TITLE PAGE

Manuscript title: Teaching Video NeuroImages: Shedding Light on Sunflower Syndrome

Manuscript classification: Teaching Video NeuroImages – Resident & Fellow section.

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Case Description

We report a 12-year-old girl with a history of absence and generalized tonic-clonic seizures as well as stereotyped, light-induced, hand-waving episodes (HWEs) (video 1). The latter were occasionally accompanied by eye fluttering. Notably, her maternal uncle had childhood-onset tonic-clonic seizures. Video-EEG confirmed that her HWEs were epileptic in nature (video 2). She was started on fenfluramine in addition to valproate with a partial improvement in HWEs.

Sunflower syndrome (SFS) is a rare childhood-onset generalized epilepsy characterized by photosensitivity, heliotropism, and drug-resistant stereotyped seizures. Hand-waving episodes are typically associated with generalized 3-4 Hz spike-and-wave discharges; however, ictal EEG findings may vary. SFS may have an underlying genetic component, although this has not been fully elucidated. Differential diagnoses include
tics and behavioral issues. Besides broad-spectrum antiseizure medications, these patients should be advised to avoid the sun and wear a hat and/or tinted glasses. [1,2] Fenfluramine appears to be an effective treatment option [3].

Appendix 1. Authors

<table>
<thead>
<tr>
<th>Name</th>
<th>Location</th>
<th>Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fábio A. Nascimento, MD</td>
<td>Massachusetts General Hospital, Boston, MA</td>
<td>Conceptualized and designed study, analyzed and interpreted data, drafted manuscript.</td>
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<tr>
<td>Elizabeth A. Thiele, MD, PhD</td>
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<td>Conceptualized and designed study, analyzed and interpreted data, reviewed manuscript, supervised study.</td>
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</table>

Video 1- [http://links.lww.com/WNL/B347](http://links.lww.com/WNL/B347)  
Video 2- [http://links.lww.com/WNL/B348](http://links.lww.com/WNL/B348)  
Teaching Slides - [http://links.lww.com/WNL/B355](http://links.lww.com/WNL/B355)
References


Video 1 legend

There are multiple episodes of highly stereotyped hand-waving episodes (HWEs) characterized by left hand waving in front of the patient’s face while looking toward the sun along with variable eyelid fluttering and grossly intact awareness.

Video 2 legend

Video-EEG data shows two electroclinical hand-waving seizures [sensitivity 20 uV/mm, LF 1 Hz, HFF 70 Hz, notch off, timebase 15 mm/sec]. Video shows left hand waving in front of the patient’s face while looking toward light along with intact awareness. Ictal EEG, bipolar montage shows simultaneous generalized 100-150 uV 6-10 Hz rhythmic spiky/sharp activity. Electroclinical onset and offset are marked with “first unequivocal ictal electrographic change” and “OFFSET”, respectively.
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