Peritonitis by *Streptococcus pneumoniae* Secondary to Pneumococcal Chest Infection in a Patient on Continuous Ambulatory Peritoneal Dialysis

W.A. Al-Wali a
R. Rosemarie Baillod b
J.M.T. Hamilton-Miller a
W. Brumfitt a

\[\text{\textsuperscript{a}}\text{Departments of Medical Microbiology, and \textsuperscript{b}Nephrology, The Royal Free Hospital and School of Medicine, London, UK}\]

Dear Sir,

Bacteria causing CAPD peritonitis usually infect either through or around the catheter, or (rarely) after perforation of, or transmural migration from, the bowel. We describe here a case of peritonitis due to *Streptococcus pneumoniae* spread via a bacteraemia secondary to a chest infection.

A 55-year-old lady with chronic renal failure who had been receiving CAPD for 1 year was admitted with a productive cough, pain in the left shoulder and general malaise. On examination she looked unwell and could not stand, although blood pressure, pulse rate and temperature were normal. Her chest X-ray showed bilateral patchy consolidation consistent with bronchopneumonia, and rales were heard. Her haemoglobin was 8.7 g/l, and the white cell count 11.4 × 10^9/l. Sputum contained moderate numbers of polymorphs and gram-positive lanceolate diplococci. The next day, she had a pyrexia (37.9 °C), nausea, vomiting and left-sided abdominal pain. The peritoneal dialysate (PD) fluid was cloudy, containing 300 WBC/µl (with 80% polymorphs) and large numbers of gram-positive diplococci. The patient was started on intravenous and intraperitoneal vancomycin. *S. pneumoniae* was grown from the blood culture taken the previous day, from sputum and PD fluid, but not from a swab taken from the PD exit site. All the pneumococcal strains isolated were of type 14. Intravenous cefotaxime 1 g 8-hourly for 8 days was given, followed by oral cephradine 500 mg 6-hourly for 5 days. Intraperitoneal vancomycin was continued for a total of 21 days.

Two days later the respiratory signs and symptoms improved, the abdominal pain and tenderness subsided, and the PD fluid became clear. Her temperature returned to normal after 5 days.

This case raises two interesting points. The pneumococcus is a rare cause of peritonitis during CAPD [1] and the infection appears to have spread directly from the blood. We have not previously seen haematogenously spread peritonitis in a CAPD patient, although by analogy with the situation during liver failure (when ascites becomes secondarily infected from the blood) it might be expected to occur. Vas [2] recently described the haematogenous route of infection by viridans streptococci in a ‘few’ patients (without literature reference).
It can be calculated from published data [3, 4] that approximately 4.5 cases of domiciliary acquired bacteraemia occur/year/10,000 population in the UK. As there are approximately 3,000 patients receiving CAPD, about 1 case of bacteraemia/year would be expected in CAPD patients. It would be interesting to know whether other workers have observed peritonitis following bacteraemia in such patients.

References