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ABDOMINAL EPILEPSY, A RARE CAUSE OF CHRONIC ABDOMINAL PAIN AND VOMITING: CASE REPORT

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ABSTRACT

Background: Abdominal epilepsy (AE) is an uncommon cause for chronic recurrent abdominal pain in children and adults. It is characterized by paroxysmal episode of abdominal pain, diverse abdominal complaints, definite electroencephalogram (EEG) abnormalities and favorable response to the introduction of antiepileptic drugs (AED).

Case presentation: A10year old male patient presented to pediatric clinic with recurrent abdominal pain and vomiting lasting for one to three days every month since 3 years .His physical examination, blood count, blood chemistry, ultrasound abdomen and repeated urine and stool examination were normal.

A diagnosis of abdominal epilepsy is considered after referral of the patient to a neurologist and performing electroencephalogram (EEG)

Conclusions: The diagnosis of abdominal epilepsy (AE) and subtle Central Nervous System (CNS) symptoms in the presence of unexplained abdominal pain and vomiting should be kept in mind

Keywords: Abdominal epilepsy, Abdominal pain, cyclic vomiting syndrome, childhood

INTRODUCTION

Abdominal pain is a common complaint in childhood, although the cause may not always be detected. Recurrent abdominal pain is an important clinical entity that is frequently encountered by pediatricians. Abdominal epilepsy (AE) is a very rare cause of this clinical entity, and it may sometimes be overlooked in the differential diagnosis. AE is characterized by episodic paroxysmal abdominal and periumbilical

pain, various abdominal complaints, specific abnormalities on electro encephalography (EEG), and good response to antiepileptic drugs. Gastrointestinal signs and symptoms may be the only indication of convulsions. Abdominal complaints including nausea, vomiting, diarrhea, and bloating have been reported before epileptic seizures, particularly in temporal lobe epilepsy. The patient may exhibit behavior disturbances, nightmares, and personality changes. It is believed that painful epileptic seizures stem from the parietal and/or temporal lobe.

Case presentation

In this report, we describe the case of a 10 year old male patient presented to pediatric clinic at Prince Sattam Bin Abdulaziz University Hospital (PSAUH) with recurrent (intermittent) attacks of peri umbilical pain mostly dull aching sometimes sharp pain last for 2 to 5 minutes followed by uncontrollable vomiting for 1 to 3 days occurs every months since 3 years. The vomiting occurs after taking any kind of food or drink. It does not respond to any symptomatic treatment. The attack occurs unpredictably nearly every month. He also suffers from motion sickness, with positive family history (second degree relative) of motion sickness. His medical history did not include seizures, chronic systemic disease, long-term use of medication, or trauma. Investigations, including complete urinalysis, hemogram, biochemical tests, and abdominal ultrasonography (USG) were normal. The patient diagnosed as cyclic vomiting, and had been treated symptomatically in emergency room and pediatric clinics. On physical examination, the patient's weight was 28.5 kg,on 25th percentile and his height was 131 cm on 10th percentile . On neurological examination, the patient was fully conscious, alert, with good orientation to time, place, and person, without any focal deficits. Other system examinations were normal. Routine biochemical tests and blood gas analysis were normal. His fibrinogen levels were 225 mg/dL, C-reactive protein levels were 0.53 mg/dL, and Erythrocyte sedimentation rate (ESR) was 10 mm/h. Hematological data revealed white blood cell counts of 14.6 k/µL, hemoglobin levels of 10.5 g/dL, and platelet counts of 216 k/µL. Anti-HAV, HBs Ag, anti-HCV, ANA, and anti-ds-DNA were negative. There were no parasites or occult blood on stool examination. Urine and stool cultures were negative. Computerized tomography (CT) and magnetic resonance imaging (MRI) were normal. Electroencephalography was performed to evaluate the neurological signs of the patient. EEG revealed

generalized epileptiform activity characterized by sharp and slow wave complexes (Figure 1).

