STAPHYLOCOCCAL SEPTICAEMIA TREATED WITH SULPHADIAZINE

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The chemotherapy of staphylococcal septicaemia by means of drugs of the sulphonamide group has been disappointing. In a study of the efficacy of the newer derivatives of this group Kolmer and Brown (1942) conclude that the chemotherapy of staphylococcal infections is unsatisfactory and is certainly inferior to similar therapy applied to haemolytic streptococcal and pneumococcal infections. Reimann (1942), after an exhaustive review of published cases, is of the same opinion. The treatment of choice for these infections is by means of penicillin. Unfortunately penicillin is not yet available for general use, and until supplies are forthcoming the sulphonamides remain the most hopeful therapeutic agents.

In the case here recorded sulphadiazine showed itself to be remarkably efficacious. Finland, Peterson, and Goodwin (1942), who have compared the efficacy of various preparations of sulphonamides, treated five cases of staphylococcal septicaemia with sulphadiazine. The average total dose given was 147 g. They claim a good therapeutic response in one case and a doubtful response or good initial response with relapse in the other four. It should be noted that, of these four, one was complicated by pyonephrosis and three by osteomyelitis. There were no deaths, but the cases complicated by bone involvement needed surgical drainage before chemotherapy was effective. These authors conclude that the efficacy of sulphadiazine is probably similar to that of sulphathiazole, but its lower toxicity makes it the drug of choice, particularly when prolonged therapy is desirable. In the present case sulphadiazine was not used until sulphathiazole had proved to be ineffective.

Case History

The patient, a soldier 32 years of age, was admitted to a military hospital on Feb. 23, 1943, complaining of aching in the limbs and malaise for one week. His health previously had been good, but a fortnight before the onset of his illness he had had a boil on the back of his neck which had been treated with hot fomentations and vigorous expression of pus. During several days before admission he had felt unwell and feverish, and was thought to have an influenzal attack. There had been some cough with blood-stained sputum, and heavy night sweats had been troublesome. The bowels had been constipated. He complained also of a tender lump over the left scapular angle that was painful when he sat back against his pillows. There had been no known contact with any infectious disease.

On examination the temperature was 101° F. and pulse rate 115. There was no evident anaemia, but the lips had a cyanotic tinge. The throat and teeth were in good order. The lungs showed no obvious abnormality. The cardiovascular system was normal and the blood pressure 130/95. The spleen could not be felt. No abnormality was found in the central nervous system. There were tender nodules at the angle of the left scapula, in the right lumbar region, in the groins, on the abdominal wall, in the right thigh, and on the inner aspect of the left knee. Some of these were acutely tender, and over several the skin was reddened. The urine was acid in reaction, with no sugar or albumin, and the deposit contained a few leucocytes and epithelial cells. The blood count on admission was: haemoglobin, 84%; red blood cells, 4,690,000 per c.mm.; colour index, 0.91; white blood cells, 14,000. The sputum contained no tubercle bacilli, but was blood-stained.

The patient was put on full doses of sulphathiazole. On March 2 a fresh crop of nodules appeared, a hectic temperature persisted, and his general condition was very poor. A differential white cell count gave a total of 20,700, with 78% polymorphonuclear cells. Blood culture proved sterile, but pus from a fluctuant nodule on the left arm was reported on as follows: "Smears: Large numbers of pus cells and clusters of Gram-positive cocci, morphologically staphylococci. Culture: Profuse growth of *Staph. aureus*." X-ray examination of the chest showed a "right basal pneumonitis."

By March 9 the patient's condition had still further deteriorated. There was no abatement in the fever and he had developed an ulcer on the right cornea. Several of the abscesses were fluctuant, and from two of them a small amount of thick pus was aspirated. A few petechial spots were noted on the trunk. A large, deep, and very tender abscess developed in the muscles of the right thigh, and

there was acute pain with local tenderness in the region of the left elbow; but radiographs of the joint and of the right femur were negative. The white blood cell count was 16,690.

On the following day a shower of emboli occurred over the lower extremities, giving the picture of an extensive macular rash. The temperature was at this time 103.5° F. and the pulse rate 145. On March 13 sulphathiazole was stopped, a course of 60 g. having been completed without obvious benefit. The administration of sulphadiazine was then begun. After 48 hours the temperature was normal, and the patient's comment was: "I feel quite different. I did not expect to feel as I do now in six months' time." A blood count showed: haemoglobin, 82%; red blood cells, 4,600,000 per c.mm.; colour index, 0.9; white blood cells, 22,000, 77% being polymorphonuclears.

The temperature did not settle altogether, and a slight evening rise persisted, but the general improvement in well-being was maintained and there were no further embolic phenomena. The white cell count on March 17 was 11,600, and on March 25 14,200. At this time sulphadiazine was stopped after a total dosage of 100 g. The patient's general condition was now fairly satisfactory. Pathological examination of the urine had been repeatedly negative. The haemoglobin was 82% and the leucocyte count on April 1 was 13,600. A large indurated swelling of the right thigh was still present, causing much pain and discomfort. A further radiograph of the right femur was negative. By April 13 this swelling had become more localized, with a suggestion of central fluctuation. The haemoglobin and white cell count were unaltered. There was no further rise of temperature. On April 20, in view of the prolonged septic infection and moderate degree of anaemia, one pint of fresh compatible blood was given by intravenous transfusion. Haemoglobin was 96% after transfusion. On May 4 the abscess in the right thigh was aspirated, 30 c.cm. of blood-stained serous fluid being withdrawn: this was sterile on culture. Convalescence thereafter was uneventful.

Summary

A case of staphylococcal septicaemia is recorded in which a dramatic response was obtained with sulphadiazine after sulphathiazole had proved ineffective. Since penicillin, the drug of choice, is not generally available, optimum use must be made of the sulphonamides in treating this condition. Sulphadiazine is the preferable derivative of this group because of its low toxicity and its apparent greater efficacy.

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SPONTANEOUS RUPTURE OF ABNORMALLY MOBILE SPLEEN

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Spontaneous rupture of the spleen in non-tropical countries is a very rare condition, and is known to occur occasionally in patients suffering from malaria or typhoid; a few cases of rupture of leukaemic spleens have been recorded. Zuckerman and Jacobi (1937) reviewed 28 cases of rupture of the normal spleen, but considered that only 21 of these could be accepted. In the case now reported a spontaneous rupture of the spleen occurred while the patient was in bed in hospital suffering from acute axillary lymphadenitis; subsequent examination showed only inflammatory changes in the spleen.

Case Report

A soldier aged 35 was admitted to the Borough General Hospital, Ipswich, on Sept. 13, 1942, suffering from pain in the left axilla of 24 hours' duration. On the evening before his admission he complained of aches and pains all over the body and had vomited once. On admission the temperature was 101.6° F., pulse rate 95, and respiration rate 22. A few enlarged tender glands were felt in the left axilla, but no primary cause for this adenitis was found. He had been given 7 g. of sulphapyridine during the previous