

FROM THE DIRECTOR

In this, our second issue of "Epilepsy News," we are focusing on an important patient concern: epilepsy and the school-aged child. Children often present the physician with diagnosis and seizure management perplexities.

The case study that follows takes the reader through the process of diagnosis and treatment pitfalls to the successful therapy and management of a seven-year old child struggling with seizures and lagging school performance. This case highlights the need for an accurate characterization of seizure type as the singular guide for the physician in prescribing appropriate treatment and achieving seizure management for patients.

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Medical Director

ABSENCE EPILEPSY?

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INTRODUCTION: John was a previously healthy 7-year-old male who was noted by his teachers to have occasional staring spells. Initially thought to be daydreaming, concern was raised when the spells became more frequent and increasingly difficult to break with verbal coaxing. Periods of confusion often followed the staring spells. His school performance began to deteriorate. Most uncharacteristic were several episodes of urinary incontinence occurring both during school and nocturnally. The patient's pediatrician sought consultation with a neurologist. A routine electroencephalogram in the awake state was performed which was remarkable for rare 2-3 Hertz rhythmic spike and wave discharges which were generalized in their distribution. A presumptive diagnosis of Absence Epilepsy was made. Zaronin (ethosuximide) was chosen for its efficacy in the treatment of absence seizures.

Unfortunately, John's seizures continued unabated despite therapeutic serum levels of Zaronin. His school performance was dismal. He was often kept home from school due to excessive sleepiness or confusion. It was at that time that a referral to an epilepsy center was made.

At the epilepsy center a detailed history of John's case was performed. Urgent admission for inpatient Video-EEG monitoring was recommended to aid in accurate characterization of the seizure events. During the hospitalization several clinical events were recorded consisting of periods of staring with unresponsiveness lasting between 20 and 40 seconds. Review of the EEG at the onset of these events revealed the appearance of rhythmic spike and wave complexes over the frontal temporal region of the left hemisphere followed by the rapid emergence of bi-hemispheric discharging rhythms. The interictal EEG revealed occasional left frontal temporal spikes with wide field spread over both hemispheres. Interestingly, many subclinical and subtle seizure events were detected on the EEG that had been undetected by his parents.

Based on the clinical phenomenology and the focal pattern of the electrical discharges at the onset of the episodes, John's seizures were reclassified as partial epilepsy. He was started on the antiepileptic medication Tegretol (carbamazepine) with rapid reduction in the frequency of seizure events. Within 1 week no further episodes were observed. John was much more alert and able to return to school. His teachers noted marked improvement in school performance almost immediately. At a 3-month follow-up appointment continued success was reported with no observed seizure events.

DISCUSSION: Accurate characterization of seizure type is a fundamental prerequisite in the management of patients with epilepsy. With rapidly expanding armamentarium of anti-epileptic medications, each with their own spectrum of action against certain seizure types and potential side effects, a physician is faced with the daunting task of choosing the most appropriate antiepileptic medication. Medication selection is key as some seizure-type medication combinations will actually exacerbate seizure frequency.

A detailed history is the first step in attempting to unmask seizure classification. Unfortunately, many times an adequate history and a comprehensive description of the seizure are difficult to obtain. Patients are often unaware of what transpires during a seizure event or may have only a fleeting awareness of the initial phase of the seizure, which is termed the 'aura.' Bystanders and family members who have witnessed seizures can be an invaluable tool in providing information vital to accurate seizure characterization. As often is the case however, the description of their observations can lack the subtle nuances that are critical in distinguishing seizure types.

In our patient's case described above, initial incorrect classification of seizure type as absence seizures led to a poor response to ethosuximide. Careful scrutiny of the description of John's seizures should have raised some early suspicion that his seizures may not fall within the category of absence seizures. Red flags included the prolonged duration of the episodes, the subsequent protracted periods of confusion following the seizures, and the reported urinary incontinence. Each of these findings is seldom observed in absence epilepsy and is more indicative of a partial seizure process.