The patient treated with carbamazepine at dose of 15 mg/kg/day. After treatment with the drug, the abdominal pain, and vomiting did not recur. His EEG had returned to normal after 3 months (Figure 2). He still on carbamazepine drug treatment with regular follow up at neurology clinic.

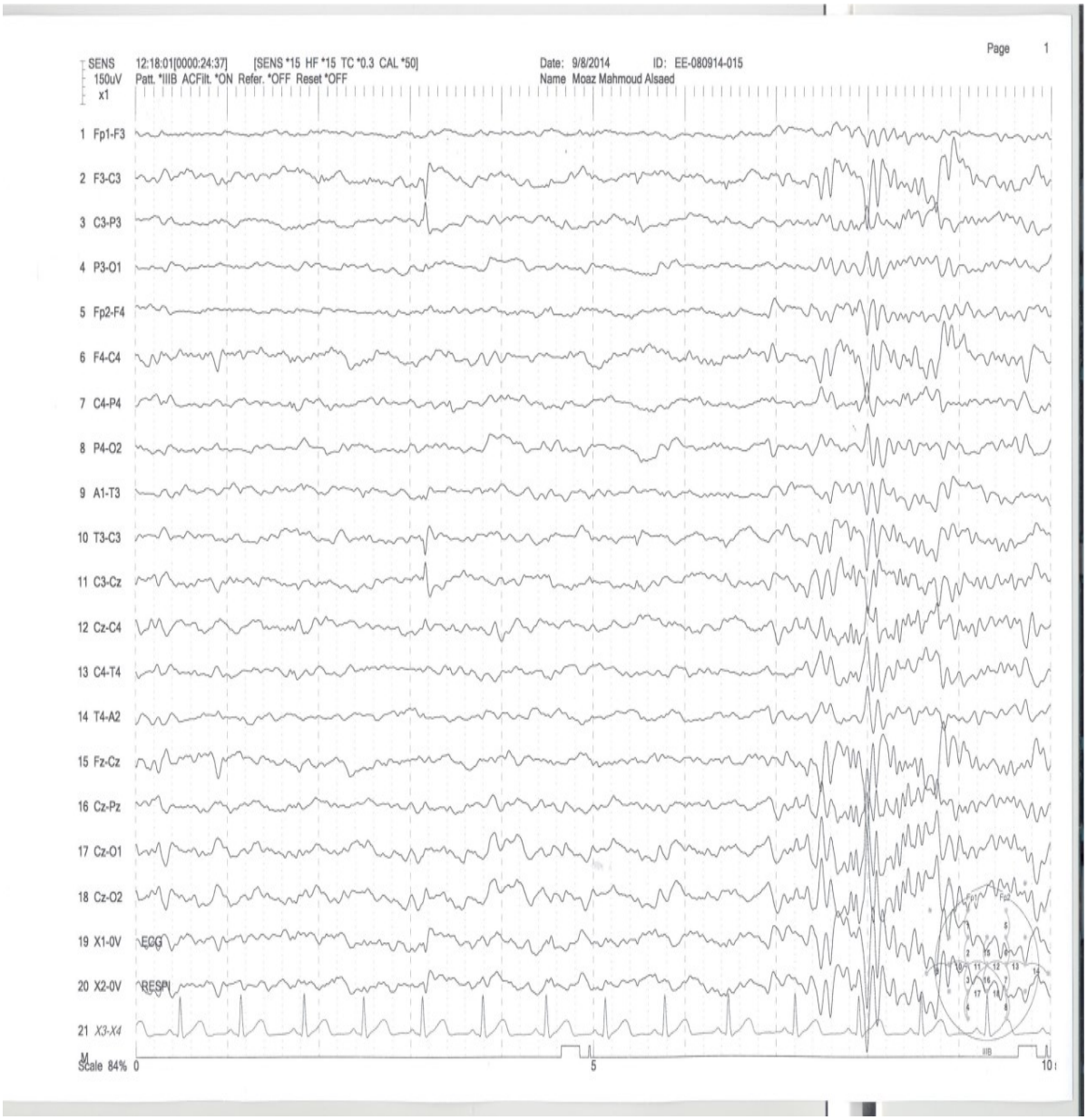

Figure 1: EEG at the time of the diagnosis

EEG revealed generalized epileptiform activity characterized by sharp and slow wave complexes.

