

■ **Clinical commentary**

Epileptic Disord 2021; 23 (4): 649-654

Epileptic
Disorders

Musicogenic epilepsy with ictal asystole: a video-EEG case report

Jeanne Benoit, Florence Martin, Pierre Thomas

UF EEG-Epileptologie, Service de
Neurologie, University Hospitals
of Nice, France

Epileptic
Disorders

REFLEX SEIZURES

Epileptic events consistently elicited by a specific stimulus

- Simple environmental triggers: light flashes, patterns, elimination of visual fixation, elimination of light, touch, hot water, startle or a monotone
- Complex triggers: reading, calculating, eating, tooth-brushing, listening to music or singing

MUSICOGENIC SEIZURES

Rare form of complex reflex epilepsy

- Musical stimuli vary, from listening to a particular part of a specific song, to hearing or playing a piece on a specific instrument or by a specific composer
- Triggers are correlated to the different components of a musical stimulus:
 - Rhythm
 - Harmony
 - Melody
 - Emotional impact and memory
- Inconsistent focus on EEG, but most often right temporal lobe:
 - Limbic ictal onset may correlate with emotional impact and memory component
 - Neocortical ictal onset may correlate with the other, more simple components

ICTAL ASYSTOLE

- Prevalence :
 - 80-100% of temporal lobe seizures induce tachycardia
 - 0.3 to 0.7% of temporal lobe seizures induce ictal asystole, often left temporal lobe seizures
- Suspected when atonic loss of consciousness or tardive falls occur in the course of a typical seizure
- Pathophysiology uncertain: probable involvement of central neurovegetative centres (insular cortex, anterior cingulate gyrus, amygdala...) in the epileptic discharge

OUR PATIENT

- Right temporal epilepsy
- Musicogenic epilepsy
- Ictal asystole
- Refused stereo-EEG investigations:
 - Limiting knowledge of ictal onset zone
 - pacemaker implanted to prevent the syncopal component of the seizures
- Ictal network hypothesis: propagation to the Insula
 - Connections with the limbic regions could explain the emotionally-charged musical trigger
 - Connections with the autonomic nervous system could explain the ictal asystole