Evaluation and Treatment of Seizures

Case 1: 5-Year-Old Female with Episodes of “Blanking Out”*

A 5-year-old female is brought to your office by her parents because of episodic “blanking out” which began approximately one month ago. They describe episodes in which she abruptly stops all activity for about 10 seconds, followed by a rapid return to full consciousness. During most of these episodes her eyes are open and she remains motionless, although they have noticed some occasional “fumbling” hand movements. She does not respond to her name being called. When the episode ends she usually resumes whatever activity she was engaged in previously, and appears unaware that anything has happened. Her parents have counted as many as 30 such episodes a day. They have not identified any provoking factors and there is no particular time of day in which these episodes are more frequent. She tells you that she is unaware of the episodes described by her parents. She has not had any convulsive episodes.

Her perinatal and developmental histories are unremarkable. Other than typical, uncomplicated childhood illnesses she has been healthy. She takes no medication and has no known allergies. She has no siblings. Her father was told that he had “staring spells” as a child and took medication for about three years. He denies problems since then. He has a cousin who had febrile seizures in childhood.

The general physical and neurological examination is normal. After several minutes of hyperventilation in the office, she stops hyperventilating. She remains motionless with her eyes open and does not respond to verbal stimuli. After about 10 seconds she abruptly regains consciousness and begins hyperventilating again. Her parents describe this as typical of the events she is having at home. During an EEG, frequent generalized, 3 Hz spike and slow wave discharge are recorded.
Case 2: “Nervous Disorder”*
The patient is a 25 year-old right-handed marketing executive for a major credit card company, who began noticing episodes of losing track of conversations and having difficulty with finding words. These episodes lasted 2-3 minutes. At times, the spells seemed to be brought on by a particular memory from her past, but she couldn’t recall the memory exactly. No one at her job noticed anything abnormal, but notably, when the patient felt the strange memory distortion coming on, she would often go into the company lounge and sit by herself until the feeling passed. She usually returned to her job after 15 minutes.

The patient had no significant past medical history, and took no medicines except for the birth control pill. She was in psychotherapy for feelings of depression and anxiety, but was not taking medications for mood or anxiety disorder. She told her therapist about the strange episodes. The therapist noted that the patient had been going through a lot of stress at her job recently, had just broken-up with her boyfriend and had some insomnia. The therapist then sent her to a psychiatrist for evaluation the treatment of depression and/or anxiety.

What is your differential diagnosis at this point?

The patient made an appointment with the psychiatrist and on the first visit, described to the doctor the episodic periods of confusion and memory distortion. The psychiatrist noted that the patient had no previous history of major depression or suicide attempt and was currently mildly anxious, but had no need for anxiolytic medication. A careful medical history revealed that she had one febrile seizure at age three; no family members had epilepsy. The psychiatrist prescribed a benzodiazepine sleeping pill to be used as needed, and scheduled her for an electroencephalogram (EEG).

Prior to the EEG, the patient was required to travel from her job on the East Coast to the West Coast, crossing three time zones. After arriving, she met with her colleagues and went out to a business-related reception, where she consumed several drinks. She stayed out until 1 a.m. (Pacific time) and then went to bed, exhausted. She set the alarm for an early morning meeting.

The next thing she remembers is waking up on the floor near the bathroom of her hotel room. She had a severe headache and noted some blood in her mouth, along with a very sore tongue. She called the hotel physician and was taken to the local emergency room.

What is your differential diagnosis now?

How would you classify the events, both the episodes of memory disturbance and the nocturnal convulsion?

How would you evaluate this patient in the emergency room?
In the emergency room, she was seen by the doctors, examined and told she likely had a seizure during her sleep. A computerized tomographic scan of the head was normal,
showing no evidence of bleeding or abnormal masses in the brain. Her laboratory tests including a complete blood count, blood chemistries including glucose and toxicology screen were normal. She was given fosphenytoin 1000 mg intravenously and observed. She was then sent from the emergency room with a prescription for phenytoin 300 mg per day and told to follow-up with her local physician.

The patient left the ER feeling dizzy and slightly nauseated, and very sore in the muscles of her neck and back. She canceled the rest of her trip and returned home.

**What would the continued evaluation and treatment consist of?**

When the patient returned home, she called the psychiatrist and related what had happened. She was advised to continue the daily maintenance phenytoin dose and was given the name of a neurologist. She felt slightly tired, but she wasn’t sure if it was from the seizure she was told that she had, or if it was from the new medication, phenytoin. She made an appointment with the neurologist and continued working every day. She had no further episodes.

The neurologist took a complete neurologic and medical history. It was revealed that the patient had an uncomplicated febrile seizure as a toddler, but no other seizures, including nocturnally, as far as she knew. There was no family history of epilepsy in her immediate family members. She was the product of a normal, uncomplicated, full-term pregnancy and normal vaginal delivery. She has no history of head trauma with loss of consciousness and there is no history of brain infection such as meningitis. Medical history is otherwise benign and she has no medication allergies. She had regular menstrual periods since age 13 and has never been pregnant, although she stated she wants to have children in the future. Oral contraceptive pills have been effective and well tolerated for her. General and neurologic examination was normal.

The patient underwent an EEG that showed right anterior temporal spike and wave discharges interictally. An MRI of the brain was normal. Due to her persistent complaints of feeling sedated, the neurologist was considering changing her medication to another antiseizure medication. With the patient included in the discussion, it was decided to change phenytoin to oxcarbazepine, at a dose starting at 50 mg twice a day and increasing by 50 mg/day every two weeks to a target dose of 300 mg/day of lamotrigine. Side effects were explained to the patient. She was also started on folic acid 1 mg per day and was advised to take a multivitamin daily. What are the most reasonable choices of antiseizure treatment for this patient?

Was an appropriate choice made?

What considerations must be made since she is a woman of child-bearing potential?

Are there considerations regarding the oral contraceptive pill?

What is the reason for the extra folic acid and multivitamin?
What advice should be given regarding lifestyle (sleep habits, alcohol intake) and driving?
The patient changed medications without problems and had no further seizures. She continued to see her therapist, but not the psychiatrist. Her insomnia worsened slightly and she reported discrete periods of feeling very anxious. Her therapist again referred her back to the psychiatrist and called the neurologist to talk over the new symptoms.

**What is your differential diagnosis of the new symptoms?**

References:
7) Zahn CA; Morrell MJ; Collins SD; Labiner DM; Yerby MS. Management issues for women with epilepsy: a review of the literature. *Neurology* 1998;51(4):949-56.

*These cases have been modified from the American Epilepsy Society Resident education website. Full versions and supplemental materials can be found at: [http://www.aesnet.org/Visitors/ProfessionalDevelopment/MedEd/med_edu_residents.cfm](http://www.aesnet.org/Visitors/ProfessionalDevelopment/MedEd/med_edu_residents.cfm)