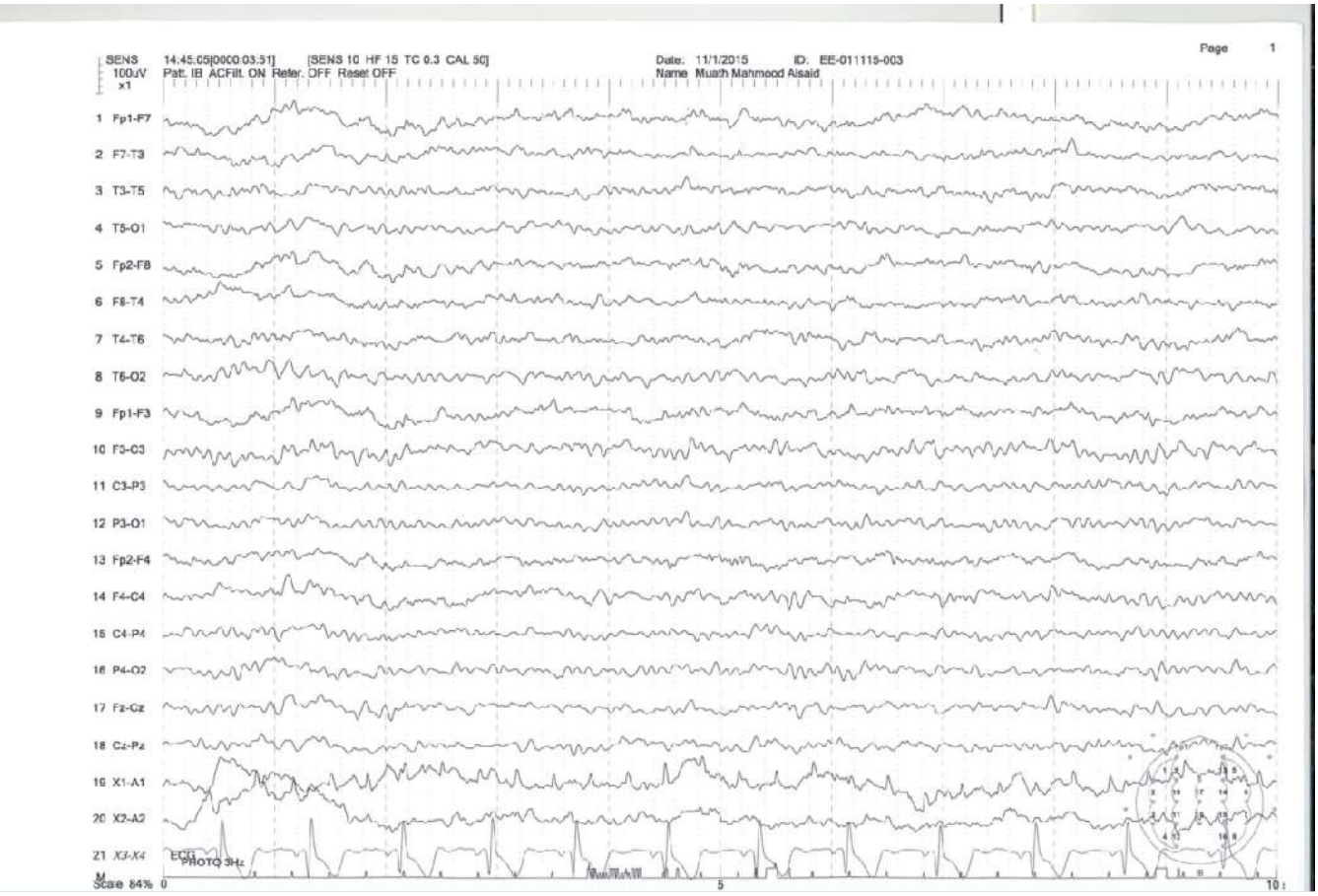

Figure 2: Follow up EEG

After treatment with carbamazepine, EEG had returned to normal after 3 months. The abdominal pain, and vomiting did not recure.

