

Epileptic belly dancing: a video-polygraphic recording

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A 60-year-old man with a one-year diagnosis of lung adenocarcinoma developed repetitive episodes of isolated abdominal jerking, consistent with belly dancer's syndrome (BDS) [1-3]. There was no loss of awareness. Interictal neurological examination was normal. During an episode, video-polygraphy revealed a left parietal seizure (*video sequence*) and neuroimaging showed left parietal metastasis (*figure 1*). Levetiracetam (1 g/day) resolved the seizures. Focal aware motor seizures with abdominal clonic jerking consist of episodic, short-lasting, rhythmic movements of the abdominal wall, which are often misdiagnosed at first, owing to their rarity and heterogeneous aetiology [1-4]. As in our case, electroclinical findings indicate that seizures originate in the parietal region [2]. Awareness of this unusual ictal semiology has important implications for diagnosis and treatment. ■

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None of the authors have any conflicts of interest to declare.

References

1. Matsuo F. Partial epileptic seizures beginning in the truncal muscles. *Acta Neurol Scand* 1984; 69(5): 264-9.
2. Lizarraga KJ, Serrano EA, Tornos L, Kanner AM, Lang AE. Isolated abdominal motor seizures of mesial parietal origin: epileptic belly dancing? *Mov Disord Clin Pract* 2019; 6 (5): 396-9.
3. Aljaafari D, Nascimento FA, Abraham A, Andrade DM, Wennberg RA. Unilateral abdominal clonic seizures of parietal lobe origin: EEG findings. *Epileptic Disord* 2018; 20 (2): 158-63.
4. Tatum KB, Schuele SU, Templer JW, Becker TL, Tatum WO. True abdominal epilepsy is clonic jerking of the abdominal musculature. *Epileptic Disord* 2020; 22(5): 582-91.

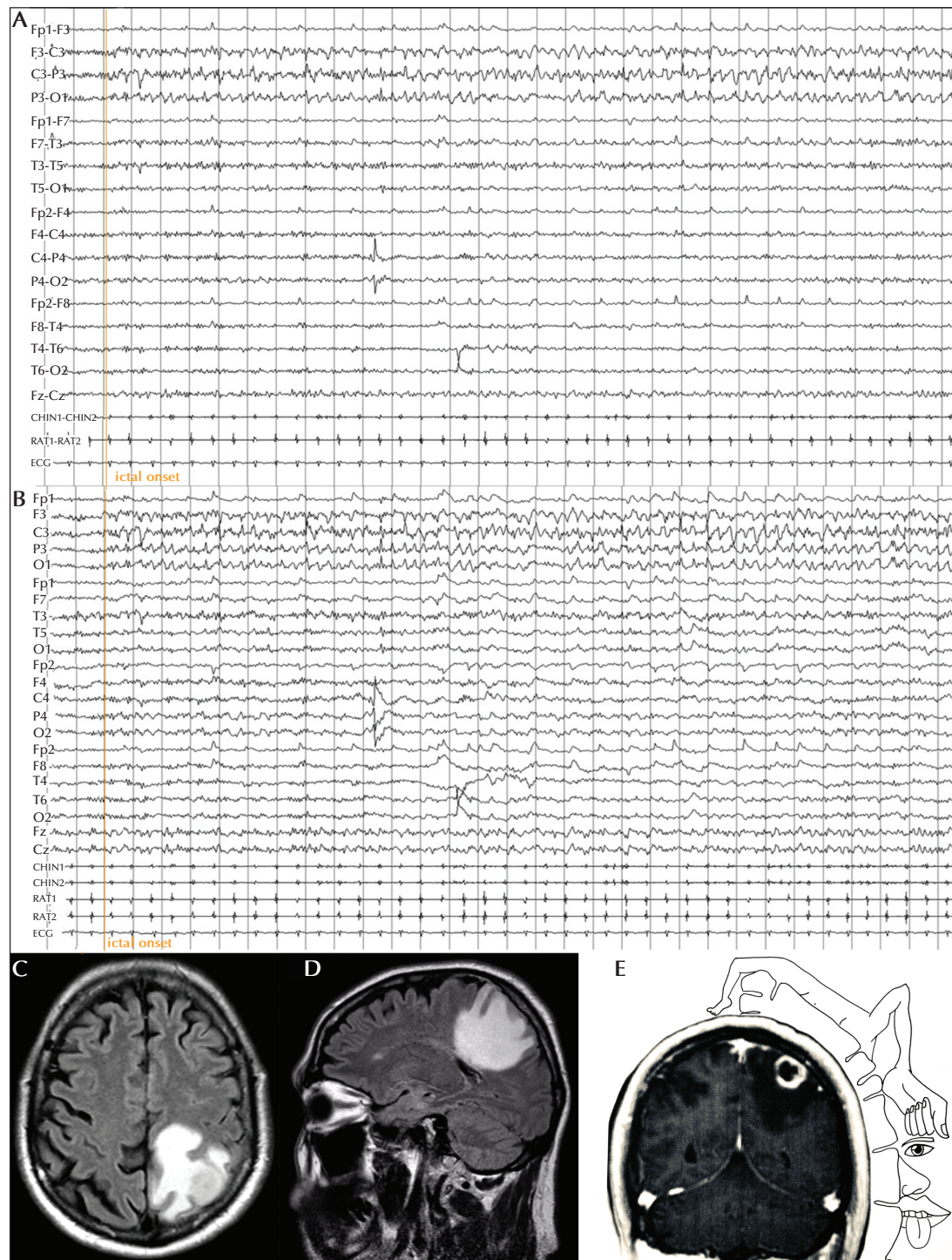
Supplementary material.

