Episodic nausea and abdominal sensations as sole manifestations of simple partial seizures

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ABSTRACT

In adults, seizures manifesting with abdominal complaints are usually associated with complex partial or secondary generalized seizures. Also, seizure periodicity is not expected in postmenopausal women. We encountered a 72-year-old woman with episodic nausea and abdominal pain that usually occurred with predictable regularity. When symptoms persisted after extensive gastrointestinal investigations and cholecystectomy, she was referred to us and the diagnosis of simple partial seizures was suspected. Both EEG and brain MRI were normal. The diagnosis was established by video/EEG monitoring, which recorded several typical clinical events associated with right temporal ictal discharges. Because treatment with several antiepileptic medications caused intolerable side effects, the patient is now maintained on a low dose of Lamotrigine, which reduced seizure frequency and severity. This patient demonstrates that "abdominal" complaints, although rare, may be the sole manifestation of simple partial seizures. Unless considered in the differential diagnosis, the patient may undergo unnecessary and potentially harmful procedures.

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Abdominal symptoms, including epigastric or periumbilical discomfort, fullness, heat, nausea, and vomiting, are frequent accompaniments of complex partial seizures, particularly those emanating from temporal lobe structures.[1,2] However, the description of adult patients with simple partial seizures manifesting solely with abdominal "symptoms," without progression to impairment of consciousness or other manifestations of complex partial seizures is uncommon.[3] Usually, these patients seek help from their primary care physicians who often refer them to gastroenterologists and cardiologists. All too frequently, they undergo expensive and sometimes dangerous diagnostic procedures or invasive "therapeutic" interventions that are unwarranted. We now report on such a patient to increase physicians' awareness of abdominal symptoms as sole manifestation of simple partial seizures.

Case Report. The patient is a 72-year-old woman who was referred for neurological consultation by a gastroenterology consultant. She was healthy until approximately 2 years before, when she started having episodes of nausea without vomiting associated with abdominal epigastric discomfort and sometimes frank pain. The episodes were brief, lasting from one to a few minutes, and they came in clusters, sometimes as many as 10-15 in one day. These episodes moderately impaired her ability to perform daily activities. The episodes sometimes occurred at night and woke her from sleep. She kept a diary of these episodes, and it was evident that they occurred regularly, on a single day once every month. She was treated with drugs that alter intestinal motility and had extensive gastrointestinal investigations including esophagogastroduodenoscopy, upper gastrointestinal series, and other motility studies. She even underwent cholecystectomy for suspected recurrent cholecystitis, but to no avail. She specifically denied altered awareness and could speak, and answer complicated questions during these episodes. No abnormal involuntary movements were observed. Past medical history was noncontributory. Systems review and family history were negative. General physical examination and neurological examination were normal. Routine EEG was normal. An epilepsy protocol head MRI with and without contrast was also normal. In particular, there was no evidence of temporal lobe abnormalities. She was suspected to have simple partial seizures as the cause of

Figure 1 - An EEG recording of a typical seizure. The seizure onset is marked (X) and starts with right mid-temporal rhythmic theta activity that progressed to delta activity of higher amplitude that involved other right hemisphere leads.

her symptoms and was admitted to hospital for video/EEG monitoring. The date of hospital admission was specifically chosen to be the day preceding the anticipated date of symptoms based on her diary. A few hours after admission, she started having the usual symptoms that were brief and repetitive. She had 7 episodes within 9 hours. Each episode was associated with abdominal pain, discomfort, and nausea, but without vomiting and there were no other manifestations of seizures. She remained responsive throughout the episodes and answered questions appropriately. There were no facial or extremity motor automatisms and she denied olfactory hallucinations. The concomitant EEG revealed 7 discrete seizures with the ictal activity emanating from the right anterior temporal leads. The seizures' duration ranged from 22-58 seconds. The abnormal EEG activity was consistent in duration and wave-form to previously described ictal discharges of simple partial seizures.[4,5] In our opinion, this provided a definitive diagnosis of simple partial seizures as the cause of her symptoms. The EEG recording of one such seizure is shown in the **Figure 1**. Further investigations with interictal brain positron emission tomography scan, or ictal brain single photon emission computed tomography scan were not performed, as surgical intervention was not contemplated for this patient with little disabling symptoms. She was started on Oxcarbazepine, 300 mg at bedtime and was discharged the next morning. However, she stopped the medication after 3 days because of dizziness. She was then treated with a succession of the following antiseizure medications: Levetiracetam, Clonazepam, and Topiramate. These medications were used as monotherapy in small doses, but she could not tolerate any of them because of fatigue and dizziness, although all were effective in preventing the seizures. She is now taking Lamotrigine, which was initially given in a dose of 12.5 mg per day, and gradually increased to 25 mg twice daily over a few weeks. The seizure clusters continued to occur on this dose, but were less frequent and much milder and she remains fully functioning during the seizures.

Discussion. This patient's symptoms were the manifestation of simple partial seizures. Abdominal symptoms and other autonomic concomitants of seizures are usually recognized when associated with other manifestations of seizures such as abnormal motor activity or altered state of consciousness.[1,2] However, simple partial seizures manifesting only with autonomic symptoms, which by definition do not have an altered mental state, are more difficult to diagnose.[3] The clues that this patient had an underlying seizure disorder were all obtained by a careful history, which revealed that the symptoms were sudden in onset and short in duration and that they sometimes occurred during sleep. These characteristics are rarely, if ever, caused by primary gastrointestinal diseases. The neurological examination, MRI imaging, and interictal EEG were all normal, which is not unusual. The diagnosis in this patient was confirmed by video/EEG monitoring. Lateralization of the brief seizures to the nondominant temporal lobe was previously noted in most patients with ictal abdominal symptoms and vomiting.[4,6,7] This illustrates the importance of obtaining a detailed history in these patients.

This patient had several unique features that are uncommon for patients with abdominal epilepsy. First, she presented at age 72 years, which is relatively late for simple partial seizures with abdominal symptoms in general, which are more often seen in younger adults and children.[3] Second, her symptoms were isolated to nausea, abdominal discomfort and pain, but without vomiting or other autonomic symptoms. Third, and probably most interesting, was the regularly recurring

cycle of symptoms at one-month intervals. The patient is postmenopausal for more than 25 years and the underlying cause of such cycling is unknown, although a pituitary hormonal influence is suspected. We were unable to find previously reported patients with similar regularly recurring simple partial seizures with abdominal symptoms in this age group.

Primary physicians, internists, and gastroenterologists should be aware of the manifestations of simple partial seizures to prevent unnecessary expensive workup and unnecessary surgical interventions and other invasive procedures. In our patient, the symptoms were relatively mild and the use of antiepileptic drugs, even in small doses, produced symptoms that were worse than the disease itself. It is not unusual for simple partial seizures to be resistant to drug therapy. However, the mere understanding of the origin of her symptoms was of great relief to the patient.

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