MENINGOCOCCAL JAUNDICE

BY

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Simple infective hepatitis becomes a common disease in war-time, and the other diseases giving rise to jaundice are infrequently met with in healthy young soldiers, so that the occurrence of one of the rarer causes may be worth recording. This case had jaundice as the unusual presenting symptom of a severe acute meningococcal septicaemia, and it is of interest, first, because there were never any symptoms of meningeal involvement, and, secondly, because it was not until the patient was well on the way to recovery, as a result of empirical treatment, that a final diagnosis was made.

Case History

The patient, a soldier aged 23, was admitted to hospital on the second day of an illness which started after an inoculation of T.A.B. and tetanus toxoid. Previously he had been quite well. Five hours after the injection, after dinner, he began to shiver and feel sick, vomiting several times during that and the following day, and twice bringing up fairly copious streaks of blood. Twenty-four hours after the onset he noticed that his urine was dark, and at this juncture he was admitted to hospital.

Physical examination gave one the general impression of a not very ill man. His conjunctivae and skin were moderately jaundiced, and the tongue was furred; the liver was enlarged to two finger-breadths below the costal margin and was tender, and the spleen was not palpable. His temperature was 98°. The urine contained bile and a moderate amount of albumin, and a diagnosis was made of simple infective hepatitis, with symptoms accentuated by the T.A.B. inoculation. He denied having had any arsenical injections, although he had had gonorrhoea. Next day, however, his temperature had risen to 103°, severe frontal headache was present, and a rash had appeared, at first red and macular in character and confined to the trunk, and later becoming purpuric. Neck rigidity was absent and Kernig's sign was negative. A blood count showed 5,020,000 red and 18,700 white cells. He had vomited only once since admission and was taking fluids well; but, although he was rational, he was obviously more ill than would be accounted for by a simple infective hepatitis, so a tentative diagnosis of Weil's disease was made.

None of us had seen a case of Weil's disease, but a leucocytosis of 18,700 eliminated infective hepatitis and the enteric group, and the general picture of jaundice, pyrexia, purpuric rash, and albuminuria made the diagnosis probable, although the two signs stressed in the textbooks—muscular pains and suffusion of the eyes—were absent. Any pneumonic condition was ruled out by physical examination and radiographs of his chest, and the only factor difficult to account for was the speed at which jaundice had appeared, there being practically no prodromal phase; but this was explained by the exaggerating effect of the T.A.B. Further questioning showed that exposure to rats was possible. He had been in Kent for two months before the illness, and had slept under canvas, but he denied bathing in or drinking from unauthorized water sources, and his only wet job had been potato-peeling. He had, however, seen several rat-holes in the vicinity of the tents, and heard rats about at night.

So although the diagnosis rested on rather slender evidence, it was the best we had to go on; culture of the T.A.B. and T.T. had proved sterile, and none of the other men inoculated from the same bottles at the same time had had any unusual symptoms. Accordingly, blood was taken for culture and for guinea-pig inoculation, and he was given daily 60 c.cm. of antileptospiral serum, urgently obtained by dispatch rider. Ample fluids were given by mouth, together with 300 g. of glucose and 150 units of insulin, as well as 1 g. of calcium gluconate daily, to minimize liver damage. There was only enough serum for three days' treatment, but by the end of that time, instead of improving, his condition had deteriorated, the temperature being irregular, and varying between 98° and 104°, the rash spreading over his limbs and face, and his skin assuming a greenish tinge, although, apart from severe frontal headache, he did not appear to feel very ill. There was still no neck rigidity or positive Kernig's sign, and blood taken three days before, on the third day of illness, was sterile on culture. His blood showed no agglutination to leptospiral serum, so our hopes turned on the fate of the guinea-pig. By the end of ten days, however, the patient was still extremely ill and severely jaundiced, although the rash had faded a little, and his temperature was swinging considerably; finally, to shake our diagnosis further, the guinea-pig, which by this time should have been moribund, was thriving with no untoward symptoms.

A consultation was held to decide on further action, as it was now clear that our diagnosis was wrong, and that he was not

responding to treatment. Blood was again taken for culture, and a count showed 3,620,000 red and 22,400 white cells. As a last resort, and against all best principles in an undiagnosed case, it was decided to try the effect of one of the sulphonamide drugs. We gave him sulphathiazole and, lest we should further damage the liver, only a moderate dose was used—1 g. four-hourly, after an initial 2 g. The result was dramatic (see temperature chart). Within 24 hours his

Chart of the case, showing temperature and white cell counts.

temperature dropped to 95°, and never rose above normal again; he was feeling better, and for the first time since admission asked for something to eat. A day later the jaundice was fading and his urine was free from bile.

It was not until this stage that the thought of some common septicaemic condition was seriously entertained. The swinging temperature, the purpuric rash, the albuminuria, the liver damage, and the leucocytosis all fitted in, but the degree of jaundice was an outstanding difficulty. Apart from this, the fact that the organism had not so far been cultured, and the dramatic response to chemotherapy, suggested the meningococcus as a possible causative organism, as it is notoriously difficult to grow. Finally, on the next day our minds were set at rest, and the diagnosis was finally established by a telephone message from the pathologist reporting the growth of a Type 1 meningococcus after seven days' culture.

Altogether the patient had 28 g. of sulphathiazole over four days, and once his temperature had resolved his jaundice cleared quickly, his appetite returned to such a degree as to make up for the two-weeks lack of solid food, and, apart from a severe serum reaction with urticaria of his skin and mild oedema of the glottis ten days after the antileptospiral serum, and a mild relapse of the jaundice two weeks after the resolution of his temperature, he made a complete recovery.

Discussion

There are several points of interest in this case—first we have the severity of the jaundice and its early appearance, within 24 hours of the onset. It must be exceedingly rare, apart from Weil's disease and yellow fever, to encounter severe jaundice and prolonged high fever in a patient who has not some obvious reason for his liver damage, such as portal pyaemia or suppurative cholangitis. The localization of the infection to the liver is also noteworthy, in view of the complete absence of meningeal involvement even after ten days' septicaemia.

As for our lateness in forming a diagnosis, the jaundice was the red herring, without which we should probably have been on the right track much earlier. The high fever, the leucocytosis, and the purpuric rash would have helped but for the fact that they also fitted the descriptions of Weil's disease; and at the time, before the bacteriological reports were returned, everything was in favour of this diagnosis, except for the absence of suffusion of the eyes and the muscular pains, which are always present and are often agonizing. These two signs we later learned to be almost constant findings.

Last of all, the improvement of the condition so soon after sulphathiazole had been started made us a little doubtful whether the drug was the curative agent or whether we were witnessing the natural history of the disease; but although the patient's temperature had returned to normal within 18 hours of starting the drug—i.e., after only 8 g. had been given—the permanence of its effect and the final isolation of the organism made its curative action a certainty.

Summary

A case of meningococcal septicaemia is described in which the presenting symptom was severe jaundice—the meninges escaping infection—and in which at first a mistaken diagnosis of Weil's disease was made. Cure of the condition was dramatic, and resulted from the use of sulphathiazole.

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