had a contraction and at the height of it she suddenly called out and collapsed. She was unconscious and her breathing was stertorous. The nurse administered oxygen and sent for medical aid. The patient was found to be dead. The face was cyanosed, there was no breathing or heart beats. An attempt was made at resuscitation by artificial respiration with oxygen and an airway, but without success.

A post-mortem report by Dr. Mackenzie, senior registrar pathologist, was as follows: "Chest.—The heart was normal in size and showed no disease of the valves or of the coronary arteries. The blood in the heart and great vessels was quite fluid, no P.M. clots being present. Over the surface of the lungs were many petechial haemorrhages. The lungs showed a mild emphysema only. The trachea and bronchi were normal . . . otherwise there was nothing of note."

The pathologist decided that death was due to anaphylaxis caused by the penicillin injection to which she had been previously sensitized.

COMMENT

This case appears to have a certain resemblance to the case described by Thompson (1952). There were the same symptoms: vomiting, cyanosis becoming very intense, stertorous breathing, protruding tongue. The main difference is in the matter of time: in Thompson's case the reaction occurred about ten minutes after the injection, and in our case it did not occur until approximately one hour ten minutes after the injection. The other, more startling, difference is that in Thompson's case, and also in that of Waldbott (1949), there was a warning non-fatal reaction. Our patient had none.

A further case of death by anaphylaxis caused by penicillin has been described by Mayer *et al.* (1953). This was referred to by the *Lancet* (1953), when various other references were given.

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Spontaneous Adrenal Haemorrhage in Ulcerative Colitis

As the Friderichsen-Waterhouse syndrome, bilateral adrenal haemorrhage is a well-recognized complication of acute infections by meningococci and, more rarely, by other organisms. Adrenal haemorrhage has also been reported in cases of pregnancy and in single cases in a heterogeneous group of miscellaneous morbid conditions. These include such diverse conditions as burns, hypertension, hydatid infection of the liver, leukaemia, and carcinoma of the lung (Altschule, 1939; Godfrey, 1947; Lauckner and Hebbert, 1947; Dewhurst, 1951). The present report is concerned with a case of acute ulcerative colitis which terminated in a massive bilateral adrenal haemorrhage.

CASE REPORT

The illness began when the patient, a farmer aged 47, previously very fit, had an acute attack of diarrhoea accompanied by abdominal colic, and also, a few days after the onset, by fever. Examination of the stools failed to demonstrate any pathogens. For the first fortnight the general condition remained very good, but in the third week of the illness some deterioration became apparent. The patient was passing, on an average, 12 offensive fluid stools a day, but blood and mucus were not present. At the end of the fourth week he was admitted to hospital, having been given at home an intensive course of chloramphenicol without any improvement.

On the day of admission blood and mucus appeared in the stools, and the patient was pyrexial; there was obvious loss of weight. No other significant findings were elicited on clinical examination. Stools contained many pus and red cells, but no pathogens. There was polymorph leucocytosis. Agglutination tests and blood culture were negative. The next event, three days after admission, was the sudden and quite unexpected collapse of the patient. The pulse became imperceptible, and after a steadily deepening coma of a few hours' duration death occurred.

Necropsy revealed an extensive ulcerative colitis extending from the caecum to the rectum. The cause of death was a massive bilateral adrenal haemorrhage. The adrenals were converted into sacs of blood, a thin rind of cortical tissue being all that remained of the parenchyma. Haemorrhage was not found in other organs, the only other abnormality noted being coronary atheroma.

DISCUSSION

We have been able to find accounts of two cases in which adrenal haemorrhage has been associated with ulcerative colitis. Wilson and Roth (1953) reported a case in which a massive bilateral adrenal haemorrhage occurred in a woman aged 51 who was receiving corticotropin treatment for an exacerbation of ulcerative colitis. The aetiological relationship in this case between the colitis and the adrenal haemorrhage is not quite clear. An acute upper respiratory tract infection was present, and Wilson and Roth thought that corticotropin treatment or the infection may have been the determining factors of the haemorrhage. In a survey of the complications observed in a series of 129 cases of ulcerative colitis admitted during eleven years to the Radcliffe Infirmary, Oxford, Rice-Oxley and Truelove (1950) encountered one case in which there was adrenal haemorrhage. The patient died within one month of the onset of a severe ulcerative colitis. Necropsy revealed multiple small areas of haemorrhage in both adrenals. The authors thought that adrenal failure might be a factor contributing to the extremely rapid loss of weight and dehydration often seen in fulminating types of ulcerative colitis.

In the case reports referred to in the opening paragraph various theories have been advanced to account for the occurrence of adrenal haemorrhage. Haemorrhage has been ascribed to the operation of vascular damage, allergy, toxæmia, and a general tendency to bleed. Because ulcerative colitis has been included in the list of adaptation diseases we have been interested by the views of Selye (1950). The adrenal stimulated by the anterior pituitary plays an important part in the general adaptation response to stress, and Selye believes the Friderichsen-Waterhouse syndrome may be the result of cell damage following exhaustive overstimulation of the gland. (If this is true the part played by the corticotropin treatment in Wilson and Roth's case can readily be understood.) If adrenal haemorrhage in ulcerative colitis is to be ascribed to the operation of a stress factor it would not be surprising if the complications of this disease included other recognized manifestations of the diseased adaptation response. It is of interest, therefore, that Rice-Oxley and Truelove found a relatively high proportion of skin and joint lesions of an allergic type in their survey of the complications of ulcerative colitis.

Our thanks are due to Dr. A. W. Hansell for notes on the patient's condition before admission to hospital.

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