International Journal of Advances in Medicine
Tiwari P et al. Int J Adv Med. 2023 Dec;10(12):849-851
http://www.ijmedicine.com
pISSN 2349-3925 | eISSN 2349-3933
DOI: https://dx.doi.org/10.18203/2349-3933.ijam20233570

Case Report

Ictal epileptic headache in young female

Priyal Tiwari, Pushpendra Nath Renjen*, Dinesh Mohan Chaudhari

Department of Neurology, Indraprastha Apollo Hospitals, New Delhi, India

Received: 25 July 2023
Accepted: 18 October 2023

***Correspondence:**
Dr. Pushpendra Nath Renjen,
E-mail: pnrenjen@hotmail.com

ABSTRACT

The establishment of a temporal association between a hybrid of headache and epilepsy is essential for correct diagnosis and management of headache. Epilepsy-associated headaches (such as migralepsy, hemicrania epileptica, post ictal headache and ictal epileptic headaches) may be similar to the patients' usual headache or may be a new type of headache. The location of headaches is unrelated to the EEG localization of epileptic aura or ictal discharges. The only established association of location of headaches and epilepsy is seen in cases of migraine with a visual aura which seems to precede few instances of occipital epilepsy. EEG helps to distinguish epileptic headache from non-epileptic headache during ictus (convulsive or non-convulsive). Hemicrania epileptica is a rare type of EEG-demonstrated ictal epileptic headache characterized by migrainous features (such as unilateral, throbbing pain associated with nausea, vomiting, scintillating scotomas, and flashing lights) occurring during an ictal EEG. We should watch for migrainous visual auras (flashing lights and scintillating scotomas) and distinguish them from occipital lobe seizures (aura including visual hallucinations) with the help of clinical features and simultaneous demonstration of ictus on EEG. We report a case of a 28-year-old female presenting with a new headache as a sole feature of posterior lobe non-epileptic seizure. Early diagnosis of painful seizures leads to timely treatment of the episodic headaches using anti-epileptic therapy.

Keywords: Hemicrania epileptica, EEG, Epileptic headache

INTRODUCTION

Headache is an infrequent form of sensory seizure and makes diagnosis of seizures clinically inapparent as in our case. We should decipher the temporal association of headache with respect to ictus for the correct management of headache and seizure. The clinical history helps distinguish between each case and differentiate one episode of co-existing headache-epilepsy with another episode.[1] In ictal epileptic headaches the location of headaches is unrelated to the epicenter of epileptic aura or ictal discharges.

Epilepsy-associated headaches may be similar to the patient's usual headaches or maybe a new type of headache.[2] A few cases of migraine with a visual aura precede occipital epilepsy, a condition correctly referred to as migralepsy (also known as pre-ictal headache), and ictus is often photically elicitable during the migraine. Hemicrania epileptica is a rare type of headache (EEG-demonstrated ictal epileptic headache) characterized by migrainous features such as unilateral, throbbing pain associated with nausea, vomiting, scintillating scotomas, and flashing lights occurring on the same side as ictal discharges (Table 1).[1-3]

The clinical features common to both occipital epilepsy and migrainous aura are micropsia, macropsia, and metamorphopsia (Alice in Wonderland syndrome); visual auras unique to migraine are flashing lights and scintillating scotomas; unique visual auras of occipital lobe seizures include visual hallucinations which is supported by feature of ictus on EEG such as gradual ictal discharge build-up and post-ictal slowing of the electrical activity in the later.[4-5]

Table 1: Difference between migralepsy, hemicrania epileptica and ictal epileptic headache based on ICD 10.

Variables	Migralepsy	Hemicrania epileptica	Ictal epileptic headache
Definition	Seizure triggered by an attack of migraine with aura.	A subtype of ictal epileptic headache in which location of seizures is unilateral and ipsilateral to headache.	Headache occurs simultaneously with seizures and resolves with seizure resolution.
Pain	Unilateral, throbbing preceded by aura nature of which depends upon location of migraine.	Headache occurs simultaneously with focal aware seizures/headache improves immediately after seizure remission.	Location of headache is unrelated to location and semiology of seizures.
Seizure/ EEG	Only one type of seizure occurs after attack of migraine with aura.	Can be convulsive (partial/focal awareness if present) or non-convulsive (pure/isolated ictal epileptic headache with only EEG evidence of seizure)	May or may not have motor, sensory or autonomic manifestations.
Aura	Depends on localization of migraine and may/may not be visual aura.	May/may not be present. May be associated with headache or seizure.	May or may not be present. Maybe associated with seizure localization.
Trigger	Migraine with aura triggers seizure. Seizure occurs within one hour of onset of migraine with aura and sometimes simultaneously with it.	Seizure activity triggers headache and headache resolves with resolution of seizures.	Seizure activity triggers headache and headache resolves with resolution of seizures.

