

SILENT STROKE, LOUD SYMPTOMS : ISOLATED APHASIA IN HYPERTENSIVE EMERGENCY-INDUCED TRANSIENT ISCHEMIC ATTACK

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Abstract

Aphasia is a neurological dysfunction that arises due to disturbances in the brain regions responsible for language processing. These areas are predominantly localized within the frontal cortex and the temporoparietal regions, which regulate both motor and sensory speech functions. Disruptions in these areas may result from ischemic conditions affecting the brain. Isolated cases of aphasia without other accompanying neurological deficits are rarely reported. This article presents a case study of a 66-year-old female patient with a history of chronic hypertension who presented to the emergency unit with a sudden onset of speech difficulties without any other neurological impairments. Initial examination revealed significantly elevated blood pressure at 220/110 mmHg, accompanied by severe headache. A diagnosis of Transient Ischemic Attack (TIA) was supported by clinical findings that resolved within 24 hours and imaging from a non-contrast head CT scan, which showed normal brain parenchyma. The primary focus of initial management was the restoration of cerebral blood flow through the administration of neuroprotective agents and antiplatelet therapy, aiming to optimize cerebral perfusion and achieve clinical recovery of aphasia. This case analysis highlights the importance of prompt and appropriate management in hypertensive emergencies, emphasizing the detection of clinical signs of TIA or complete stroke, even in localized neurological deficits without additional accompanying symptoms.

Keywords: *Aphasia, Transient Ischemic Attack (TIA), Neurological Impairments, Neuroprotection, Hypertensive Emergencies*

INTRODUCTION

Isolated aphasia in stroke is a neurological deficit characterized by difficulties in language due to impairment or damage to specific brain areas, without affecting motor, sensory, cognitive, or other brain functions. (Fennis et al. 2013) This condition is rare and poses a unique challenge in diagnosing stroke, as its symptoms are often overshadowed by more apparent motor and sensory disturbances in stroke patients. Isolated aphasia that resolves within 24 hours due to a transient ischemic attack is often associated with an increased risk of cardioembolic stroke in the future. Therefore, understanding the various mechanisms and symptoms of stroke is crucial for providing optimal therapy to prevent death and post-stroke disability. (Lavallée et al. 2017)

Hypertensive emergency is a condition of significantly elevated blood pressure characterized by systolic and diastolic pressures >180/120 mmHg, accompanied by damage or dysfunction in target organs such as the brain, heart, or kidneys. (Adam Victor. 2014.) This condition is a medical emergency requiring immediate management. Delayed treatment can result in severe cerebral perfusion disturbances, potentially causing permanent structural brain damage. (Cantone et al. 2021)

Hypertensive emergency is a comorbid condition that can worsen stroke outcomes by expanding ischemic areas in the brain, leading to severe neurological deficits. Transient cerebral perfusion disturbances typically improve within less than 24 hours, often caused by temporary blockages in cerebral blood vessels (Wajngarten and Sampaio Silva. 2019). Aphasia in cases of transient ischemic attack are rare. Previous studies have suggested that such conditions may be

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linked to cardiac embolic risk factors and can present as clinical symptoms resembling a stroke, commonly referred to as stroke mimic. (Fennis et al. 2013)

