MEDALION JOURNAL: Medical Research, Nursing, Health and Midwife Participation | ISSN(e): 2986-7754
Volumes 6 No. 1 (2025)

MONOCULAR TEMPORAL HEMIANOPIA: IN REPEATED ISCHEMIC STROKE ATTACKS

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Received : 11 January 2025
Revised : 31 January 2025
Accepted : 17 February 2025
Published : 30 March 2025
DOI : https://doi.org/10.59733/medalion.v6i1.184
Link Publish : https://medalionjournal.com/index.php/go

Abstract

Hemianopsia is a visual impairment characterized by the loss of half of the visual field in one or both eyes. This condition can be temporary or permanent. Monocular temporal hemianopia is one of them, namely visual field abnormalities in one eye in the temporal part, this abnormality is located in the occipital and temporal cortex. Disorders in this area can be caused by ischemic conditions. This case is rarely reported. This article presents a case study of a 56-year-old male patient with a history of chronic hypertension who came to the emergency unit with sudden loss of visual field on the right side of the eye, the patient had a history of ischemic stroke 1 year ago and did not leave any residual symptoms. Initial examination showed blood pressure of 190/110 mmHg accompanied by severe headache. CT scan showed recurrent ischemia in the left occipital and temporal lobes. The main focus of initial treatment is to restore cerebral blood flow through the administration of neuroprotective agents and antiplatelet therapy, which aims to optimize cerebral perfusion.

Keywords: ***Monocular Temporal Hemianopia, ischemic stroke, neurological disorders, hypertension***

INTRODUCTION

Ischemic stroke is a neurological disorder that occurs due to blockage or narrowing of a blood vessel that causes reduced blood flow to a specific area of the brain, spinal cord, or retina. This condition results in a focal infarction that can be confirmed by histopathology, medical imaging, or other objective evidence of tissue damage due to ischemia. Clinically, ischemic stroke is characterized by a focal neurological deficit that lasts at least 24 hours or until death, after other possible causes have been ruled out. (Sacco RL et al. 2013). This condition can cause various neurological deficits, one of which is visual impairment such as hemianopsia. Monocular temporal hemianopsia is a type of visual impairment characterized by the loss of half of the visual field on the temporal side of one eye, often due to damage to the visual pathways in the brain, such as a stroke affecting the occipital region or temporal lobe. (Noviantari, IGAR et al. 2023).

