

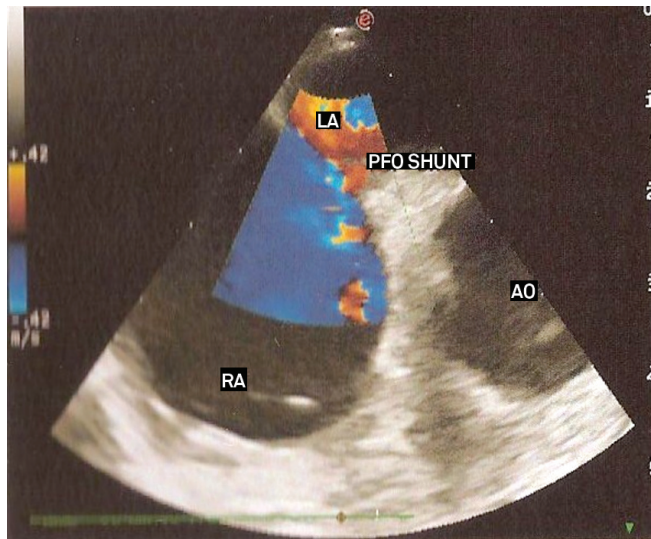
DISCUSSION

Several diseases that can lead to an acute spinal cord lesion were investigated. Demyelinating diseases were excluded by normal cranial MRI and normal CSF examination. Infection myelitis was excluded by the normal CSF examination and negative serologies. Spinal cord compression and tumors were excluded by the spinal MRI. Also, the spinal MRI was consistent with infarct diagnosis.

Several etiologies of spinal cord infarct were investigated. Aortic and vertebral dissections were excluded by computed tomography angiography. Vasculitis was excluded by normal CSF and negative autoantibodies. There was no risk factor for atherosclerosis. Cervical spine disease was excluded by cervical MRI. There were not triggering movements. The only risk factor found was the PFO.

There are two reported cases of spinal cord infarct associated with PFO, one in ASA territory and other in PSA territory, both in the thoracic region. To our knowledge, this is the first case of cervical spinal cord infarct in the ASA territory associated with PFO already described.

The best approach to prevent recurrences in patients with PFO is not yet established, but there are reports of treatment with acetylsalicylic acid, warfarin, and closure of PFO⁵.



RA: right atrium; LA: left atrium; Ao: Aorta; PFO Shunt: patent foramen ovale shunt.

Fig 2. Transesophageal ecocardiography showing patent foramen ovale with paradoxical interatrial shunt.

This last option was considered due to insufficient evidence. Acetylsalicylic acid was chosen because of the lower risk of bleeding comparing to warfarin.

PFO should be investigated in cases of spinal cord infarct in which the most common etiologies are ruled out.

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Complex movement disorder in an elderly patient and the chimera effect

Distúrbio do movimento complexo em uma paciente idosa e o efeito quimera

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Movement disorders (MD) are traditionally divided into hypokinetic syndromes or parkinsonism, and hyperkinetic syndromes, including several involuntary movements, such as chorea,

ballism, tremor, tics and dystonia. Complex movement disorder (CMD) is the term used to describe patients presenting with more than one type of movement disorder concomitantly¹.

Here we describe an elderly female patient with parkinsonism, symptomatic epilepsy and dementia due to multiple brain infarctions, associated to hemichorea-hemiballismus.

CASE REPORT

An 81-year-old female presented to the Neurology Service with sudden onset of involuntary random movements affecting her right hemibody characterized as hemichorea-hemiballismus. She had a past medical history of multiple ischemic strokes progressing to vascular dementia and parkinsonism, with irregular use of levodopa/benserazide 200/50 mg: ½ tablet tid. Additionally, she had a diagnosis of epilepsy with complex partial and secondary generalized seizures, using phenobarbital (100 mg/day) irregularly. On clinical examination, she had a severe cognitive impairment (Mini-Mental Status Examination 15/30) and right hemichorea-hemiballismus. During the bedside examination, she suffered an episode of complex partial seizures and, after that, the hemichorea-hemiballismus completely disappeared. After the complex partial seizure ended, hemichorea-hemiballismus re-emerged. She was managed with intravenous phenytoin (20 mg/kg) followed by maintenance treatment with oral valproic acid. She progressed with improvement of both her seizures and hemichorea-hemiballismus. A new reassessment was performed after 48 hours, and left upper limb rigidity, rest tremor and bradykinesia were documented, confirming the clinical diagnosis of parkinsonism probable due to vascular cause. A cranial computed tomography scan demonstrated multiple areas of brain infarctions, cortical atrophy and diffuse supratentorial hydrocephalus ex vacuo.

DISCUSSION

This case report illustrates the peculiar phenomenology of the association of MD that are traditionally viewed as mutually exclusive phenomena – a hypokinetic (parkinsonism) and a hyperkinetic (hemichorea-hemiballismus) disorder, associated with epileptic seizures, probably reflecting the involvement of multiple motor modulation pathways, in cortical and subcortical areas. The unpredictability of the clinical manifestations of the basal ganglia lesions, sometimes bordering on the inexplicable, was pointed out earlier as the Marsden's paradoxes: (1) different pathological lesions affecting similar sites might produce different clinical manifestations; (2) similar lesions impairing various basal ganglia might manifest with the same signs and symptoms; (3) the same lesions affecting the same areas produce a determined symptom or can be asymptomatic; and (4) certain disease affecting the basal ganglia have a wide range of MD². In elderly patients, more susceptible to the occurrence of epilepsy, stroke is the most commonly associated risk factor, occurring in up to half of all cases with an identifiable etiology³. Hypokinetic and hyperkinetic MD can occur after an ischemic or hemorrhagic stroke in 1.0–3.7% of cases, notably hemichorea, hemiballismus and dystonia⁴. The neurological dysfunction of multiple domains in the same patient is a phenomenon that will probably accompany population aging and the increasing frequency of vascular events, polypharmacy and neurodegenerative diseases, among other factors³⁻⁵. The unusual case presented here represents a combination of diseases, each one with different underlying characteristics, and we named it as the chimera effect, as an allusion to Greek mythology.

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Bath-related headache: a Brazilian case report

Cefaleia relacionada ao banho: um relato de caso brasileiro

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