Churg-Strauss vasculitis with brain involvement following hepatitis B vaccination

Sirs.
Active immunisation against hepatitis B is highly effective and usually well tolerated. Side effects, including fever, arthralgias, fatigue and injection site pain, are often slight, while severe systemic reactions are rare. Nevertheless, various autoimmune diseases, including vasculitis, occurring after hepatitis B vaccination have been reported (1-3). Our group has previously described a patient with hepatitis B vaccination-related Churg-Strauss syndrome (CSS) (3). We describe here another case of CSS with unusual involvement of the central nervous system (CNS) which developed after vaccination against hepatitis B.

A 47-year-old male without a history of atopy received three doses of hepatitis B vaccine from November 1994 to May 1995. Two weeks after the third injection he developed chronic rhinitis, chronic sinusitis and nasal polyposis, which were treated surgically in September 1998. In the following months he experienced severe asthmatic symptoms. Within a year fever, polyarthralgias, and purpuric lesions on the legs developed. Laboratory investigations revealed an elevated erythrocyte sedimentation rate (ESR, 90 mm/h), eosinophilia (eosinophils, 5355/mm³) and a high titre of myeloperoxidase-anti-neutrophil cytoplasmic antibody (MPO-ANCA). Hepatitis C serology was negative. The anti-hepatitis B surface antigen (HBs) titre was 357 mU/ml. Tests for rheumatoid factor, antinuclear antibody (ANA) and antibodies toward extractable nuclear antigens (ENA) were all negative. His chest X-ray was normal. No biopsy was performed. A diagnosis of CSS was proposed and the patient was given 35.7 mg of prednisone daily. In March 2000, he noticed weakness and impaired sensitivity in his lower right leg. Electromyography (EMG) revealed neuropathy of the peroneal nerve. The CSS diagnosis was thus confirmed according to the 1990 criteria of the American College of Rheumatology for the classification of CSS (4) and the patient was started on therapy with methotrexate (MTX, 15 mg weekly).

In following months his neurological symptoms worsened and the patient experienced tingling in the upper arms, cognitive impairment with amnesia for recent events, emotional instability and nominal aphasia. Magnetic resonance imaging of the brain (August 2000) showed multiple hyperintense T2 lesions, compatible with demyelinated areas, throughout the white matter of both the frontal lobes and of the left temporal and parietal lobes. In December 2000 the decision was made to discontinue MTX therapy, to introduce cyclophosphamide (100 mg daily) and to administer pulses of intravenous immunoglobulins (500 mg/kg every 5 weeks). The patient reported feeling well and his neurological symptoms partially receded.

In our patient a temporal relationship between hepatitis B vaccine administration and the appearance of the initial symptoms of vasculitis was observed, since allergic rhinitis, nasal polyposis and asthma gradually developed two weeks after the third dose. Moreover, the appearance 4 years later of symptoms of vasculitis, is consistent with the typical course of the disease, where respiratory symptoms may precede, even by many years, the cutaneous, neurological and systemic manifestations (5). The mechanisms by which vaccination could trigger vasculitis are still a matter of debate (1). In genetically susceptible individuals, infections may trigger the release of proinflammatory cytokines, priming neutrophils and endothelial cells and thus allow ANCA to activate neutrophils to release cyto- kine and mediators that lead to vascular injury and recruit mononuclear cells and T lymphocytes, that perpetrate and intensify the local damage (6). We can thus assume that the administration of a virus derived-protein, such as HBs antigen, rather than a whole infective agent, may have triggered the pathogenic mechanism described above. The present case of hepatitis B vaccine-related CSS was complicated by unusual CNS involvement. Indeed, Ferro (7) has noted that CNS involvement is rare in CSS. Nevertheless, Herroelen et al. (8) described 2 patients with CNS demyelination occurring after hepatitis B vaccine administration. This suggests that such neurological involvement may be a consequence of hepatitis B vaccination, rather than a very uncommon complication of CSS.

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References

Dermatomyositis and celiac disease association: A further case

Sirs.
Recently Marie et al. (1) reported in this journal the case of a female patient affected by dermatomyositis (DM) who developed celiac disease. The authors suggested suspecting celiac disease in DM/PM patients presenting symptoms of malabsorption. We describe a further case of an association of DM and celiac disease in which celiac disease preceded the clinical onset of DM.

A 48-year-old woman was referred to our in-patient clinic for a recent history of polyanarthrits and pleuritis. Her past medical history was unremarkable until 1997 (45 yrs. old) when she complained of abdominal pain, diarrhea, asthenia, and weight loss. Laboratory findings were as follows: erythrocyte sedimentation rate (ESR) 15 mm/l hr, C-reactive protein (CRP) 0.3 mg/dl (n.v. < 0.6), serum protein 5.2 mg/dl and albumin 2.5 mg/dl, and serum creatine kinase (CK) 289 U/l (n.v. < 167). The hemoglobin and full blood counts were normal, as were liver and renal function tests. Malabsorption was suspected. A D-xylene test was normal with xyluria at 10.4% (n.v. > 16) and xyluria 24% and 48% (n.v. < 33); stool cultures for bacteria and parasites were negative. IgA anti-endomysium, as well as IgG and IgA anti-gliadin antibodies, were present. Duodenal biopsies showed mucosal atrophy with lack of villi, hypertrophy of crypts, and lymphocyte infiltrates beneath and within the epithelium. A diagnosis of celiac disease was made and treatment with a gluten-free diet was started, with disappearance of the malabsorption and abdominal discomfort.

The patient was well until July 2000, when...