False Positive Auto-Antibodies in HIV Infection

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Sir,

Anti-neutrophil cytoplasmic antibodies (ANCA) are now routinely available in most centres. Andrassy et al. [1] initially reported that ANCA were restricted to patients with Wegener's granulomatosis and/or microscopic polyarteritis [1]. Other workers have confirmed that the test has high specificity for Wegener's granulomatosis and microscopic polyarteritis [2], and reported that changes in antibody titres were valuable in monitoring disease activity [3].

We have recently seen a case of an atypical neuropathy associated with a positive ANCA test. An initial diagnosis of polyarteritis was made and treatment begun. However, the patient was subsequently found to have been infected with the human immunodeficiency virus, and the ANCA a false positive.

A 31-year-old male was admitted with a history of a painful neuropathy and myalgia initially affecting the lower limbs then his hands. In addition, he noticed difficulty in starting micturition and swallowing fluids. On examination, he was hypertensive (blood pressure 160/120 mm Hg) and had evidence of proximal muscle wasting and weakness in addition to hyperaesthesia of his feet and reduced ankle jerks. He had no stigmata of HIV infection. Nerve conduction studies confirmed the peripheral neuropathy, and electromyogram examination a primary neuropathy. More detailed somatosensory testing suggested spinal cord involvement, and visual evoked responses were delayed bilaterally. Cerebrospinal fluid examination was in keeping with an inflammatory process. Investigations on admission showed a normal white blood cell count with a reduced total lymphocyte count of 1.4×10^9 litre. Liver function tests were mildly abnormal; and there was a polyclonal increase in immunoglobulins. During the course of his admission, several auto-

antibodies were noted to be positive on one or more occasions: double-stranded DNA, smooth muscle antibodies and ANCA. ANCA were detected by routine immunofluorescence [4] using alcohol-fixed neutrophils. Typically, the staining was perinuclear with some focal intracytoplasmic positivity. Serum creatinine and renal size were normal, and urine stick testing was intermittently positive for blood and protein during the course of admission.

Expert neurological opinion was sought, and a diagnosis of polyarteritis suggested based on the clinical and neurophysiological findings, unexplained hypertension and a positive ANCA test.

The patient was commenced on high-dose steroids without any symptomatic improvement.

Subsequently, HIV antibodies were detected. Further testing revealed a reduced T helper/suppressor ratio of 0.12 (normal > 0.7), the presence of both HIV and p24 antigens in serum samples without the presence of p24 antibodies. This would classify the patient as having

CDC grade 4 disease [5], and high-dose steroids would be contraindicated due to the already immunocompromised state.

The patient was discharged home and readmitted within 2 weeks with pneumocystis pneumonia. HIV infection has been reported to have many neurological manifestations with involvement of the central nervous system, spinal cord, peripheral nerves and muscle [6].

Despite counselling, our patient did not appear to have any of the known risk factors for HIV infection; intravenous drug abuse, homosexual activity or consorting with prostitutes.

Previous studies have shown that patients infected with HIV may have circulating immune complexes, usually composed of IgG or IgM [7]. Others have noted the presence of anti-nuclear antibodies, present in up to 12% of patients [8]. Until now, double-stranded DNA antibodies have only been reported in association with severe systemic infection [8]. Although double-stranded DNA antibodies were detected at times during his illness,

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the nature of the cytoplasmic staining obtained during the ANCA test was different for that reported with systemic lupus erythematosus [4]. As suggested by Koderisch et al. [9], false positive testing for ANCA and other auto-antibodies, as detected by indirect immunofluorescence techniques, may reflect non-specific IgG binding to Fc receptors [9], and in such cases more specific tests based on ELISAs designed to recognise neutrophil cytoplasmic constituents may prevent inaccurate diagnosis and inappropriate treatment.

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