

pediatric epilepsy

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Pediatric Clinical Clips presented by Dayton Children's Advanced Practice Professionals provides quick reviews of common pediatric conditions.

Dayton Children's is the region's pediatric referral center for a 20-county area. As the only facility in the region with a full-time commitment to pediatrics, Dayton Children's offers a wide range of services in general pediatrics as well as in 35 subspecialty areas for infants, children and teens. We welcome your inquiries about services available — call 937-641-3666 or email marketing@childrensdayton.org.

case study

Kamryn is a 6 year old female presenting to her primary care pediatrician with concerns of episodes of staring. She is an otherwise healthy child with an uncomplicated birth history. She is developmentally appropriate and met all her milestones on time. She has done well academically, but over the last month her teachers have noted that she is taking longer to complete tasks and seems distracted. Parents have also noticed at home that she seems to stare off during meals and will stop while playing. During the episodes of inattention parents report that she will stop what she is doing, become unresponsive and stare for up to 10 seconds before returning to her activity. Parents report that episodes have become more frequent and occur throughout the day. Mother also reports that the patient's aunt had similar episodes as a child. The neurological exam was normal, and her pediatrician has made a referral to Dayton Children's neurology first seizure clinic.

case discussion

Upon receiving the referral to the Dayton Children's neurology division, the family was scheduled for the first seizure clinic. An EEG (electroencephalogram) was performed to detect abnormalities related to the electrical activity in the brain. The patient was then seen by a nurse practitioner and a pediatric neurologist where a comprehensive history and thorough exam were performed. Her EEG showed generalized rhythmic spikes or double spike wave discharges at around 3 Hz

and captured an event of staring following hyperventilation. Her EEG is indicative of absence epilepsy and the pediatric neurologist started her on ethosuximide 250 mg BID given the history and EEG findings. Family then met with a nurse and further seizure education was provided. After starting Zarontin, parents and teachers reported no further episodes. A follow-up EEG one month later showed improvement in spike and wave discharges.

A child receives an EEG. In some cases, the electrodes can be attached to a cap, as seen here, or they can be positioned directly on the scalp.



what is childhood absence epilepsy?

Childhood absence epilepsy is a type of generalized epilepsy syndrome and is more prominent in females verses males. Typical onset occurs between 4 and 10 years of age. Up to 20 percent of patients may have a history of febrile seizures, and up to one half may have a family member with a history of seizures. It is thought to be genetic in etiology, but no clear single gene defects have been identified (Sadleir et al.,2006). ADHD and anxiety are common morbidities.

Typical absence seizures include behavioral arrest and occasionally eyelid movements, eye open and oral automatisms. Typical seizures last 5-10 seconds and can occur up to 100 times in a day. Seizure will include behavioral arrest and vacant stare, with occasional rhythmic eye movements or oral automatisms. There is no aura or

postictal confusion typically. A routine EEG is typically effective in diagnosing childhood absence epilepsy and hyperventilation can trigger seizures in 90 percent of kids able to perform the maneuver (Sadleir, et al., 2006). Neuroimaging is not indicated. Occasionally, generalized tonic clonic seizures are seen in children with childhood absence epilepsy. First-line therapy is ethosuximide, which offers complete seizure control in 80 percent of patients (Fenichel, 2009). Valproic acid or lamotrigine are second-line therapies if ethosuximide is not well tolerated due to nausea, vomiting, sleep disturbance, drowsiness or hyperactivity. Childhood absence epilepsy may also be outgrown prior to puberty.

references

Pina-Garza, J.E. Fenichel's *Clinical Pediatric Neurology: A Signs and Symptoms Approach*. 7th ed. Saunders/Elsevier; 2013.

Sadleir LG, Farrell K, Smith S, et al. Electroclinical features of absence seizures in childhood absence epilepsy. *Neurology* 2006; 67:413.

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Laura Hart, APRN, FNP-C has been at Dayton Children's Hospital for six years. She received her bachelor's in science and nursing from Kettering College in 2011. She started her career at Dayton Children's in perioperative services as a circulating nurse. She furthered her education by attending Cedarville University, receiving her master's in science and nursing to obtain certification through the American Academy of Nurse Practitioners as a family nurse practitioner. Laura has worked in the neurology division since 2017 with a focus in migraines and epilepsy.