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Unprovoked crying spells in a child with ADHD: a case of dacrystic seizures

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Abstract

Background: Dacrystic seizures are uncommon epileptic events that manifest as brief episodes of uncontrollable crying. Because these episodes mimic emotional outbursts, they are often confused with behavioral or psychiatric problems, particularly in individuals with attention-deficit/hyperactivity disorder (ADHD).

Case presentation: We report the case of a 9-year-old boy with a medical history of ADHD who presented with recurrent, sudden crying spells without apparent triggers for nearly three years. The patient had no prior history of head trauma, central nervous system infection, or developmental regression. Neurological examination and brain magnetic resonance imaging (MRI) revealed no abnormalities, and routine laboratory tests were unremarkable. Following the exclusion of other possible etiologies, electroencephalography (EEG) conducted by a senior neurophysiologist in the pediatric neurology department confirmed the diagnosis of dacrystic epilepsy. The patient was started on a combination therapy of valproic acid (300 mg/day), lamotrigine (25 mg/day), and clonazepam (0.25 mg/day), which resulted in approximately 60% reduction in the frequency and intensity of the episodes within two months, without any significant adverse effects.

Conclusion: Unexplained crying attacks in children, especially those with developmental disorders, should raise the possibility of dacrystic seizures. Careful neurological assessment and prompt use of antiepileptic therapy can markedly reduce symptoms and improve quality of life.

Keywords: Dacrystic Epilepsy, Ictal Crying, Pediatric Neurology, ADHD, Case Report, Iraq

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Background

Dacrystic seizures are brief, stereotyped ictal episodes featuring forced weeping or sobbing—are among the rarest forms of focal epilepsy. While often overshadowed by more common seizure types, they pose a significant diagnostic challenge, particularly when misinterpreted as emotional or behavioral disturbances. Studies show that these events frequently arise from benign yet disruptive network discharges within limbic and hypothalamic circuits, rather than emotional states per se [1]. Their semiology overlaps with gelastic seizures and may signal underlying structural pathology; in a multicenter cohort, Demir AB and colleagues [2] identified spontaneous crying seizures in the context of both hypothalamic hamartomas and extra-hypothalamic lesions [2]. Differentiation from psychogenic nonepileptic crying spells is highlighted in a 2023 study, which identified semiologic pointers to favor an epileptic aetiology over PNES [3]. Even in MRI-negative patients, dacrystic events persist, underscoring functional circuit involvement [1]. Electrophysiological recordings frequently demonstrate ictal discharges even when structural neuroimaging is normal, underscoring the functional network basis of these events and the value of prolonged video-EEG monitoring [1]. A 2021 meta-analysis of pediatric dacrystic epilepsy underscores the low rate of freedom with medication alone in structural cases [4]. Recognizing dacrystic seizures early can lead to targeted epilepsy management rather than ongoing psychiatric misdiagnosis, improving outcomes in this under-recognized entity [5]. Clinical recognition is critical because appropriate anticonvulsant therapy or, in selected lesional cases, surgical or ablative treatment can substantially reduce seizure burden and improve quality of life [6].

Case presentation

A 9-year-old boy, previously diagnosed with ADHD by a pediatric neurologist, was referred for evaluation of recurrent brief episodes of unexplained crying described by his caregivers as “sudden emotional outbursts.” Each episode appeared

abruptly, lasted less than two minutes, and resolved spontaneously. The spells were not accompanied by convulsions, altered consciousness, or identifiable triggers. There was no history of head injury, central nervous system infection, or complications during the perinatal period. The child's developmental milestones were appropriate for age, aside from social and communication difficulties consistent with attention-deficit/hyperactivity disorder (ADHD). Physical and neurological examinations were unremarkable. Mental status evaluation indicated features of ADHD. Brain magnetic resonance imaging revealed no structural abnormalities, and standard hematological and biochemical investigations were within normal ranges. Review of a previous EEG was consistent with ADHD-related patterns (Figure 1).

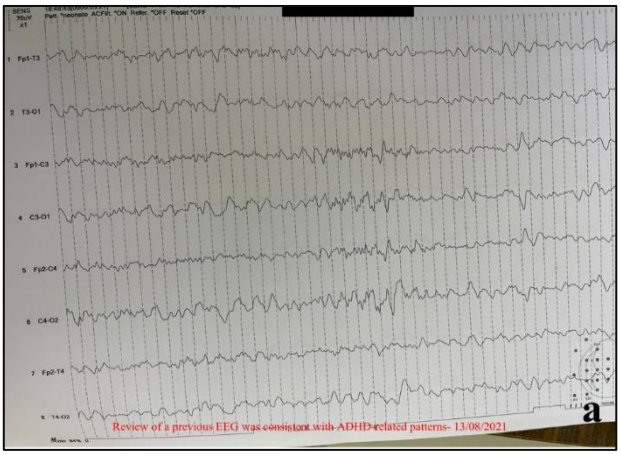

Figure 1: EEG record shows intermitted period of focal slowing mainly at frontal and central regions with clinical correlation highly suggestive of ADHD- No definite epileptiform discharge.

While a repeat EEG demonstrated new abnormal epileptiform discharges, which were confirmed by a senior pediatric neurophysiologist (Figure 2). Based on these findings and the clinical picture, a diagnosis of dacrystic epilepsy was established. The patient was started on valproic acid (300 mg/day), lamotrigine (25 mg/day), and clonazepam (0.25 mg/day). After two months of follow-up, there was an estimated 60% reduction in the frequency and severity of episodes, with no reported adverse effects (fig,1).

