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Acute crescentic glomerulonephritis as a complication of a *Staphylococcus aureus* abscess of hip joint prosthesis

We report a case of acute diffuse proliferative glomerulonephritis following a coagulase positive staphylococcal (*S. aureus*) abscess around a hip joint prosthesis. A standard work on renal pathology¹ describes only three personally observed cases of staphylococcal septicaemia without endocarditis, in association with proliferative glomerulonephritis, and cites a description of two cases² associated with staphylococcal pneumonia. Furthermore, we are not aware of a previous case of acute diffuse proliferative glomerulonephritis occurring after a *Staphylococcus aureus* infection of a hip joint prosthesis.

A 75 year old man had a right total hip replacement followed by a transurethral resection of prostate two months later. Over the following month he became increasingly confused and feverish. Blood and urine cultures persistently showed *Staphylococcus aureus* infection. He was treated with vancomycin, velosef, and amikacin, but developed uraemia despite peritoneal dialysis and died three months after the first operation.

At necropsy about 100 ml of purulent material were found in a loculated thick walled abscess around the hip prosthesis. Blood and hip abscess culture showed *Staphylococcus aureus* infection. Histological examination of the kidney showed diffuse proliferative glomerulonephritis. The glomeruli contained numerous crescents, thrombi, neutrophil polymorphs and areas of necrosis.

Previous studies of diffuse proliferative

glomerulonephritis due to coagulase positive staphylococci indicate an immune complex aetiology rather than a bacterial embolic one. Electron microscopy has shown distinct subepithelial deposits,³ immunofluorescence has shown granular deposits of C3 and IgG⁴ within the glomerulus, and staphylococcal antigen and serum complement have been repeatedly reported to be reduced.⁵ The loculated nature of the abscess in this case would make the propagation of large septic emboli much less likely than immune complexes, further confirming the latter theory of pathogenesis.⁶

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Latex agglutination test for detecting CMV antibodies in patients awaiting bone marrow transplantation

Cytomegalovirus (CMV) infection in patients undergoing bone marrow transplantation is a major cause of morbidity and mortality.¹ Patients who do not possess cytomegalovirus antibodies are particularly at risk if given blood or blood products from

seropositive donors.² The use of intravenous CMV immunoglobulin has been shown to be an effective prophylactic agent in this group,² but the serum is expensive and so its use has to be restricted to seronegative patients. The availability of a rapid and reliable test that can show antibodies to CMV is therefore necessary.

To assess the sensitivity and specificity of the latex agglutination test an initial study of 100 sera was made. These sera were all from known homosexuals presenting to a genitourinary clinic. In a further study of patients awaiting bone marrow transplantation 93 sera were examined. All sera had been stored at -80°C before examination. In addition, three further sera from one patient, taken over a period of five months were examined—the patient was a 39 year old woman suffering from relapsed acute myeloid leukaemia. The sera were examined, both by a latex agglutination test (CMV Scan, Becton and Dickinson, Baltimore, Maryland) and an IgG ELISA test (Virenz G-CMV, Northumbria Biologicals Limited, Cramlington, Northumberland). The tests were performed exactly as stated in the instructions.

In the initial study of 100 sera from homosexuals there was 99% correlation between the two tests. Eighty sera gave positive results by both methods and 19, negative results. The remaining serum gave a positive result by latex but a negative result by ELISA. When both tests were repeated on this serum, both gave positive results. Of 100 sera examined by the ELISA test, there was one false negative result. In the study of sera from patients awaiting marrow transplantation there was a 100% correlation between the two tests. Of the transplant recipients, eight (62%) were positive and five (38%) negative.

The initial serum from the patient who had serial studies was received on 31 December 1985 and was positive by both methods. A further serum was received on 24 April 1986 and was still positive by both methods, though the ELISA was only weakly positive. Two further sera, received on 21 and 29 May 1986, were negative by both methods. These results were confirmed on retesting of the stored sera.

We agree with the findings of previously published studies^{3,4} that the latex agglutination test for CMV is both sensitive and specific. Furthermore, the test is rapid and easy to perform, making it suitable for use in non-specialist laboratories. Even in virology laboratories it compares favourably with other methods, particularly complement fixation tests which are known to be