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Cardioembolic Stroke Presenting As Opalski Syndrome: A Case Report.

Lívio Leite Barros MD[1], Micaelly De Castro Alencar[2],
Division of Neurology, Department of Clinical Medicine, Federal University of Ceara, Brazil. Prof. Costa Mendes St., 1608, 4th Floor, Fortaleza, Ceara, 60430-140, 3366 8052.
University center INTA – UNINTA, Fortaleza, Ceara.

ABSTRACT
Lateral bulbar syndrome occurs in patients with vertebrobasilar vascular lesions and can be associated with ipsilateral hemiparesis on rare occasions, in which it is known as Opalski syndrome. Stroke is a medical emergency characterized by a sudden decrease in neurological function due to a lack of blood supply to brain tissue. Opalski syndrome is considered a specific type of Wallenberg syndrome, being a relatively rare type of stroke. Signs and symptoms ipsilateral to the lesion occur due to damage to the corticospinal tract after the crossing of most of its fibers in the decussation of the pyramids. Neuroimaging with computed tomography or magnetic resonance is essential for a conclusive diagnosis. We present a case of a patient with Opalski syndrome of cardioembolic etiology with satisfactory response to thrombolytic treatment.

Keywords: *Opalski syndrome; Wallenberg syndrome; cerebral infarction*

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I. INTRODUCTION

Opalski syndrome was first described by Adam Opalski, a Polish physician, in 1946 and is a rare type of vascular lesion similar to Babinski-Nageotte syndrome. However, the lesion in Opalski syndrome extends beyond the decussation of the pyramids, affecting the corticospinal tract after it crosses at the level of the upper cervical cord (1,3). It is characterized by paralysis on one side of the patient's body, ipsilateral to the injury (2). In addition, symptoms related to dysfunction of the lateral bulbar nervous system, being considered an expansion of the Wallenberg syndrome. They occur due to the extension of the lateral lesion caudally to the corticospinal tracts after their decussation, resulting in lateral medullary syndrome with ipsilateral hemiparesis/hemiplegia (3). In literature, this condition has been attributed to occlusion of the vertebral artery or its branches, mainly due to arteriosclerotic disease (1,4). This set of symptoms is extremely rare, but most case reports describe ischemic stroke as the cause. The radiological characteristics are brainstem lesions with imaging characteristics that depend on the underlying cause and may occur with different symptoms (5).

II. CASE REPORT

A 47-year-old woman was admitted in tertiary center due to a suspected stroke in time for thrombolytic therapy. She presented speech alterations, dysphagia and hypoesthesia in the right hemiface and in the left arm and leg. She also presented headache and right hemiparesis. Diagnosis of posterior circulation stroke was defined and intravenous thrombolysis was performed. She had a history of high blood pressure, dyslipidemia, and atrial fibrillation (AF), previously using AAS 100 mg, atorvastatin 40 mg, metoprolol 50 mg, captopril 75 mg, amiodarone 200 mg and amlodipine 10 mg. She had a history of a transient ischemic attack (TIA) one week before the stroke, and cardiorespiratory arrest one year and three months before the event. The neurological examination revealed mild dysarthria, incomplete hemiparesis on the right, with the presence of pronator drift and normal reflexes. Coordination evaluation reveled dysmetria on the right. Regarding sensitive loss, there was a crossed deficit with hypoesthesia for pain and temperature on the right hemiface and on the left side of the body. She pontuated 6 in NIHSS (National Institutes of Health Stroke Scale) before the thrombolysis. The patient had a head tomography with a ASPECTS (Alberta stroke program early CT score) of 7. After intravenous thrombolysis (Alteplase 0.9 mg/kg), she presented clinical improvement, but maintained dysarthria and mild motor deficit in the right side. NIHSS of 3 was observed after thrombolysis. Echocardiogram showed hypertrophic cardiomyopathy with left ventricular diastolic dysfunction, severe asymmetric septal hypertrophy, mild mitral insufficiency, and increased left atrium volume. The electrocardiogram was compatible with atrial fibrillation. Post thrombolysis CT showed hypodensity in the right cerebellum and lateral medulla (Fig 1.) MRI was not performed because it had an implantable cardioverter defibrillator (ICD). Figure 2 shows the area of

ischemia one week after the event.