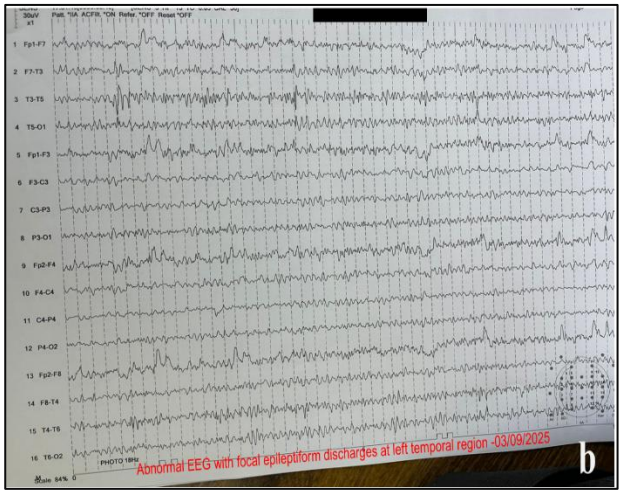

Figure 2: Abnormal EEG record shows focal epileptiform discharges at left temporal region.

Discussion

Dacrystic seizures are a rare subtype of focal epilepsy in which crying or sobbing becomes the predominant seizure manifestation. Unlike emotional distress or behavioral outbursts, these crying spells are the result of abnormal epileptic discharges within emotion-motor networks rather than voluntary or reactive emotional expression. Recent neurophysiological and imaging data highlight that the amygdala, hypothalamus, and their connections with cortical limbic circuits are frequent contributors to this unusual semiology. For example, a large cohort study of hypothalamic hamartomas revealed that patients with gelastic and dacrystic events exhibit extended epileptogenic networks beyond the hamartoma itself, involving cortical-subcortical circuits [7]. In cases where brain MRI appears unremarkable, functional network dysfunction rather than structural lesion may underlie the disorder—explaining why standard imaging sometimes fails to detect a causative focus. In a multicenter study of laughter/crying seizures, Demir et al. [2] found that while hypothalamic lesions were common when both laughing and crying co-occurred, isolated dacrystic seizures frequently originated from temporal or frontal cortical foci. The challenge of diagnosis is amplified in children with neurodevelopmental disorders, such as ADHD or autism spectrum disorder, where atypical emotional or behavioral manifestations are common and may mask ictal crying. It is therefore prudent to consider an underlying epileptic etiology in children with repetitive, stereotyped crying spells unassociated with clear triggers. Video-EEG remains the gold standard to confirm ictal activity, although a strong clinical suspicion may justify evaluation when facilities are limited. Treatment remains individualized and often follows the strategy for focal or atypical seizure types. Although valproate continues to be a frontline option, recent reviews emphasize the role of newer agents, and the importance of early recognition to avoid mis-labeling as psychiatric illness. In a meta-analysis of children with dacrystic epilepsy, Raybarman [5] reported that antiepileptic drugs alone achieved seizure freedom in only a minority of structural-lesion cases, underscoring the need for early multimodal intervention including surgery when warranted. Early diagnosis and targeted therapy not only reduce seizure burden but also prevent prolonged misdiagnosis, which can impair psychological-social development and quality of life [8].

Conclusion

Dacrystic seizures represent a rare and diagnostically challenging form of epilepsy that can easily be mistaken for behavioral or emotional disturbances, particularly in children with neurodevelopmental disorders such as ADHD or autism spectrum disorder. This case highlights the importance of maintaining a high index of suspicion when evaluating unexplained, recurrent episodes of crying without emotional context. Comprehensive neurological assessment and confirmatory EEG testing are essential for establishing the diagnosis, especially when neuroimaging appears normal. Early identification and individualized antiepileptic therapy such as the combined use of valproic acid, lamotrigine, and benzodiazepines can substantially reduce seizure frequency and improve overall functioning and quality of life. Multidisciplinary management involving pediatric neurologists, psychiatrists, and neurophysiologists ensures accurate diagnosis and avoids

unnecessary psychological labeling. Increased clinical awareness of dacrystic seizures among healthcare professionals is crucial for timely recognition and optimal therapeutic outcomes.

Abbreviation

ADHD: Attention-Deficit/Hyperactivity Disorder; EEG: Electroencephalography

Declaration

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Availability of data and materials

Data will be available by emailing lyanlyan2014@yahoo.com

Authors' contributions

Fahem Alwan Bahlol (FAB) is the lead author who reported the case, compiled the first draft and approved the final version of it. Abdulnaser Abdulqader Salih Al-Samarraae (AASA) and Bilal Sadeq Abdulbaqi (BSA) contributed in writing the case report draft. All authors read and approved the final manuscript.

Ethics approval and consent to participate

We conducted the research following the declaration of Helsinki. The ethical approval was obtained from the "Balad General Hospital, The Unit of Humanity Resources, Sala-Aldin Health Directorate, Salah-Aldin Governorate, Ministry of Health, Iraq [Ref. No. 436 on 22 September 2025]. Parents verbal and signed consent form was obtained.

Consent for publication

Not applicable

Competing interest

The authors declare that they have no competing interests.

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