CASE REPORT

A patient of acquired epilepsy after left sided occipital lobe meningioma excision, in her late twenties presented to the neurology clinic complaining of new headache. Patient has been taking twice daily tablets of oxcarbazepine 300 mg since surgery and was seizure-free post-operatively. The MRI showed wedge-shaped area of encephalomalacia with minimal perilesional gliosis involving left temporoparietal region and volume loss in form of prominence of regional cortical sulci and prominent occipital horn of lateral ventricle of same side. Patient was admitted to neurology in-patient care for further evaluation and 24-hour video EEG. Awake EEG showed left posterior lobe amplitude loss corresponding with lesions described in MRI. During photic stimulation, patient reluctantly sat up and sobbed. However, no photic epileptic activity or photomyogenic response noted. Soon after this, interictal epileptiform sharp theta wave discharges were seen restricted to left posterior hemisphere which were followed by 2 instances of focal aware (and no motor symptoms) ictal epileptic headaches of 50 sec duration each, located at left posterior hemispheric electrodes (Figure 1). Simultaneously with ictus on EEG, patient pointed to and complained of pain in left forehead and temple. She described flashing lights as a visual sensation in left hemifield. There were no lapses in consciousness, automatism, tonic-clonic movements, vision loss/loss of consciousness. Routine laboratory tests were in normal range. She diagnosed with pure/isolated epileptic headache which is a rare type of ictal epileptic headache and is a focal awareness seizure. The differential diagnosis based on temporal evolution of symptoms is occipital seizures, and migralepsy but it could easily be excluded because of the temporal evolution of symptoms.[6-10] We increased the dose of oxcarbazepine, which led to the resolution of the patient's seizures and new headaches.

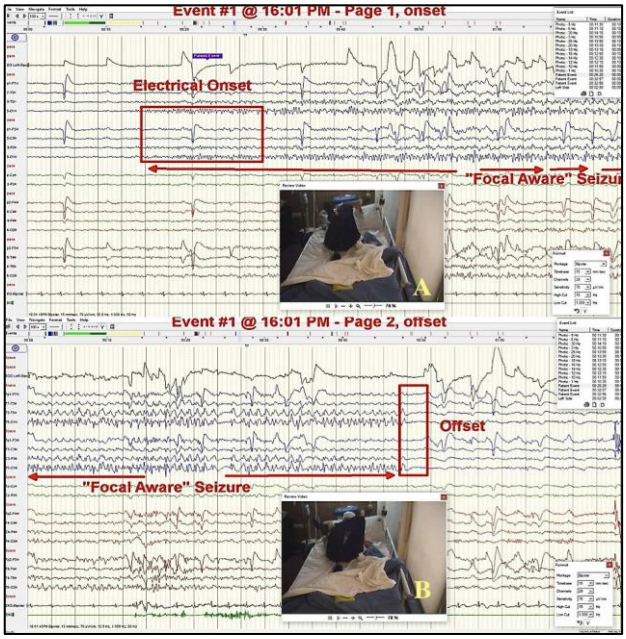

Figure 1 (A and B): Two instances of "ictal epileptic headache" for 50 sec, with onset from O1-T5, which constitute "focal aware" sensory seizure. EEG revealed 6-7 Hz theta buildup from O1-T5, increasing to 9-10 Hz, which lasted about 35-40 sec, followed by decrescendo 2-3 Hz spike-wave discharges, and in post event phase, 2-4 Hz delta slowing for 5-8 sec. These changes remained FOCAL and restricted to posterior left hemisphere. On video, subject pointed to, and complained of, pain in left forehead and temple and described flashing-lightning like sensation in right eye hemifield. No absence, automatisms, TC movements or LOC was noted. No post event loss of vision was described. Onset and offset of focal aware seizures.

