

Transient Global Amnesia with Extra-Hippocampal Lesion and a Normal Cardiovascular Study

Luis Rafael Solís Tarazona¹, Edgar Lorente Martínez,
Carmen María Sanchis Llopis

Keywords: Transient global amnesia, MRI, Stroke, Diffusion

doi:10.1017/cjn.2021.116

Can J Neurol Sci. 2022; 49: 418–419

A 63-year-old migrainous woman was presented with sudden onset of isolated anterograde amnesic syndrome, which lasted for less than 24 h. She started to make repetitive questions to her husband and had no recollection of the event. The episode was witnessed by her husband, who did not report any neurological focal sign or seizure. It fulfilled the criteria for transient global amnesia (TGA).¹ There was no prior history of head injury or epilepsy. Concurrently with the TGA episode, the patient had a severe left-sided headache accompanied by mild nausea, similar to her prior migraine episodes, which lasted between 48 and 72 h. No aura or focal sign accompanied the episode, though.

A magnetic resonance of the brain (MRI) was performed for 72 h, which is later shown in Figures 1 and 2. Transthoracic echocardiogram was performed and did not show atrial enlargement or aortic arch atheroma. Carotid Doppler ultrasound was

normal, and a 48-hour Holter monitor did not show any evidence of covert paroxysmal atrial fibrillation. Due to the likelihood of the episode being an isolated TGA episode, the absence of cardiovascular risk factors, and normal cardiac investigations, the patient did not receive antiplatelet or anticoagulant therapy. Six months after the episode, the patient remained asymptomatic.

TGA diagnosis is made upon clinical history. Nevertheless, MRI is a useful diagnostic tool when small restricted diffusion hippocampal lesions are found.² Extra-hippocampal locations such as posterior arterial territory and basal ganglia have been described in clinically typical cases.³ In these cases, a cardiovascular assessment is recommended in order to exclude acute stroke and embolism. Migraine and TGA are thought to be related, as it has been observed in the previous studies⁴ that there is a higher prevalence of TGA episodes among migrainous patients.

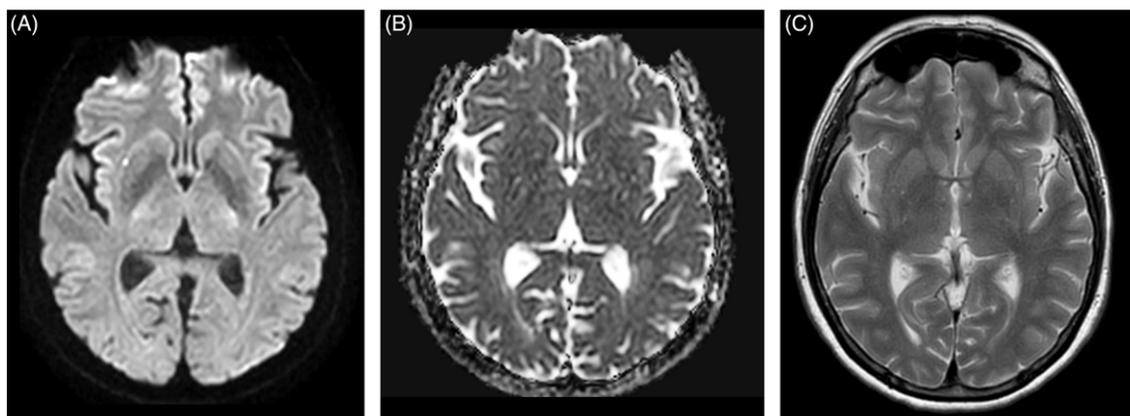


Figure 1: Magnetic resonance imaging (MRI). (A) Diffusion-weighted imaging (DWI) shows a punctiform-restricted diffusion lesion in the right lenticular nucleus, in the outermost portion of the putamen. (B) Apparent diffusion coefficient (ADC) image shows a hypointense lesion at the described location, confirming that the diffusion restriction is real and not due to T2 “shine-through” phenomenon. (C) T2-weighted imaging shows no abnormalities.

