

ATYPICAL AURA IN CHILDHOOD: AN ITALIAN MULTICENTER CASE SERIES AND NARRATIVE REVIEW

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Background. Migraine with aura is a common neurological disorder in childhood, yet atypical aura presentations remain underrecognized and often pose a significant diagnostic challenge because they may mimic acute neurological disorders, including stroke, epilepsy, encephalitis, and demyelinating diseases. Current ICHD-3 criteria only partially reflect the broad clinical spectrum observed in pediatric patients. This multicenter collaborative study, involving 5 Italian pediatric headache centers, aimed to describe representative cases of atypical aura and to review the available literature on their clinical features, diagnosis, and management.

Methods. Three pediatric patients with atypical migraine aura were retrospectively collected from 5 Italian tertiary pediatric headache centers. Clinical presentation, diagnostic work-up, management, and outcomes were analyzed. A narrative review of the literature was also performed, focusing on confusional, hemiplegic, and prolonged aura in childhood.

Results. The case series included three distinct phenotypes: confusional aura with acute disorientation and altered awareness, hemiplegic aura with transient unilateral motor deficit and additional focal neurological symptoms, and prolonged aura with symptoms exceeding the duration defined by ICHD-3. In all patients, neuroimaging, electroencephalography, and laboratory investigations excluded alternative neurological conditions. Clinical outcomes were favorable, with complete symptom resolution and no structural abnormalities. The literature review confirmed that atypical aura is likely more common in children than currently recognized and is characterized by heterogeneous manifestations, including prolonged duration, bilateral or brainstem symptoms, and non-sequential progression of neurological deficits. Diagnosis remains primarily clinical after careful exclusion of secondary causes, while management is largely supportive, with specific therapeutic considerations in selected subtypes such as hemiplegic migraine.

Conclusions. Atypical migraine aura in childhood encompasses a wide spectrum of clinical presentations that frequently resemble neurological emergencies. Awareness of these uncommon phenotypes is essential to ensure prompt diagnosis, guide appropriate investigations, and avoid unnecessary interventions. This Italian multicenter experience, combined with a narrative review of the literature, highlights the need for greater recognition of pediatric atypical aura and supports future refinement of diagnostic criteria tailored to the pediatric population.