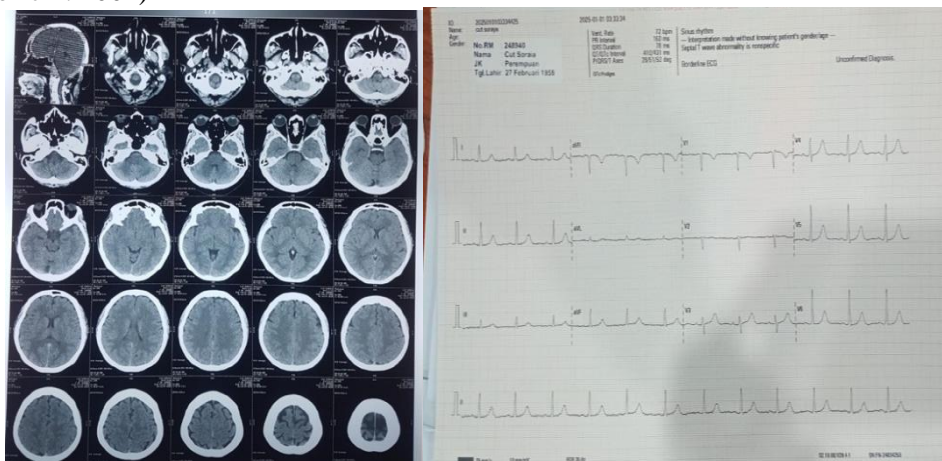
CASE REPORT

This article discusses the case of a 66-year-old female patient presenting with difficulty speaking approximately six hours before hospital admission, accompanied by severe headache and blood pressure of 220/110 mmHg. The patient had a history of chronic hypertension and had been taking medication regularly. The neurological deficits observed included impaired language function; the patient could understand speech but was unable to respond spontaneously. This condition persisted for approximately 12 hours before the patient experienced spontaneous clinical improvement.

The patient was managed with therapy to regulate blood pressure through the administration of antihypertensive medications, neuroprotective drugs, and periodic control of blood pressure and pain intensity. Imaging studies were conducted, including a non-contrast head CT scan, followed by screening for stroke risk factors through lipid profile analysis, blood glucose levels, and electrolyte testing.

From the neurological status examination, the patient exhibits a language function disorder known as motor aphasia, accompanied by severe clinical headaches without other neurological deficits such as altered consciousness, cranial nerve paresis, limb muscle weakness, or sensory function impairment. Analysis of the electrocardiogram (ECG) revealed chronic hypertension, while routine blood tests, kidney function tests, and lipid profiles were within normal limits.

Similarly, a head CT scan showed results within normal limits. The normal findings on head imaging, along with the resolution of clinical symptoms within 12 hours (<24 hours), indicate that the patient experienced a transient ischemic attack (TIA) caused by a blockage in cerebral blood perfusion accompanied by a massive increase in systolic blood pressure. (Albers GW, Caplan LR, and Easton JD. 2002)



RESULTS AND DISCUSSION

Transient Ischemic Attack (TIA) and aphasia are interrelated neurological conditions that have garnered significant attention in clinical and research settings. TIA, often referred to as a "mini-stroke," is a temporary episode of neurological dysfunction caused by ischemia without acute infarction. Aphasia, on the other hand, is an acquired language disorder typically resulting from damage to the brain's language-dominant hemisphere, commonly due to stroke. (Khare 2016)

According to studies, one-third of TIA patients are at risk of experiencing another TIA in the future, while another third will develop a persistent stroke. To predict the likelihood of future strokes, a scoring system known as the ABCD2 score can be utilized (Amarenco et al. 2016). Patients with TIA are assigned points (indicated in parentheses) for the following factors:

- Age \geq 60 years (1 point)

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- Blood Pressure \geq 140/90 mm Hg at the first evaluation (1 point)
- Clinical symptoms of focal weakness during the episode (2 points) or speech impairment without weakness (1 point)
- Duration of the episode \geq 60 minutes (2 points) or 10-59 minutes (1 point)
- Diabetes (1 point)

Isolated aphasia is a condition in which language impairment occurs in stroke patients without other accompanying neurological deficits. These cases frequently make stroke diagnosis challenging, requiring careful and methodical assessments (Kleindorfer et al. 2005). This process begins with a detailed medical history and imaging studies, such as a CT scan or MRI of the brain, to identify ischemic areas or functional disturbances of the brain.

From previous studies, it has been noted that aphasia in patients with TIA can serve as a predictor of future stroke risk, particularly those associated with cardioembolic events. Therefore, it is crucial to perform cardiovascular risk screening, such as echocardiography and cardiac rhythm monitoring (Hayashi et al. 2014).

Emergency and precise management in stroke cases with hypertensive emergencies is critical to preventing mortality and long-term disability. Isolated aphasia, as observed in this case, is a rare condition and, in several prior studies and cases, has been found to correlate with stroke risk factors, particularly cardioembolic causes in the future. Thus, this case requires further evaluation and more in-depth screening to ensure comprehensive management in controlling stroke risk factors (Lewandowski, Rao, and Silver 2008).

CLOSING

Conclusion

The article discusses the rare occurrence of isolated aphasia as a neurological deficit in stroke patients, particularly transient ischemic attacks (TIA), highlighting its association with cardioembolic stroke risk factors. It emphasizes the importance of understanding stroke mechanisms, providing timely management of hypertensive emergencies, and conducting comprehensive evaluations to prevent mortality and long-term disability.

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