Overwhelming post-splenectomy infection with group B *Streptococcus*

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Summary

A case of overwhelming post-splenectomy infection is described. This occurred 10 years after splenectomy in an otherwise normal male adult. The infecting organism, β -haemolytic *Streptococcus* Group B, is usually of low pathogenicity, but in this case caused profound hypotension, jaundice and the shock lung syndrome. Overwhelming post-splenectomy infection with this organism has not previously been reported.

Introduction

It is acknowledged that there is a definite risk of overwhelming post-splenectomy infection (OPSI) in children, particularly when the spleen has been removed in the first 3 years of life. There has, however, been some disagreement on the hazards of splenectomy in normal adults. A case is reported of OPSI caused by an unusual micro-organism: a β -haemolytic *Streptococcus* of Lancefield's Group B (*S. agalactiae*).

Case report

A 29-year-old labourer was admitted with a short history of headache, abdominal pain and vomiting. He had previously been well, and had been at work on the morning of admission. A splenectomy had been performed 10 years previously for traumatic splenic rupture. On admission he was flushed, pyrexial (38.5°C) and slightly dehydrated, with a pulse of 105/min and BP of 140/90 mmHg. Examination of his chest was normal, but there was mild generalized abdominal tenderness. There was an episode of profuse watery diarrhoea during the examination. Investigations included Hb 14.0 g/dl, WCC $5.4 \times 10^9/\text{l}$, plasma urea 6.4 mmol/l and normal plasma electrolytes.

He was rehydrated intravenously and treated symptomatically for his diarrhoea, but the following morning he experienced a rigor and was found to be dyspnoeic, cyanosed and confused. His pulse and BP were 140/min and 100/60 mmHg respectively and

there were scattered coarse crackles throughout both lungs. The WCC had risen to $30 \times 10^9/\text{l}$ and the plasma urea to 13.8 mmol/l. Serum bilirubin was 34 $\mu\text{mol/l}$, alkaline phosphatase 21.3 i.u./l, and aspartate amino transferase 50 i.u./l. He was hyper-ventilating but hypoxic with an arterial PO_2 of 7.2 kPa (54.0 mmHg) and PCO_2 of 3.6 kPa (27.0 mmHg). His BP fell to 70/40 mmHg, but responded to dopamine and steroids. Large volumes of i.v. crystalloids were required to restore his central venous pressure to normal. The chest X-ray showed features consistent with the shock lung syndrome.

Blood cultures yielded a heavy growth of a β -haemolytic *Streptococcus* of Lancefield's Group B, sensitive to benzyl penicillin, erythromycin, chloramphenicol and cefuroxime, and resistant to tetracycline. Lumbar puncture produced clear cerebrospinal fluid with no cells, and normal glucose and protein concentrations. It was sterile on culture and the organism was not isolated from any other site. As there was an unsubstantiated history of penicillin allergy, he was given i.v. chloramphenicol one g thrice daily changed after 2 days to cefuroxime 1.5 g thrice daily.

Over the next 3 days his BP rose spontaneously and his urinary output was satisfactory, although he became jaundiced and remained hypoxic despite high concentrations of inspired oxygen. Thereafter he made a gradual but complete recovery, his radiology, biochemistry, and pulmonary function returning to normal within 3 weeks.

Discussion

The spleen has an important role in the body's defence against infection. It is involved in the elimination of particulate matter such as bacteria from the blood stream, and in the early production of antibody to circulating antigen. Despite the definite risks of OPSI in children, there are conflicting views on the hazards of infection in normal adults who require splenectomy after trauma (de Gruchy, 1978; Krivit, Giebink and Leonard, 1979;

McCulloch and Parker, 1979). When splenectomy has been performed for haematological disease such as lymphoma or thalassaemia major in children or adults, the commonest infecting organism is *S. pneumoniae*. Less frequently *Neisseria meningitidis*, *Escherichia coli*, *Haemophilus influenzae*, *Staphylococcus aureus* or malarial parasites are involved. There is increasing evidence that OPSI also occurs in otherwise normal adults, *Strep. pneumoniae* again being most frequently seen, with a mortality of 50–75% (Krivit *et al.*, 1979; Gopal and Bisno, 1977). Group B streptococci are increasingly recognized as human pathogens, especially in neonates. Infection in adults is seen particularly when there is co-existing genito-urinary pathology or diabetes mellitus (Bayer *et al.*, 1976). They are usually of low pathogenicity, and have not to the authors' knowledge been previously reported as a cause of OPSI. In the present patient, however, they caused severe septicaemia with hypotension, jaundice and shock

lung. This case adds further support to the growing evidence of OPSI in otherwise normal adults.

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