DISCUSSION

In the context of our case report, it is important to recognize that "ictal epileptic headache" denotes a headache that serves as either the exclusive or initial symptom of an epileptic seizure. This condition is diagnosed through EEG recordings, where no other convulsive seizure manifestations are present. A noteworthy observation in the literature is the resemblance of ictal epileptic headaches to conditions like glossopharyngeal neuralgia and short-lasting unilateral neuralgiform headache attacks with conjunctival injection and tearing (SUNCT).[5-9]

Pain is a unique sensory feature of epilepsy and, in some cases, maybe the sole manifestation of the seizures. Headache is the most common form of pain in epilepsy. Headache in epilepsy can clinically mimic migraine. We should watch for temporal association of visual migraine auras (flashing lights and scintillating scotomas) with respect to headache. The flashing of lights complained by our patient are probably sensory manifestation of the occipital ictal spikes.[2-3] Considering the evaluation of clinical attributes associated with ictal headache, it becomes evident that "migralepsy" should be acknowledged as a condition where a seizure begins with a headache. This understanding sheds light on the potential underestimation of the phenomenon of "ictal epileptic headache." The intricacy of diagnosing ictal headaches cannot be overstated, emphasizing the need to raise awareness of this clinical entity among the broader headache community. This discussion underscores the importance of further research and education on this subject. Physicians should have a low threshold for acquiring EEG in young patients with new headache.

CONCLUSION

In conclusion, it is important to recognize that ictal epileptic headaches can often resemble primary headache disorders, creating diagnostic challenges for healthcare professionals. These headaches manifest in various clinical forms, including ictal epileptic headache (IEH) and postictal headache (PIH), as officially recognized by the international classification of headache disorders, 3rd edition. Achieving an accurate diagnosis of IEH requires a comprehensive assessment, encompassing clinical presentation and electroencephalography (EEG) examination. Moreover, it is advisable to consider (Video)-EEG recordings for patients experiencing prolonged migraines or headaches. The complex nature of ictal headaches underscores the necessity for heightened awareness and understanding of this condition within the community of headache experts.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

REFERENCES

1. Belcastro V, Striano P, Kasteleijn-Nolst Trenité DG, Villa MP, Parisi P. Migralepsy, hemicrania epileptica, post-ictal headache and “ictal epileptic headache”: a proposal for terminology and classification revision. J Headache Pain. 2011;12:289-94.
2. Caminero A, Manso-Calderón R. Links between headaches and epilepsy: current knowledge and terminology. Neurología (English Edition). 2014;29(8):453-63.
3. Cianchetti C, Pruna D, Ledda M. Epileptic seizures and headache/migraine: a review of types of association and terminology. Seizure. 2013;22(9):679-85.
4. Cianchetti C, Dainese F, Ledda MG, Avanzini G. Epileptic headache: A rare form of painful seizure. Seizure. 2017;52:169-75.
5. Gameleira FT, Ataíde Jr L, Raposo MC. Relations between epileptic seizures and headaches. Seizure. 2013;22(8):622-6.
6. Pasquale, Parisi., Vincenzo, Belcastro., Pasquale, Striano. The Confirming Evidence for Ictal Epileptic Headache. Headache. 2019;59(10):1832-33.
7. Pasquale P, Maria C, Paolino U, Raucci N, Della V, Vincenzo B et al. Ictal Epileptic Headache: When Terminology Is Not a Moot Question. Frontiers Neurol. 2019;10:785-95.
8. Arens T, Irene F. Ictal headache: Insights from two cases. Cephalalgia. 2018;38(13):1972-5.
9. Vincenzo B, Pasquale S, Pasquale S, Alberto V, Pasquale P. The growing landscape of ictal epileptic headache. Cephalalgia. 2018;38(13):1988-9.
10. Carlo C, Giuliano A, Dainese F, Vincenzo G. The complex interrelations between two paroxysmal disorders: headache and epilepsy. Neurological Sci. 2017;38(6):941-8.

Cite this article as: Tiwari P, Renjen PN, Chaudhari DM. Ictal epileptic headache in young female. Int J Adv Med 2023;10:849-51.