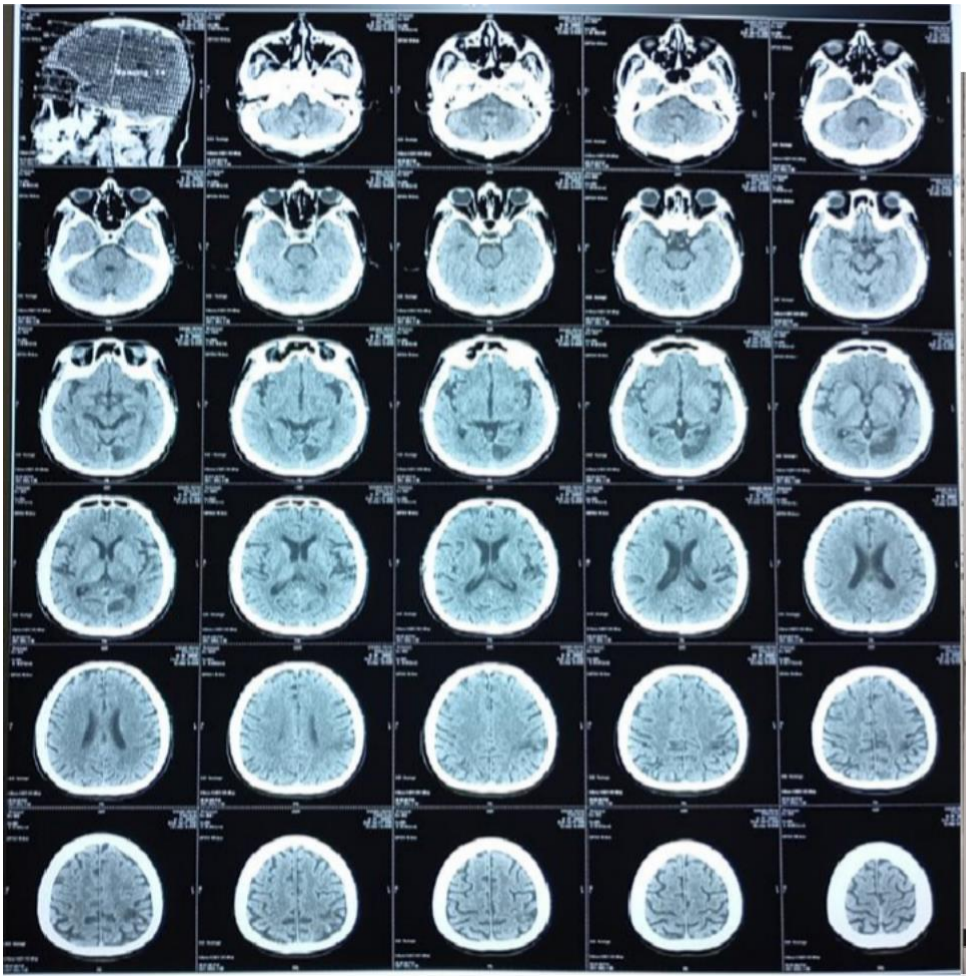
The terms hypertensive crisis (significant elevation in blood pressure, e.g. SBP/DBP >180/110–120 mmHg, with or without new or worsening target organ damage) and hypertensive urgency (very high blood pressure without evidence of new or worsening target organ damage). (Whelton PK et al. 2017) It is important to understand the relationship between ischemic stroke and monocular temporal hemianopsia, this visual disturbance can impact the patient's quality of life, affect mobility, and increase the risk of accidents due to limited visual perception. Therefore, early detection and understanding of the underlying pathophysiological mechanisms of this condition are crucial aspects in the comprehensive management of ischemic stroke.

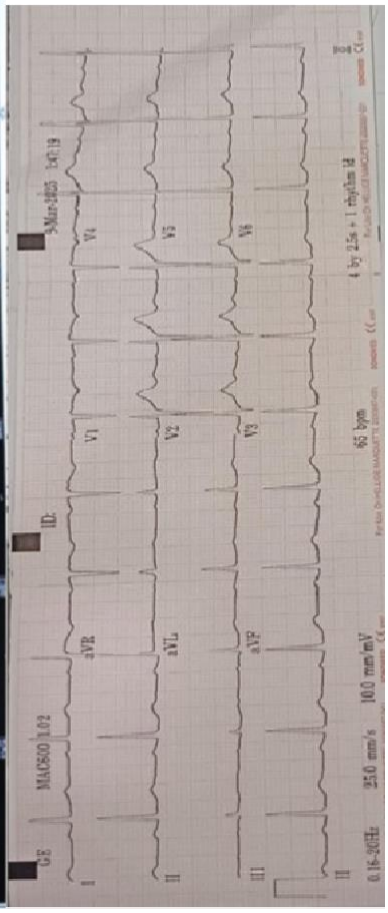
CASE REPORT

This article discusses the case of a 56-year-old male patient who presented with sudden loss of half of the right visual field about 1 day before admission, accompanied by severe headache and admission blood pressure of 190/110 mmHg. The patient had a history of chronic hypertension and was taking medication irregularly. The patient had a history of stroke 1 year previously and had no residual symptoms.

Patients were treated with therapy to regulate blood pressure by administering antihypertensive drugs, neuroprotective drugs, and regular blood pressure and pain control. Imaging examinations were performed, including non-contrast head CT scans, followed by screening for stroke risk factors with lipid profile analysis, blood glucose levels. From the neurological status examination, the patient showed a disturbance of the temporal visual field in the left eye known as monocular temporal hemianopsia, accompanied by severe clinical headache without changes in consciousness, other cranial nerve paresis, sensory disturbances, and language disturbances. Electrocardiogram (ECG) analysis showed cardiac enlargement, while screening for other stroke risk factors was above normal.

From the results of CT Scan of the head without contrast showed chronic cerebral infarction in the left corona radiata and acute infarction of the left temporal and occipital lope. These infarction findings indicate that the patient experienced recurrent ischemic attacks.





