Reversible posterior leukoencephalopathy in diffuse scleroderma

Sirs,

Reversible posterior leukoencephalopathy syndrome (RPLS) is a clinical radiologic syndrome of heterogeneous etiologies characterised by headache, seizures, visual disturbances, and altered consciousness in association with transient changes on neuroimaging consistent with cerebral edema (1). Conditions commonly associated with RPLS include hypertensive encephalopathy, eclampsia and immunosuppressive therapy. We describe a patient with diffuse scleroderma who developed RPLS complicating the course of a scleroderma renal crisis.

A 27-year-old woman with systemic sclerosis (SSc) presented with rapid onset of mental confusion, severe headache unresponsive to analgesia, and visual disturbances. She had been diagnosed with diffuse-type SSc four years ago on the basis of new-onset Raynaud's phenomenon, digital ulcers, rapidly progressive diffuse skin thickening (modified Rodnan skin thickness score of 46), telangiectasias, esophageal dysmotility, gastric antral vascular ectasia (watermelon stomach), and progressive urinary bladder sclerosis. At that time, she was treated with cisapride, pantoprazole, low-dose aspirin, prazosin, and fluoxetine. Previous treatments included low-dose D-penicillamine, mycophenolate mofetil, intravenous immunoglobulins, different calcium channel antagonists, and bosentan, all of which had been discontinued because of inefficacy or adverse side affects.

On admission, the patient was afebrile but new onset of malignant hypertension was detected (her blood pressure was 190/110 mmHg and fundoscopic examination showed bilateral retinal exudates). Laboratory investigations revealed microangiopathic hemolytic anemia, thrombocytopenia, acute renal failure in the absence of previous evidence of significant kidney disease, mild proteinuria and hematuria. An urgent computed tomography (CT) and subsequent magnetic resonance imaging (MRI) of the brain showed symmetrical white matter edema in the posterior cerebral hemispheres, particularly the parieto-occipital regions (Fig. 1A).

The patient was diagnosed as scleroderma renal crisis complicated with RPLS. Treatment was given with intravenous nitroprusside for rapid blood pressure control and captopril (progressive dose escalation regimen). The patient had gradual clinical improvement and stable blood pressure for the remainder of hospitalisation. Serum creatinine level progressively returned to normality and control MRI performed 2 weeks later showed complete regression of hypertensive lesions (Fig. 1B).

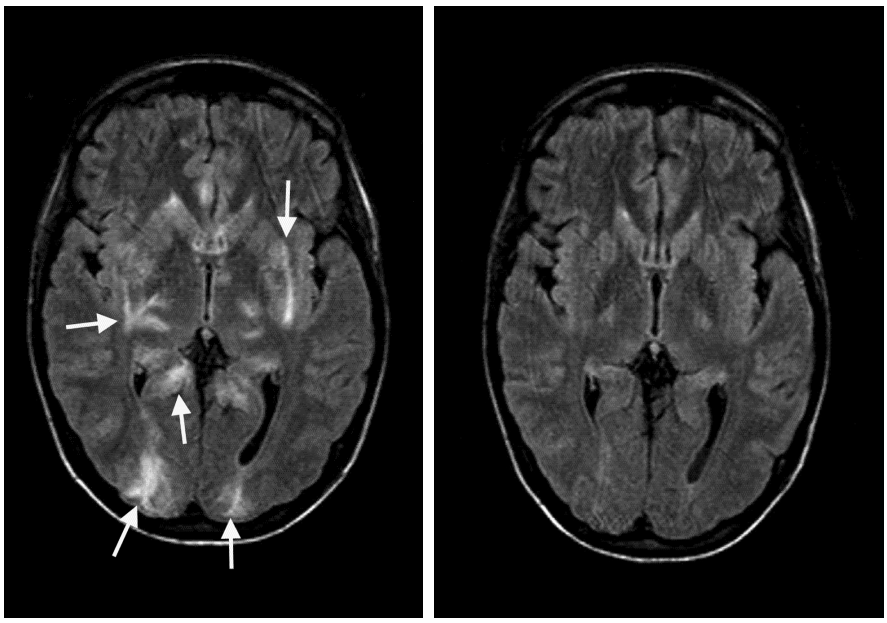

Fig. 1. Axial fluid attenuated inversion recovery (FLAIR) MR images at diagnosis **(A)** and three weeks after treatment **(B).** Basal MR image shows abnormal hiperintensity changes of subcortical white matter of the occipital lobes and basal ganglia regions (arrows). Post treatment follow up MR image reveals complete resolution of these signal intensity changes.

Over the last few years, an increasing number of reports have documented the association of RPLS with several autoimmune diseases including systemic lupus erythematosus (SLE), SSc (one case with limited scleroderma), overlap syndromes, and vasculitis (Wegener's granulomatosis, polyarteritis nodosa, microscopic polyangiitis, and Henoch-Schönlein purpura) (2-10). In this group of patients, renal disease with hypertensive crisis and the use of immunosuppressive therapies (including cyclophosphamide, cyclosporine, mycophenolate mofetil, interferon alpha, and rituximab) are the main risk factors for the development of this disorder. The exact pathophysiology of RPLS is poorly understood but is probably related to disturbed capillary permeability and increased vascular reactivity in the posterior portion of the brain (1). Neuroimaging is essential for its diagnosis. Classically, CT findings consist of bilaterally symmetric low attenuation in the posterior parietal/occipital lobes, whereas MRI demonstrates subcortical white matter hyperintense areas on T2-weighted images and particularly on FLAIR sequences in the same distribution.

In the vast majority of cases, complete clinical and radiographic recovery occurred with prompt antihypertensive treatment and/or withdrawal of the offending immunosuppressive drug.

In conclusion, although rare, RPLS is increasingly being recognised in patients with autoimmune diseases, raising controversy about a coincidental coexistence or a causal relationship. It is important to differentiate RPLS from other common CNS disorders that may afflict this group of patients.

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Competing interests: none declared.

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