From the Department of Neurology, University Hospital Doctor Peset, Valencia, Spain (LRST, CMSL); and Department of Radiology, University Hospital Doctor Peset, Valencia, Spain (ELM)

RECEIVED DECEMBER 15, 2020. FINAL REVISIONS SUBMITTED MAY 10, 2021. DATE OF ACCEPTANCE MAY 12, 2021.

Correspondence to: Luis Rafael Solís Tarazona, Department of Neurology, University Hospital Doctor Peset, Avenida Gaspar Aguilar 90, Valencia 46017, Spain. Email: solis_lui@gva.es

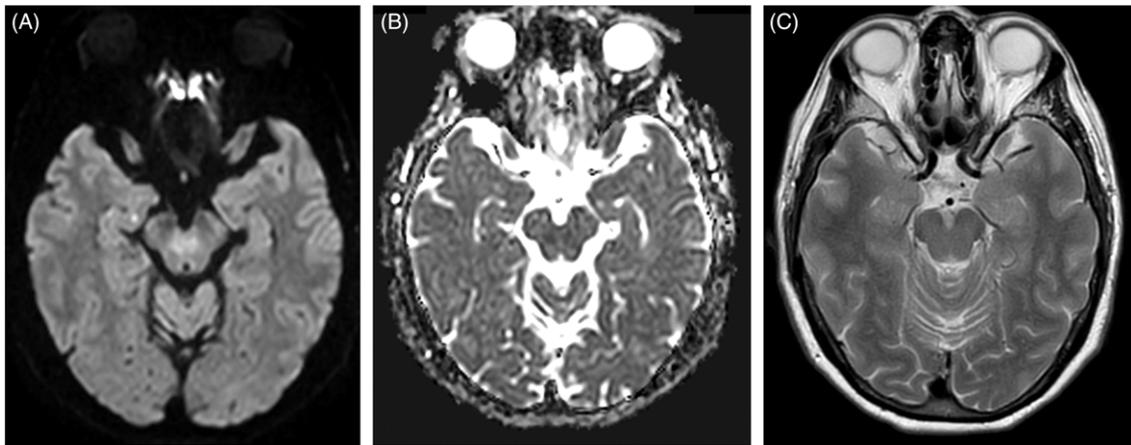


Figure 2: (A) DWI-EPI imaging shows a punctiform-restricted diffusion lesion in the medial portion of right hippocampus. (B) ADC map confirms that diffusion restriction is real in the described location. (C) T2-weighted imaging findings are unremarkable.

ACKNOWLEDGMENTS

The authors thank E. Barrué de la Barrera who encouraged them to publish the case.

CONFLICT OF INTEREST

The authors have no conflicts of interest to declare.

STATEMENT OF AUTHORSHIP

ELM did the neuroimage project description, critique, processing of radiological images and their description.

LRST and CMSL did the neuroimage project description, research, case writing, and critique.

The authors fulfill the ICMJE criteria for authorship.

ETHICAL STANDARDS STATEMENT

Consent from the patient was obtained for the publication of the case and the use of images.

REFERENCES

1. Arena JE, Rabinstein AA. Transient global amnesia. *Mayo Clin Proc.* 2015; 90:264–72. doi: [10.1016/j.mayocp.2014.12.001](https://doi.org/10.1016/j.mayocp.2014.12.001). PMID: 25659242.
2. Szabo K, Hoyer C, Caplan LR et al. Diffusion-weighted MRI in transient global amnesia and its diagnostic implications. *Neurology.* 2020;95:e206–12.
3. Kim HJ, Kim H, Lim SM, Moon WJ, Han SH. An acute tiny left putamenal lesion presenting with transient global amnesia. *Neurologist.* 2012;18:80–82.
4. Yi M, Sherzai AZ, Ani C, et al. Strong association between migraine and transient global amnesia: a national inpatient sample analysis. *J Neuropsychiatry Clin Neurosci.* 2019;31:43–48.