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Letter to the Editor

Before a Sinus Vein Thrombosis is Attributed to Lupus Erythematosus, Other Causes Must be Ruled Out

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We read with interest the article by Mai *et al.* about a 28-year-old woman with a one-week history of progressively worsening headaches and a first-time tonic-clonic seizure, which was caused by venous sinus thrombosis (VST) with subsequent hemorrhagic stroke [1]. Further investigations revealed elevated antinuclear antibodies, elevated anti-Smith antibodies, hypocomplementemia, and thrombocytopenia, thus meeting the EULAR criteria for systemic lupus erythematosus (SLE) [1]. The patient benefited from glucocorticoids, anticoagulants, and chloroquine [1]. The study is informative, but some points warrant discussion.

First, several alternative causes for CVT were not adequately ruled out [1]. In addition to hormonal imbalances, VST can also be caused by blood clotting disorders, particularly hypercoagulability due to factor V Leiden mutation, protein C or protein S deficiency, antithrombin III deficiency, antiphospholipid syndrome, paraneoplastic syndromes, polycythemia vera, sickle cell anemia, or severe anemia [2]. Untreated or inadequately treated local infections in the head and neck region, such as sinusitis, mastoiditis, sinusitis, focal skin infections, or meningitis with spread to the venous sinuses, can also trigger VST [2]. Medications such as steroids or chemotherapeutic agents can also lead to VST. Due to chronic systemic inflammation and the resulting endothelial damage, which promotes blood clot formation, VST can also be caused by LES, Behçet's disease, chronic inflammatory bowel diseases (ulcerative colitis, Crohn's disease), or nephrotic syndrome. Severe dehydration, trauma, surgery, obesity, thyroid dysfunction, or a significant drop in intracranial pressure should also be considered as causes of VST. It was not reported whether the patient had a hormone-releasing intrauterine device (IUD) or was a smoker. Furthermore, it needs to be determined whether the patient was SARS-CoV-2 positive or had recently been vaccinated against SARS-CoV-2, as both have been associated with VST [3, 4].

Second, vasculitis as a manifestation of LES was not sufficiently ruled out [1]. Cerebral vasculitis is usually diagnosed based on elevated inflammatory markers in serum (CRP, ESR), cerebrospinal fluid analysis, cerebral imaging, cerebral angiography including black-blood sequences, computed tomography angiography or digital subtraction angiography, and brain biopsy, which is considered the gold standard for diagnosing cerebral vasculitis [5].

Third, it was not specified whether the seizure was caused by VST or LES [1]. This is crucial because it can influence whether the patient meets the EULAR criteria for LES. It was also not reported whether the patient was taking antiepileptic drugs or whether the seizure was the only one before admission. In conclusion, VST should not be interpreted as LES until all other causes of VST have been thoroughly ruled out.

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