Seizure Disorders and Non-Epileptic Seizures

Franklin King IV, MD
Center for Neuroscience of Psychedelics
Center for Anxiety and Trauma Stress Disorders
Mass General Hospital

Disclosures

Neither I nor my spouse has a relevant financial relationship with a commercial interest to disclose.

Overview

- Seizure Disorders
  - Definitions
  - Psychiatric symptomatology
    - Ictal, Peri-Ictal, Inter-Ictal
  - Treatment
- Non Epileptic Seizures
  - Diagnosis
  - Treatment

Psychiatric Symptoms in Seizure Disorders

- Psychiatric symptoms are common in all phases of seizures
- Anxiety is most common *ictal* phenomenon
- Depression is most common *inter-ictal* phenomenon
- Psychosis is associated with *post-ictal* phase in patients with **chronic** seizure disorder

Seizure Definitions

- *Seizure* is an abnormal paroxysmal discharge of cerebral neurons sufficient to cause clinically detectable events that are apparent to the patient or an observer
- *Epilepsy* is a chronic course of repeated, unprovoked seizures

Seizure Definitions

- *Focal Seizure*—starts in a particular part of the brain (i.e., the *focus*)

- *Generalized Seizure*—involves both hemispheres simultaneously

Seizure Definitions

- *Focal Seizures* (formerly called *partial seizures*)
  - May remain limited to focus (or particular hemisphere) or may spread to other hemisphere known as *secondary generalization*
  - Manifestations depend on part of brain involved
  - Described in terms of how they affect consciousness
    - *Focal Seizures with impairment of consciousness or awareness* (formerly *complex partial seizures*)
      - most common type in adults
      - frequently have associated neuropsychiatric phenomena
      - *Temporal lobe epilepsy* is one example

Seizure Definitions

- *Focal Seizure* manifestations
  - Sensory impairment
  - Hallucinations (gustatory, olfactory, auditory, visual or tactile)
  - Affective symptoms such as fear, anxiety & depression (rage is least common)
  - Automatisms
  - Déjà vu
  - Macropsia, micropsia, dissociation

Seizure Definitions

- *Generalized Seizures*
  - Associated with loss of consciousness or awareness
  - Range from 5-10 seconds of staring spells known as *absence seizures* (*petit mal*)
  - To the longer (3 mins) *generalized tonic clonic* (*grand mal*) which is generally followed by a post-ictal state

Psychiatric Manifestations

- Most common psychiatric manifestations differ in each of 3 seizures phases
  - *Ictal*
  - *Inter-ictal*
  - *Post-ictal*
- Differentiate from primary psychiatric diagnosis
  - proximity to seizure
  - repetitive nature (i.e., seizures generally present with similar symptomatology)

Psychiatric Manifestations

- Ictal
  - Most common with focal seizures (though may also occur with generalized)
    - Fear and anxiety are most frequent
    - Psychosis also seen (especially with *TLE*)
    - Important to distinguish from primary psychiatric disorder
  - Treatment is focused on underlying seizure disorder
    - Adjunctive SSRI's, etc are not often helpful

Psychiatric Manifestations

- *Post-ictal*
  - Post-ictal psychosis comprises 25-30% of psychosis of epilepsy
  - Onset is average of 15-20 years after onset of epilepsy
  - Lucid interval (hours to days) followed by fluctuating:
    - Disordered thought
    - Paranoia
    - Hallucinations (auditory & visual)
    - Mania—grandiosity
    - Behavioral disturbances such as crying, laughing, disinhibition also common
  - Treatment is benzodiazepine +/- antipsychotic

Psychiatric Manifestations

- Antipsychotics with seizures
  - All lower seizure threshold
  - High potency generally less effect on seizure threshold—1st line
  - Atypicals such as risperidone are also okay
  - Clozapine is worst—generally avoid with seizures

Psychiatric Manifestations

- *Inter-ictal* (chronic)
  - **Depression**, anxiety and psychosis are most common
  - Rates of depression and suicide 4-5x greater in those with epilepsy
  - Risk factors include poor seizure control and focal seizure with impairment of awareness
  - Atypical features and/or dysthymia are common
  - Anxiety, panic, OCD may also be seen

Psychiatric Manifestations

- Treatments
  - AED's
    - Lamotrigine, carbamazapine, valproate may help stabilize mood
    - Levetiracetam may cause irritability, worsen mood
    - Phenobarbital and topiramate may also worsen mood
  - Antidepressants
    - SSRI's and TCA's generally safe (avoid clomipramine)
    - Buspirone may lower seizure threshold
    - ECT
    - CBT and other behavioral treatments

Psychiatric Manifestations

- Virtually any psychiatric symptom can be seen with seizure
- Important to treat due to significant morbidity

Non-Epileptic Seizures

- Psychogenic non-epileptic seizures (PNES)
  - Formerly known as *pseudoseizure or hysterical seizure*
  - Occurs in approx 10% of patients with intractable seizures
  - ¾ are women
  - Many have history of sexual abuse
  - 25% have epileptic seizures

Non-Epileptic Seizures

- Distinguishing characteristics
  - Events occur with suggestion/provocation
  - Gradual onset and offset of symptoms
  - Responsiveness during event
  - Weeping, speaking, or yelling during the event
  - Asymmetrical clonic activity
  - Head bobbing or pelvic thrusting
  - Rapid kicking or thrashing
  - Prolonged duration of symptoms (> 3 minutes)
  - No EEG abnormalities during the event

Non-Epileptic Seizures

- Differential Diagnosis
  - **General Medical Conditions**
    - Transient ischemic attack (TIA)
    - Complicated migraine
    - Syncope
    - Hypoglycemia
    - Narcolepsy
    - Myoclonus (from metabolic disturbance)
  - **Psychiatric Causes**
    - Conversion disorder
    - Somatic symptom disorder
    - Dissociative disorder
    - Panic disorder (simulating partial seizures)
  - **Volitional Deception**
    - Factitious disorder (goal is to maintain the sick role)
    - Malingering (goal is to obtain secondary gain, e.g., disability income)

Non-Epileptic Seizures

- Presentation of diagnosis
  - Frame diagnosis positively (e.g., “no abnormal electrical activity, no need for AED’s”)
  - Frame spells as *functional* problem
  - Set the frame that symptoms will improve over time (less frequent, less severe, etc)
  - Introduce the fact that stress and anxiety may make symptoms worse
  - Acknowledge disability caused
  - Describe treatment plan involving multiple specialities

Non-Epileptic Seizures

- Treatment
  - Introduce as much psychiatric care as patient will allow (e.g., weekly therapy, psychoeducation, CBT)
  - Treat adjunctive symptoms
  - Regular appointments with neurology and PCP
  - Regular physical exam, avoid diagnostic procedures
  - Positive reinforcement when symptoms subside (i.e., continue treatment)
  - Remain vigilant that epileptic seizures may be missed or may co-occur

Conclusion

- Both epileptic and non-epileptic seizures may present with psychiatric symptomatology
- As psychiatrists, we play a key role in multiple domains:
  - Recognizing potential epileptic seizures and referring to colleagues in neurology
  - Treating inter-ictal and peri-ictal phenomena
  - Diagnosing and being a key part of the treatment team in those with non-epileptic seizures