



Case report

A fitting tribute to Epilepsia partialis continua

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HIGHLIGHTS

- A case report of an elderly lady reported to be seizing in bed, with no past history of epilepsy but a history of alcoholism.
- The diagnosis of Epilepsia partialis continua was made following video evidence of evolution and prodrome.
- Video evidence is crucial in differentiating between the diagnosis of pseudoseizures and Epilepsia partialis continua.
- Always consider multiple hypotheses and remember that a patient's presentation can be atypical.
- Do not jump to conclusions and try to seek out evidence that challenges your initial diagnosis.

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ABSTRACT

In July 2014, a 66 year-old lady presented to emergency department after having not been seen for 3 days. She was eventually found in bed not responding verbally. The ambulance service reported tonic-clonic seizures lasting 10–30 s every 3 min.

The patient was treated for her seizures with phenytoin and additional benzodiazepines as required. Her seizure had temporarily resolved and she was admitted for investigations. She had no history of epilepsy or seizures.

The history of alcoholism and lack of any substantial history of epilepsy, left the team considering whether this was an alcohol induced event or a pseudoseizure. The patient referred to no prodrome, no tongue biting/incontinence and lacked any convincing post-ictal phases. The seizures were no longer tonic-clonic but evolved into focal motor, with right-sided facial twitching lasting 2 min.

Her investigations from bloods, lumbar puncture, computerised tomography scan and magnetic resonance imaging were all normal which led the team to consider whether this was a pseudoseizure. The patient appeared unconscious during seizures but was rousable during the episodes, although she claimed to have no recollection of them after.

The seizures frequency settled at 30/day after being resistant to most antiepileptic regimes, except the eventual combination of Levetiracetam 1000 mg BD and Sodium Valproate 400 mg which left her seizure-free.

However, the key evidence separating pseudoseizures and epilepsy partialis continua lay in collecting video evidence. This rare but important differential can often be overlooked but is especially important in the elderly, in whom this condition can mask serious underlying pathology.

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1. Introduction

Epilepsia partialis continua (EPC) is a rare and unique condition whereby a patient experiences continued focal seizures [1]. These seizures generally have a cortical origin and consist of continuous

muscle jerking, though subcortical mechanisms have been suggested. EPC is currently seen to be a type of seizure instead of a form of epilepsy, branded under focal status epilepticus [2]. The pathophysiology is still yet to be fully understood, with no single mechanism currently responsible for EPC. Characteristically, a causal relationship has been established between EPC and lesions involving the motor cortex [3,4]. Such examples include vascular disorders i.e. stroke, tumours, encephalitis, trauma, multiple

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sclerosis and infective lesions i.e. tuberculosis [3]. Prognosis is highly dependent on the underlying cause and in commencing prompt treatment. Thus, the search for the cause is of supreme importance. The presence of characteristic semiological features allows EPC to be diagnosed and differentiated from other movement syndromes [4].

2. Presentation of the case

2.1. History

A 66 year old lady presented to the Emergency Department via Ambulance with tonic-clonic seizures lasting 10–30 s every 3 min. They caused her body to become stiff followed by twitching of the arms and legs. She had not been seen for 3 days and was found in bed catatonic. She didn't remember the event and had never felt like this before. The last thing she could remember was watching TV at home 3/7 ago. She lives alone and has a history of alcoholism.

2.2. Past history

She is a type 2 diabetic for which she takes Pioglitazone 10 mg and has a 10 year history of depression for which she takes Citalopram 10 mg. She has hypothyroidism which is treated by Levothyroxine 100 mcg and sleep disturbances for which she is given Zopiclone 3.75 mg. Her acid reflux is treated with Omeprazole 20 mg. She has a history of alcohol dependency, but claims that she no longer drinks. There were no signs of alcohol withdrawal. Multiple previous admissions with collapses have been noted in March 2014 and December 2013 with no unifying cause identified. No history of seizures as a child and no recent head injuries were reported. She has no known allergies.

