

PAROXYSMAL DISORDERS

MANAGEMENT OF REFLEX ANOXIC SEIZURES

Investigators at the Roald Dahl EEG Unit, Alder Hey Children's NHS Foundation, Liverpool, UK, review the definition, pathophysiology, clinical presentation, and management of reflex anoxic seizures (RAS) in children. Reflex asystolic syncope is proposed as the most appropriate alternative term; other terms for RAS include pallid breath-holding attacks and vasovagal syncope. A sudden injury or fright precipitates an acute loss of consciousness with opisthotonus, cyanosis, and clonic movements, resembling a short generalized tonic-clonic seizure. The underlying pathophysiology is a vagal-induced cardiac asystole with resultant cerebral hypoperfusion and consequent anoxia. EEG shows diffuse, high-amplitude slow wave activity during 10-15 sec of asystole, replaced by diffuse attenuated (low-amplitude) activity. After a further 5-20 sec, the vagal discharge stops, and the EEG shows a brief diffuse high-amplitude slow wave activity before returning to normal.

The differential diagnosis is an anoxic epileptic seizure, cyanotic breath-holding spell, or cardiogenic syncope. Anoxic epileptic seizures in which an initial anoxic seizure provokes a true epileptic seizure are very rare. Examples of cardiogenic syncope include prolonged QT syndromes (autosomal dominant Romano-Ward and autosomal recessive Jervell and Lange-Nielsen syndromes).

A careful history from an eyewitness of the onset of the attack is most important in diagnosis. Pharmacological treatment (e.g. atropine, scopolamine patch) may be helpful but carries a risk of adverse effects. Cardiac pacing is the only definitive treatment, reserved for frequent, most severe episodes. (Iyer A, Appleton R. Management of reflex anoxic seizures in children. *Arch Dis Child* 2013 Sep;98(9):714-7). (Response: Dr Richard Appleton. E-mail: Richard.appleton@alderhay.nhs.uk).

COMMENT. Reflex anoxic seizure (or reflex asystolic syncope) is important in the differential diagnosis of non-epileptic paroxysmal disorders in infants and pre-school-aged children.

Home video recordings of epileptic seizures induced by syncope are reported in 3 patients with "anoxic epileptic seizures." (Stephenson J, et al. *Epileptic Disord* 2004 Mar;6(1):15-9). These authors also reported a cohort of 9 children with syncope in which an initial anoxic seizure provoked a true epileptic seizure (Horrocks IA, Nechay A, Stephenson JBP, et al. *Arch Dis Child* 2005 Dec;90(12):1283-7). Contrary to these reports, the above author (Appleton R), a pediatric neurologist for over 22 years, avers he has never seen a child with epilepsy as a complication of RAS.

ELECTROCLINICAL SUBTYPES OF CINGULATE EPILEPSY

Investigators from the Cleveland Clinic, and University of Texas Southwestern Medical Center, studied consecutive cases of cingulate gyrus epilepsy identified retrospectively from their epilepsy databases from 1992 to 2009. Of 14 patients with