Summary didactic slides are available at www.epilepticdisorders.com.



VIDEO ONLINE

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■ **Figure 1.** Ictal EEG on bipolar (A) and physical referential montage (with preauricular A1 and A2 reference) (B). Note the first ictal EEG change (orange line) from the background consisting of rhythmic, sharp activity overlying the left parieto-temporal regions. EMG channels: CHIN1-2= right rectus abdominis; RAT1-2=left rectus abdominis. Axial (C) and sagittal (D) fluid-attenuated inversion recovery brain MRI showing hyperintense signal changes around the left central gyrus. (E) Coronal T1-weighted brain MRI with gadolinium reveals a ring enhancement pattern of the parietal lesion. Note also the somatotopic representation of the trunk muscles on the motor homunculus.

Legend for video sequence

Continuous video-polygraphic EEG/EMG monitoring recorded with the 10-20 international system while the patient was awake with eyes closed. Note the ictal EEG onset (Segment 1) that consists of rhythmic, sharply contoured activity overlying the left parieto-temporal regions; approximately 30 seconds later, rhythmic contractions of the right rectus abdominis muscle appeared (Segment 2 and 3). After 180 seconds, abdominal muscle activity abruptly ends with restoration of the respiratory pattern (Segment 4). EEG channel parameters: low-frequency filter=0.1 Hz, high-frequency filter=70 Hz, notch filter=50 Hz, sensitivity=7/ μ m, timebase=15 mm/sec. EMG channels: CHIN 1-2= right rectus abdominis; RAT1-2 =left rectus abdominis.

Key words for video research on www.epilepticdisorders.com

Phenomenology: focal aware motor seizures with abdominal clonic jerking

Localization: posterior cortex parietal, central (left)

Syndrome: focal non-idiopathic parietal

Aetiology: tumour (brain)

TEST YOURSELF

- (1) Where does the somatotopic representation of the trunk muscles localize in the cortical homunculus?
 - A. Near the vertex
 - B. Near the Sylvian fissure
 - C. In the paracentral lobule
 - D. In the fronto-parietal operculum
- (2) What are the clinical features that would suggest an epileptic aetiology of belly dancing?
 - A. The presence of chronic neuropathic pain preceding the onset of motor episodes
 - B. The episodic, short-lasting manifestation with fast clonic motor activity
 - C. Voluntary control of the abnormal movements during the episodes
 - D. The exclusive involvement of abdominal muscles
- (3) Which examination should be performed if a patient exhibits rhythmic movements of the abdominal wall?
 - A. Motor evoked potentials
 - B. Video-EEG polygraphy
 - C. Surface EMG
 - D. Abdominal ultrasound

Note: Reading the manuscript provides an answer to all questions. Correct answers may be accessed on the website, www.epilepticdisorders.com.