Fundamental to appropriate seizure classification is accurate electroencephalography. Seizure activity as recorded on an EEG provides a specific electrical signature that is the basis of seizure characterization. Unfortunately, routine EEGs are often of insufficient duration to actually record a seizure event, especially in patients with rare seizure events. The sample size of abnormalities obtained during a routine EEG may also be inadequate to provide suitable information from which accurate conclusions can be inferred.

In recent years, Video-EEG monitoring has emerged as a crucial tool in accurate seizure classification. In this procedure, patients undergo prolonged EEG monitoring in a hospitalized setting during which time EEG and clinical characteristics of the patients seizure are recorded and scrutinized.

CALENDAR OF EVENTS

ABSENCE EPILEPSY? (Continued)

This affords the physician the ability to accurately characterize seizure type much more precisely than with conventional routine EEGs.

In John's case, careful review of his electrical seizure patterns during Video-EEG monitoring revealed that the patterns at the onset of the seizure were emanating from a specific region of the brain over the frontal temporal region of the left hemisphere and were indicative of a partial seizure process. This reclassification of seizure type led directly to the abandonment of previous ineffective seizure medication. Once John had been placed on the appropriate antiepileptic medication for his seizure type a rapid improvement was observed.

NORTHEAST REGIONAL EPILEPSY GROUP

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PATIENT EDUCATION PROGRAMS

Saturday, September 30th: Patient & Caretaker Education Program on Epilepsy & Seizures
White Plains Hospital Auditorium, Davis Avenue at East Post Road, White Plains, NY 10601
Registration & Breakfast 8:30 AM, Program 9AM - 12 noon. Please RSVP to 845.695.6885

Thursday, October 12th: Epilepsy Patient Education Day
Hekemian Conference Rooms 1 & 2, Hackensack University Medical Center
30 Prospect Avenue, Hackensack, NJ 07601
Registration 4:30 PM. Please RSVP to 201.996.3205

Saturday, October 21st: Patient & Caretaker Education Program on Epilepsy & Seizures
Our Lady Of Mercy Medical Center, 600 East 233rd Street, Bronx, NY 10466
Registration & Breakfast 8:30 AM, Conference Room B
Program 9 AM - 12 noon, Conference Room A
Please RSVP to 845.695.6885

Saturday, November 18th

Program 1: Epilepsy in the Classroom: Information for Parents & Educators

Program 2: Seizures and Epilepsy: Information for the School Nurse

Overlook Hospital, Wallace Auditorium, 99 Beauvoir Ave., Summit, NJ 07902
Registration & Breakfast 9:00 AM, Programs 9:30 AM - 1PM. Please RSVP to 845.695.6885

SUPPORT GROUP FOR ADULT PATIENTS WITH EPILEPSY & THEIR CARETAKERS

The 3rd Wednesday of every month - 6:30 PM • Orange Regional Medical Center-Horton Campus, 60 Prospect Avenue, Middletown, NY 10940, Horton II Classroom

The 1st Thursday of every month - 6:00 PM • White Plains Hospital Center Medical Library, Davis Avenue at East Post Road, White Plains, NY 10601

The 2nd Thursday of every month - 6:30 PM • Overlook Hospital, The Atlantic Neuroscience Institute Conference Room, 99 Beauvoir Ave., Summit, NJ 07902

To register call Ann Marie at 845.695.6885

SUPPORT GROUP FOR SPANISH-SPEAKING ADULT PATIENTS WITH EPILEPSY-GRUPOS DE APOYO PARA PACIENTES CON EPIELPSIA

Manhattan - First Friday of every month - Start date September 1st, 6:30-7:30 PM
104 East 40th Street, Suite 607 NY, NY (between Park & Lexington Aves.)

Contact to sign up: 212.661.7460 (Darlennys)

TEEN SUPPORT GROUP

Fourth Tuesday of every month - 7:00 PM-8:00 PM

The Northeast Regional Epilepsy Group, 390 Crystal Run Road, Middletown, NY 10941
To register call Ann Marie at 845.695.6885

Northeast Epilepsy Group

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