

MEDICAL MEMORANDA

Hepatosplenic Abscesses due to *Yersinia enterocolitica*

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Infection with *Yersinia enterocolitica* is being reported with increasing frequency from many parts of the world (Mollaret, 1971). Only 20 cases of the septicaemic form have been reported (Chessum *et al.*, 1971; Mollaret *et al.*, 1971) and only four cases with multiple liver abscesses (Hassig *et al.*, 1949; Bloquiaux, 1968). The rarity of this condition induced us to describe a further cases with interesting epidemiological features.

Case Report

An African man aged 57 years was a labourer on a pig farm, and when first seen complained of a mild cough and chest pain. He was treated with benzylpenicillin but the next morning was found to be confused, and was then admitted to hospital. According to his wife he had complained of diarrhoea for five days and passed dark blood in the stool four days previously.

On examination he was found to be malnourished with pellagranous skin changes, and was dehydrated and shocked. He was confused and disorientated but examination of the nervous system showed no abnormalities. The liver was enlarged to three finger breadths below the costal margin and there was noticeable tenderness in the right hypochondrium. The spleen was not palpable. The temperature on admission was 36.4°C but later rose to 38°C.

Investigations.—The haemoglobin was 13.7 g/100 ml; white blood count 6,800/mm³ (72% neutrophils, 22% lymphocytes, and 6% monocytes); E.S.R. 65 mm in one hour (Westergren); blood urea 124 mg/100 ml, potassium 4.6 mEq/l., sodium 137 mEq/l., CO₂ content 11 mEq/l., chlorides 104 mEq/l., total bilirubin less than 1 mg/100 ml, aspartate transaminase 590 units, alanine transaminase 27 units, lactic dehydrogenase 590 units, and the prothrombin index 43%. Total protein was 6.9 g/100 ml, the albumin constituting 2.7 g, α₁-globulin 0.8 g, α₂-globulin 1.1 g, β-globulin 0.4 g, and γ-globulin 1.9 g. Agglutination tests for typhoid and paratyphoid fever, brucellosis, and rickettsial diseases gave negative results. Faecal cultures were negative for salmonella and shigella, and parasites were not detected. Blood taken on the sixth day after admission yielded *Yersinia enterocolitica* on culture.

Clinical Course.—An initial diagnosis of amoebiasis was made even though *Entamoeba histolytica* could not be detected in the stool. The patient was rehydrated with intravenous fluids and was treated with metronidazole 800 mg three times daily and oxytetracycline 500 mg four times daily. His condition gradually deteriorated and a right lower lobe pneumonia developed, which was treated with benzylpenicillin 1 million units six-hourly. He died seven days after admission.

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At necropsy there was evidence of a terminal lobar pneumonia, but the striking feature was the presence of numerous small yellow, necrotic foci in the liver and spleen. Histological examination of the liver showed a fine monolobular cirrhosis and numerous pyaemic abscesses. In addition there were fairly prominent haemosiderin deposits, a common finding in adult African males in South Africa. The spleen similarly showed haemosiderosis and pyaemic abscess formation. *Y. enterocolitica* was grown from the hepatic and splenic abscesses.

Bacteriology.—The bacteria isolated from the blood and hepatic and splenic abscesses were small Gram-negative coccobacilli and showed the typical features of *Y. enterocolitica*, serogroup 3, phage type 9a. The strain was fully sensitive to oxytetracycline.

Epidemiological Findings.—*Y. enterocolitica*, serogroup 3, was isolated from rectal swabs and faeces of six out of 12 pigs with which the patient was closely associated. Five of these isolates belonged to phage type 9a and one to phage type 10³.

Comment

Y. enterocolitica infection produces a wide range of clinical presentations (Wauters, 1970; Mollaret, 1971). The most commonly reported is acute gastroenteritis, especially in children. Other forms of the disease include a right iliac fossa syndrome due to acute inflammation of the terminal ileum or mesenteric lymphadenitis or both, acute or chronic arthritis, and erythema nodosum with or without gastroenteritis.

In a review of 16 septicaemia cases (Mollaret *et al.*, 1971) the infrequency and opportunistic nature of these infections were emphasized. We have found a high incidence of septicaemia in South Africa (nine out of 29 proved cases). This finding could be explained by the prevalence of liver disease and siderosis in the local African population. The enhancing role of iron in some bacterial infections has been shown repeatedly (Bullen and Rogers, 1969), and we have shown that ferric ammonium citrate enhances the virulence of human strains of *Y. enterocolitica* in mice (Rabson *et al.*, 1972). We postulate, therefore, that iron overload, as found in cirrhosis, blood disorders such as thalassaemia, and African siderosis, could in various ways diminish the host's resistance to *Y. enterocolitica* infection and increase the virulence of this organism.

A definite association between infection in man and pigs has not yet been conclusively found. The present patient was in close contact with these animals, and the finding of the same serogroup and phage type in both patient and pigs furnishes convincing evidence of direct transmission from pig to man.

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