

# Central Nervous System Involvement in Systemic Lupus Erythematosus: Cerebellar Infarction

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Dear Sir,

Central nervous system involvement in Systemic Lupus Erythematosus (SLE) that comprises a lot of varieties of syndrome are referred as neuropsychiatric lupus. Approximately 60% of these patients experience one of wide range of neuropsychiatric syndromes during the course of their diseases. The most common manifestations are cognitive impairment, which occurs in 50% of the patients, followed by headaches (25%), mood disorders, ischemic strokes (10%), seizures, anxiety and psychosis (1). In the present case, we present a young woman with SLE and diagnosed with ischemic stroke.

## CASE

A 31 year old woman was admitted to our department with a severe headache, nausea, vomiting accompanied by ataxia. Her past medical history was invaluable for SLE. She has received 100 mg/day azathioprine, 150 mg/day acetylsalicylic acid, 50 mg/day losartane (hypertension secondary to SLE), 4 mg/day methylprednisolone, 200 mg/day hydroxychloroquine for six years.

On admission the patient was calm and had no fever. Her blood pressure was 150/90 mmHg, the heart rate was 82 beats per minute, and oxygen saturation level was 96%. The rest of physical examination was not remarkable.

On the neurological examination; dysmetria and dysdiadochokinesia on the right side, distinctive ataxia and walking disability were recognized.

The differential diagnosis included ischemic stroke, cerebritis or vasculitis. Brain diffusion magnetic resonance imaging (MRI) indicated restricted diffusion in the right cerebellum (Figure 1) and chronic white matter lesions with MRI (Figure 2). Cranial and cervical angiographic findings showed no abnormality.

Anticardiolipin antibodies, lupus anticoagulant test were negative. Levels of C-reactive protein, C3 and C4 were normal. Further laboratory evaluation revealed abnormal titers of antinuclear antibody and anti-double stranded DNA antibodies.

In the light of these evaluations, we reached the diagnosis of acute cerebellar infarction in the patient due to the presence of SLE. In addition to her treatments, the dosage of acetylsalicylic acid was increased to 300 mg/day. After about seven days treatment, the patient could walk with support.

## DISCUSSION

The involvement of central nervous system in SLE was first described by Kaposi in 1869 (2).

Neurological syndromes in SLE patients can be classified based on the nature of the symptoms. Diffuse symptoms like confusion, seizures, coma and psychosis are usually secondary to central nervous system lupus. These symptoms are fundamentally caused by autoantibodies directed to neuronal cells or their products. Focal symptoms like tremor, hemiplegia, ataxia or blindness are primarily related to intravascular occlusion that is caused by atherosclerosis and antiphospholipid syndrome (3).

Present case is valuable because it was proved that focal symptoms attributed to reduced blood flow in cerebellum region was recognized in the patient. The patients with SLE showed higher stroke presence in the early stage of diagnosis (4). Stroke attacks were generally observed in first five years as seen in our case. Additionally, posterior circulation stroke can present as a manifestation of SLE which may be attributed to vasculitis or dissection.

In our case, cranial and cervical angiography showed no dissection in the vertebral artery.

The presence of hypertension is another stroke risk factor for our case either it is relevant to SLE or not, but SLE plays the primary causal role for this case since there are not very high values of tension artery measurements at the admission to the hospital and probably during the hospitalization. Also it would be considered that the patient is relatively young for complications of hypertension as a stroke risk factor.

Although low dosage of acetylsalicylic acid is useful to prevent the risk of stroke in most case, the exact protectiveness is not proven based on experimental studies. This hypothesis is confirmed by our case who used 150 mg/day dosage of acetylsalicylic acid, which was not enough to prevent stroke and this dosage was needed to be increased up to 300 mg/day to eliminate recurrence.

Consequently, acute ischemic circumstance can be frequently observed in SLE patients, so early diagnosis and efficient treatment of both lupus and involvement of central nervous system are important for good prognosis.

## REFERENCES

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