutions than those with which many observers are satisfied.

CASE 1.—The patient a girl aged 20, was notified to me as suffering from enteric fever and admitted into the Wigan isolation hospital on May 8th, 1912. She was a well-nourished girl and worked in a cotton mill, but was somewhat anæmic when admitted. Her home conditions were bad, and she came from an insanitary house in an area from which several cases of enteric fever had recently been notified. There was a history of a week's illness

with continued fever, constipation, distended abdomen, and foul tongue. An examination of the blood had given a "positive reaction," dilution not stated. Throughout her illness headache had been a marked feature. Her temperature on admission was 100° F., her pulse 80, regular and normal in volume and frequency. Her respirations, however, were 28 per minute, and continued throughout her illness to show a frequency out of proportion to that of the pulse, only occasionally dropping to 20, and never below that.

The abdomen was slightly distended, but not more so than might be expected in view of the constipation which was present. There were no spots. The splenic dulness was increased, but the spleen was not palpable. The tongue was uniformly covered with a light brownish fur, the teeth were defective, and the breath most offensive. A further blood examination showed that there was no clumping in dilutions above 1 in 40, and as it was found that the patient had been in the hospital a year previously with an undoubted attack of enteric fever the doubtful results of the blood test could be ignored. The bowels were evacuated by an enema, and the result was a well-formed normal-looking motion. She complained of intense persistent bilateral frontal headache, but had no other symptoms, and took a fairly liberal diet quite well. She had no cough, but there was a small area of slight dulness and increased vocal resonance immediately below the right clavicle. The urine was normal in quantity and quality.

On the day following admission the headache was much better, and this improvement was maintained, but the temperature fluctuated within a few decimal points of 100°, without definite morning remissions. On the afternoon of her fourth day in hospital the nurse noticed that the girl's left pupil was dilated, and two hours later, at 5 P.M., she had an epileptiform convulsion. This passed off after a few minutes, but left her with the pupil still dilated and homonymous diplopia which lasted for five hours and then disappeared. By the next morning her temperature had fallen to normal, she had no headache or diplopia, and felt very well, but the dilatation of the pupil persisted, and there was no reaction either to light or convergence. An examination of the fundus showed nothing abnormal. She remained in this condition for three days, with the temperature oscillating quite irregularly between normal and 100°, the pulse averaging 96, and respirations 24. But on the eighth day after admission the diplopia reappeared and persisted throughout the case. I found that on the left side the image was displaced downwards and to the right, there was complete loss of convergence, the other ocular movements were limited, and there was already slight proptosis. The temperature took on a definitely hectic type, with regular morning remissions, but not rising above 101°. Antisyphilitic remedies were freely tried, but without any effect.

On the sixteenth day after admission there was marked weakness of the right hand, with some tremor, and the headache returned. From this period the symptoms developed very rapidly. The right hand became completely paralysed, and the paresis gradually extended upwards to the forearm and arm, with characteristic tremors. Before paralysis was complete the arm if extended was dropped in a series of jerks. Oculo-motor paralysis on the opposite side became complete, with marked proptosis. The headache returned and persisted;

there was typical cerebral vomiting. Articulation and deglutition were affected by commencing hypoglossal paralysis, and the mental condition became dull, threatening complete dementia. The temperature continued to be hectic in type, its range increasing up to 102°. By this time the picture of Benedikt's syndrome was complete, and the diagnosis of a tumour of the left crus cerebri was established. On July 16th the patient was removed to the Royal Albert Edward Infirmary, Wigan, and on the 18th chloroform was administered, and Mr. E. H. Monks trephined over the left temporal bone. In view of the hectic temperature the brain was deeply explored for pus, but none was found. For several days after the operation the headache was relieved and the mental condition improved. Vision was found to be 8/12 in the affected eye, and the disc remained normal. By the beginning of August, however, her mental condition again became duller, and a hernia cerebri began to develop. Trophic changes became marked, and there was loss of vitality of the soft tissues. She finally became comatose, and died in this condition on Sept. 9th.