DISCUSSION

Abdominal epilepsy is characterized by unexplained paroxysmal gastrointestinal symptoms (which are rare, repetitive, and often self-limiting), clinical signs of central nervous system disorders, abnormal EEG findings, and good response to antiepileptic drugs.

Because of its uncommon occurrence, abdominal epilepsy is frequently

overlooked. Abdominal pains are such a common complaint in childhood and are often the result of air swallowing, poor bowel habits, over activity at mealtimes, and so on.

The differential diagnosis will typically include other elusive causes of paroxysmalgastro intestinal symptoms, such as porphyria, familial Mediterranean fever (FMF), cyclical vomiting, and abdominal migraine. abdominal migraine deserves special notice because it has often been confused in the literature with abdominal epilepsy.

Acute intermittent porphyria is a rare condition characterized by abdominal pain and a variety of non-specific symptoms. Its diagnosis is made by appropriate tests whenever required. In our study, porphyria was ruled out. Syringomyelia is another condition that mimics AE. Patients usually have a gait disorder and muscle weakness in addition to recurrent abdominal pain. In our patients, such abnormalities were not detected by MRI.

Familial Mediterranean fever is characterized by recurrent febrile episodes of sterile peritonitis, pleuritis, and arthritis. Other areas less frequently affected are the skin and the pericardium. Most patients (90%) experience their first attack before 20 years of age . FMF attacks unfold suddenly, persist for only a short time (6–96 h) and subside spontaneously. The absence of fever and extra-abdominal symptoms along with abnormal EEG favor the diagnosis of AE.

Abdominal migraine is characterized by recurrent attacks of periumbilical or poorly localized abdominal pain, commonly associated with anorexia, nausea, vomiting, and pallor. Headache is not a necessary feature. A family history of migraine is common. In practice, they can be difficult to differentiate, but there are some helpful distinguishing features. In abdominal migraine, the pain is characteristically more dull and of longer duration, with episodes usually lasting between 1 hour and 1–2days.In addition, EEG abnormalities characteristic of epilepsy and a response to anticonvulsant therapy favor a diagnosis of abdominal epilepsy.

Cyclic vomiting syndrome (CVS) is characterized by repeated, stereotypical vomiting episodes that are accompanied by debilitating nausea and/or severe headache. The frequency of vomiting in cyclic vomiting was three attacks lasting for one hour to 10 days in a period of 6 months. In each attack, vomiting occurred four times per hour for at least one hour without other attributable etiology Abdominal symptoms may suggest irritable bowel syndrome. However, unlike irritable bowel syndrome, AE is associated with changes in

consciousness and abnormal EEG findings during the attacks, followed by fatigue after the attacks. Zinkin et al. have reported that abdominal pain (86%), mental status changes (64%), generalized tonic-colonic seizures (36%), lethargy (36%), nausea and/or vomiting (28%), and diarrhea (5%) are common clinical findings in AE. Neurological symptoms, such as convulsions and mental status changes, accompanied by abdominal pain are an important clue in AE. However, every episode may not be accompanied by neurological symptoms. In our patient, there were few complaints of gastrointestinal and neurological systems.

CONCLUSIONS

In conclusion, in the diagnosis of AE and subtle CNS symptoms in the presence of paroxysmal episodes of abdominal pain and recurrent vomiting should alert clinicians who are not neurologists.

After exclusion of known causes, diagnosis of AE should be considered in children with episodes of paroxysmal abdominal pain, nausea, and/or vomiting accompanied by neurological symptoms. Investigations such as EEG can be helpful in the differential diagnosis.

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