2.3. Examination

Upon examination, the patient was alert and observations were unremarkable. Observations on arrival revealed respiratory rate of 22 breaths per minute, O₂ saturation 95% on 1 L of O₂, afebrile, blood pressure 145/65 and heart rate of 80 beats per minute. She was given diazepam 10 mg IV and phenytoin 150 mg PO and her seizures stopped temporarily. The seizures were no longer tonic-clonic but evolved into focal motor, with right-sided facial twitching lasting for 2 min. They were no pre-ictal symptoms and no post ictal phase. She was unconscious and claimed to have no memory of the event. Her cardiovascular and gastrointestinal systems were unremarkable. On examination of her respiratory system, right basal consolidation with right basal crepitation was reported.

2.4. Investigations

Her blood results, displayed in Table 1, were all normal apart from a raised GGT and slightly raised CRP. Lumbar puncture (LP) and non-contrast head computerised tomography (CT) scan were also normal which led the team to consider whether this was a pseudoseizure. A blood alcohol test was not performed and her urine dipstick was normal. The patient seemed to be unconscious during seizures but was noted to be rousable during the episodes, although she claimed to have no recollection of them after.

2.5. Video evidence

This revealed focal motor seizures on the right side of her face. Consent was obtained from the patient, clinical photography and legal department with a signed agreement. The patient was happy

Table 1

Patient's blood results against normal values.

Parameter	Patient's result	Normal values
White blood cell count (WBC)	10.1	4–11 × 10 ⁹ /L
Haemoglobin (Hb)	143	115–160 g/L
International Normalized ratio (INR)	1.2	0.8–1.2
Serum sodium (Na)	135	135–145 mmol/L
Serum potassium (K)	4.1	3.5–5.0 mmol/L
Creatinine (Cr)	73	70–150 mmol/L
Gamma-glutamyl transferase (GGT)	200	0–45 u/L
Alkaline phosphatase (ALP)	100	30–150 iu/L
C-reactive protein (CRP)	13	<10 mg/L
Thyroxine, T4	22.5	10–23 pmol/L
Thyroid Stimulating Hormone (TSH)	3	0.5–5.7 mu/ml

for the use of video to help with resolution and diagnosis. A specialist healthcare assistant monitored seizures and the videos correlated with electroencephalography (EEG).

2.6. EEG

Runs of high amplitude slow wave activity were seen over the fronto- and mid-temporal region on the left side and occasionally on the right side. The patient experienced three of her habitual episodes during the EEG. She was asked to remember specific numbers during the seizure which she recalled after the event was over.

2.7. Differential diagnoses

- Pseudoseizure
- Alcohol withdrawal related seizure
- New onset Epilepsy
- Epilepsy partialis continua

The eventual diagnosis of Epilepsia partialis continua was made following the video evidence showing evolution and prodrome.

2.8. Treatment

An emergency department SHO/SpR examined the patient first. The treatment of Phenytoin and Diazepam was then commenced. After examination by a Medical SHO & Consultant Neurologist, Phenytoin was stopped. They commenced Levetiracetam and Sodium Valproate as her seizures were ongoing. The seizures eventually stopped following the change in treatment regimen, shown in Table 2. She was not given Chlordiazepoxide as she was not in acute alcohol withdrawal. The patient completed a course of 1.2 mg IV Co-amoxiclav for her community acquired pneumonia and remained in hospital for 10 days.

2.9. Outcome/follow-up

Patient remains seizure free. Outpatient follow-up is ongoing.

3. Discussion

This case presented a progressive elimination of various differential diagnoses, whilst also highlighting the problem of heuristics. The objective examination and subjective responses of the patient were not consistent. For example, her claim of not remembering the events, opposed the evidence of her memory of the event during the EEG.

It is at the margins where diagnoses are unclear that clinicians become doubtful of patient accounts. Therefore, clinicians often employ their own experience to determine a fitting diagnosis. Heuristics refers to these cognitive shortcuts that allow such

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