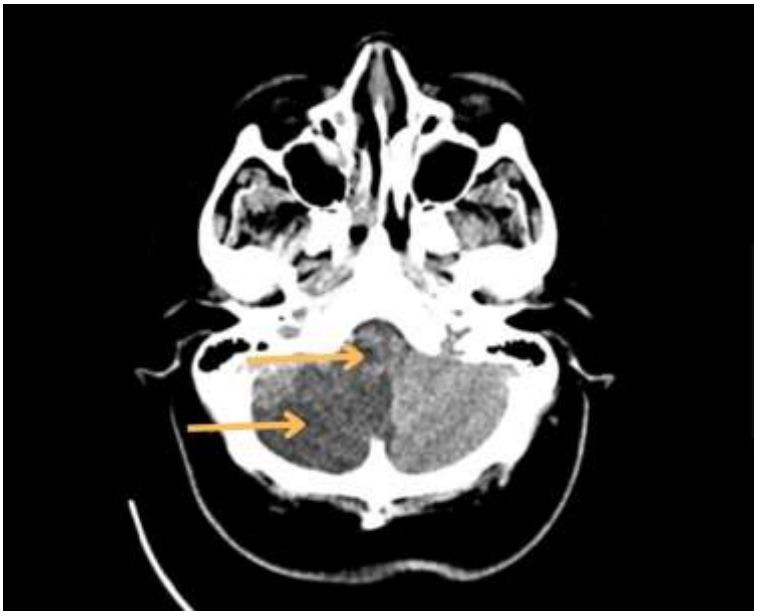
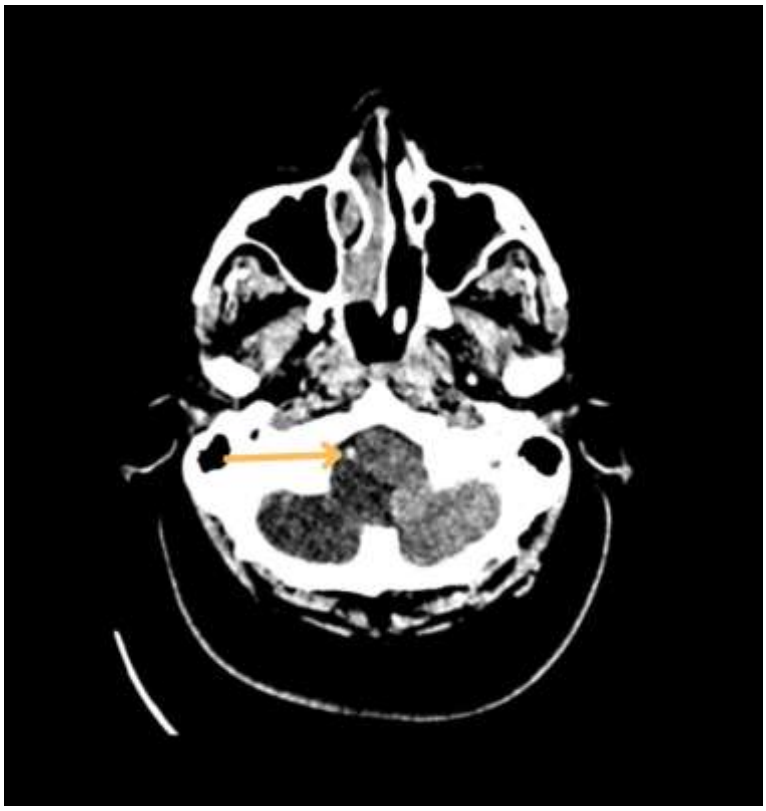


Fig 1. Hypodensity in the posterior territory of the right cerebellum with extension to the lateral medulla.
Fig 2. Hypodensity in the subacute phase associated with hyperdensity in the right vertebral artery,



denoting the presence of a probable thrombus.

III. DISCUSSION

Opalski Syndrome is a rare neurological condition that presents symptoms resulting from a lesion in the brainstem extending below the decussation of the pyramids (4). We presented a case of a patient with this clinical presentation and used of intravenous recombinant tissue plasminogen activator (rt-PA) as a treatment option. She had a peculiar set of symptoms, including mild dysarthria, dysphagia, right hemiparesis with pronator drift, associated with ataxia and crossed sensory changes. Neuroimaging revealed a lesion in the

brainstem and diagnosis of Opalski syndrome was defined after exclusion of other more common causes. The use of intravenous rt-PA in this case represents an interesting intervention, as this therapy is generally used in the treatment of acute ischemic stroke. The administration of rt-PA aimed to resolve possible thrombi and enhance blood flow in the affected area of the brainstem, improving neurological symptoms(3). This report highlights the limited knowledge about the syndrome, with only a few cases reported in the medical literature. Previous studies have offered valuable information to understand the clinical aspects and therapeutic approaches for this rare presentation. However, most publications are isolated case reports, which highlights the need for more studies and research in the area. It is important to note that rt-PA, although used, can present significant risks and, therefore, its administration must be done with care and based on well-defined clinical criteria. The use of thrombolytic treatments for Opalski Syndrome does not yet have a solid basis in the medical literature, making it necessary to carry out more controlled and randomized studies to evaluate the effectiveness and safety of these interventions (1). In summary, this article aims to contribute to the understanding of the disease showing the clinical experience of a patient diagnosed with this rare presentation. The reported case is an example of Opalski syndrome in a woman with cardiovascular comorbidities and risk factors such as hypertension and obesity. Intravenous thrombolysis was performed successfully, resulting in clinical improvement with maintenance of only subtle deficits.

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