RESULTS AND DISCUSSION

Ischemic stroke and hemianopsia are related neurological conditions, where ischemic stroke is an episode that occurs due to blockage or narrowing of a blood vessel that causes reduced blood flow to the point of focal neurological deficits that last at least 24 hours. Monocular temporal hemianopsia is a type of visual impairment characterized by the loss of half of the visual field on the temporal side of one eye, often due to damage to the visual pathways in the brain, such as in a stroke.The incidence of hemianopsia varies depending on the underlying pathological condition. In adults, stroke is the main cause, accounting for 69.7% of cases, with an average age of 58 years.

(Ruddy J et al. 2024) but cases of monocular temporal hemianopsia are rarely reported, from rowe FJ in 2013 of 479 patients with visual field loss, there were only 6 cases with stroke etiology. This is due to the lack of detailed medical history and imaging studies such as brain MRI and campimeter or perimeter (Rowe FJ et al. 2013). Rapid and appropriate management of stroke with hypertensive emergency is essential to prevent death and long-term disability, but the management of high blood pressure in acute ischemic stroke remains unclear. Unlike in intracerebral hemorrhage, there are no medium or large trials in ischemic stroke that have yielded positive results. However, certain subgroups of patients may need to have their blood pressure lowered (eg, before or after thrombolysis), left alone, or raised. (Bath PM et al. 2022)

CLOSING

Conclusion

Clinicians should be aware that monocular temporal lunate visual field defects may result from contralateral anterior occipital cortex lesions. The etiology is usually ischemic infarction or hemorrhage in the acute setting, but neoplastic, infectious, infiltrative, and vascular malformation etiologies may also occur. Medication and stroke control are important to prevent recurrent strokes. MRI of the brain may be required to confirm the diagnosis and etiology. Treatment should be directed at the underlying cause.

REFERENCES

1. Sacco RL, Kasner SE, Broderick JP, Caplan LR, Connors JJ, Culebras A, et al. An updated definition of stroke for the 21st century: a statement for healthcare professionals from the American Heart Association/American Stroke Association. Strokes 2013; 44: 2064–2089.
2. Noviantari, IGAR, Triningrat, AAMP, Wijayati, MP, Manuaba, IBP 2023. Description of neuro- ophthalmological disorders due to intracranial lesions (Chiasma Optikum) in the eye clinic of Prof. Dr. IGNG Ngoerah Hospital in 2021-2022. Medical Science Digest 14(2): 552-558. DOI: 10.15562/ism.v14i2.1692
3. Whelton PK, Carey RM, Aronow WS, Casey DE, Collins KJ, Dennison Himmelfarb C, DePalma SM, Gidding S, Jamerson KA, Jones DW, et al. 2017. ACC/AHA/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/NMA/PCNA guideline for the prevention, detection, evaluation, and management of high blood pressure in adults: a report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines [published correction appears in Hypertension. 2018;71:e140–e144]. Hypertension. 2018;71:e13–e115. doi: 10.1161/HYP.0000000000000065
4. Ruddy J, Asuncion RMD, Cardenas AC. 2024. Hemianopsia. StatPearls [Internet]. https://www.ncbi.nlm.nih.gov/books/NBK562262/
5. Rowe FJ, David Wright, Darren Brand, Carole Jackson, Shirley Harrison, Tallat Maan, Claire Scott, Linda Vogwell, Sarah Peel, Nicola Akerman, Caroline Dodridge, Claire Howard, Tracey Shipman, Una Sperring, Sonia MacDiarmid, Cicely Freeman. 2013. A Prospective Profile of Visual Field Loss Following Stroke: Prevalence, Type, Rehabilitation, and Outcome. BioMed Research International Volume 2013, Article ID 719096, http://dx.doi.org/10.1155/2013/719096
6. Bath PM, Lili Song, Gisele S. Silva, Eva Mistry, Nils Petersen, Georgios Tsivgoulis, Mikael Mazighi, Oh Young Bang, and Else Charlotte Sandset. 2022. Blood Pressure Management for Ischemic Stroke in the First 24 Hours. StrokeVolume 53, Issue 4, April 2022; Pages 1074-1084. https://doi.org/10.1161/STROKEAHA.121.036143