On post-mortem examination I found a small yellowish nodule on the surface of the cerebellum. The whole of the left crus was replaced by a hard mass with ill-defined limits, and five small masses similar to that in the cerebellum were found in the cortex cerebri. These tumours, which were about the size of lentils, were distributed on both hemispheres, they were clearly defined, and could be easily enucleated from the surrounding tissues. On microscopic examination the whole of these masses were found to be tuberculous, and numerous tubercle bacilli were demonstrated in the sections. There was a small tuberculous lesion in the apex of the right lung. This was caseous in the centre and surrounded by dense cicatricial tissue. The other organs were healthy.

CASE 2.—An interesting sequel to the above case is provided by the fact that a sister of the patient was recently notified to me as a case of enteric fever, and admitted into the isolation hospital with a positive Widal reaction in dilutions up to 1 in 60. This second girl presented nearly all the symptoms that one habitually associates with enteric fever, although no spots were apparent on the skin; and a characteristic of the genuine cases of this disease occurring locally at this period was an unusually exuberant eruption of spots. On the other hand, her abdomen was distended and tympanitic to an extent that made any attempt at deep palpation inadvisable, and she had diarrhoea with stools of a character consistent with the diagnosis. My own attempts to isolate any bacillus of the typhoid group proved negative. The temperature chart for six days after admission to hospital was quite typical of enteric fever, and the case was entered on my books as one in which the diagnosis was confirmed. Then came a sudden, a dramatic, drop in the temperature, which remained normal for several days, while the girl improved in health, appetite returned, and all "typhoid" symptoms vanished. As the meteorism disappeared it became possible to examine the abdomen more accurately, when it was at once found that the whole of the lower part of the cavity was filled with a doughy tumour, dull on percussion, and displacing the intestines upwards. Von Pirquet's test gave a negative result, but an injection of tuberculin was followed by a marked general reaction, and the temperature assumed the character

known as "typus inversus," marked by a morning rise to between 99° and 100°F., with evening remissions to normal or subnormal. This girl has no symptoms or signs at present of any pulmonary mischief, but I think there can be no reasonable doubt that she is the subject of abdominal tuberculosis in an advanced degree.

The history of these two cases appears to me to be worth recording inasmuch as they illustrate the difficulties with which competent observers are still beset in attempting the early diagnosis of enteric fever, the admirable imitation of enteric symptoms which the tubercle bacillus, operating in very different parts of the organism, can accomplish, and the danger involved in too implicit a reliance on the Widal test in moderate dilutions. I have to express my thanks for much help in connexion with the first case to Dr. F. Rees, honorary physician, Mr. Monks, honorary surgeon, and Dr. J. Oag, late house surgeon to the Wigan Royal Infirmary.

Note.—Since writing the above the diagnosis of abdominal tuberculosis in the second case has been confirmed by laparotomy.

Wigan.

THE WASSERMANN REACTION IN MALARIA.

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It has been stated by many observers that the presence of malaria parasites in the blood gives rise to a positive Wassermann reaction. Meier and Bonfiglio¹ in Italy found that malarial patients gave the reaction as long as they had malarial parasites in the blood. Boehm² examined 46 cases and obtained a positive result in 16. De Haan³ in Java examined 163 cases, of which 63 were positive. At the annual meeting of the British Medical Association held in 1910, Professor Wassermann gave as his opinion that "one should employ the reaction with people who have been in the tropics and contracted malaria, only when one is convinced, by their history, that they have had no malarial attack during the last quarter of a year."

In the majority of the cases which are examined here, in the Federated Malay States, it is impossible to make sure that the patients have been free from malaria for a period of three months. This investigation has been undertaken, therefore, in order to determine to what extent malarial infections influence the results of the Wassermann reaction as practised in this institute. With this object 50 cases of malaria have been examined; 20 of these were subtertian, 17 simple tertian, and 13 quartan. In every case malarial parasites were present in the blood at the time it was collected. All the 20 subtertian cases gave negative results except three. One of these three had a scar on his penis due to a chancre from which he had suffered six years before. The other two subjects who gave a positive reaction were not examined for syphilis when their blood was taken and they left the hospital on the following day before their cases were investigated. All the 17 simple tertian cases were negative except one, who had suffered from syphilis three years before. All the

¹ Brit. Med. Jour., 1910, vol. ii., p. 1429.

² Centralblatt, Band xliii., p. 631.

³ Archiv für Schiffs- und Tropen-Hygiene, Band xvii., p. 693.