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Magnesium sulfate in intracranial hypertension associated with systemic lupus erythematosus: a case report mimicking hemorrhagic stroke

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Introduction

Systemic lupus erythematosus (SLE) is a multisystem autoimmune disease that frequently affects the central nervous system. Among its rare neuro-ophthalmological manifestations is intracranial hypertension (IH), with an estimated incidence of 0.7%, which may present with refractory headache, papilledema, and sixth cranial nerve palsy, mimicking hemorrhagic stroke (HS). We report the case of a young woman with SLE and Ehlers-Danlos syndrome (EDS) who developed IH mimicking HS, discussing the diagnostic reasoning and management of her complex neuroinflammatory manifestations.

Case presentation

A 21-year-old female patient with SLE (anti-Sm positive) and hypermobile Ehlers-Danlos syndrome (EDS), undergoing irregular corticosteroid therapy, was admitted with a sudden thunderclap headache (VAS= 10), associated with nausea, photophobia, and blurred vision, which had begun one hour earlier and was refractory to initial analgesic treatment. Physical examination revealed right convergent strabismus (sixth cranial nerve palsy) and reduced visual acuity. A non-contrast cranial computed tomography scan was initially performed and excluded intracranial hemorrhage. Due to the persistence of symptoms, intravenous magnesium sulfate (2 g) was administered, resulting in headache improvement to VAS=3 on the same day, along with improvement in photophobia and blurred vision. Following clinical improvement, corticosteroid therapy was reintroduced (methylprednisolone 40 mg every 12 hours), and further investigation was undertaken. Brain magnetic resonance imaging and arterial and venous magnetic resonance angiography ruled out aneurysm and cerebral venous thrombosis (CVT), in addition to a previously negative antiphospholipid syndrome (APS) workup. Papilledema and class I obesity supported the diagnosis of IH. Magnesium sulfate was maintained for three days; by the third day, the strabismus had resolved, accompanied by further improvement in visual symptoms and headache.

Discussion

The patient presented with headache, papilledema, and sixth cranial nerve palsy, consistent with intracranial hypertension. Cerebral venous thrombosis was excluded through arterial and venous imaging and a negative antiphospholipid syndrome workup. The rapid clinical improvement after magnesium sulfate administration was notable. As lumbar puncture with opening pressure measurement was not performed, the diagnosis remains probable intracranial hypertension based on the clinical findings and exclusion of alternative causes.

Conclusion

Refractory thunderclap headache in patients with SLE requires exclusion of intracranial hemorrhage and cerebral venous thrombosis, as well as investigation for intracranial hypertension, a treatable cause of morbidity. Magnesium sulfate was associated with significant clinical improvement, although an isolated causal relationship cannot be established, suggesting potential therapeutic relevance in complex neuroinflammatory presentations.

Keywords:
Neuropsychiatric lupus
Intracranial hypertension
Pseudotumor cerebri

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