Sex and Gender Differences in Psychogenic Non-epileptic Seizures

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Case Overview

(*Case created as an illustrative example)

Psychogenic non-epileptic seizures (PNES) are paroxysmal events that resemble epileptic seizures but are not associated with changes in cortical activity. The etiology of PNES is not well understood, and its diagnosis and treatment remain a clinical challenge.

Chief Complaint

“I keep having these staring spells.”

History of Present Illness

Mrs. K is a 36-year-old female who presents today with new onset of seizures. These episodes began two weeks ago in the context of starting a new job at a corporate law firm and subsequent stress with adjusting to her new 90-hour work schedule. According to family members, the episodes consist of staring spells that last for several minutes with mild shaking in her right arm. She has no recollection of these events and states that stress and exhaustion increase her seizure frequency. On average, she is experiencing 5-10 episodes daily. She claims that the seizures are interfering with her job and expresses concern that she will become unemployed if she does not gain control over her seizures. She lives with her 6-year-old daughter and husband, who is currently unemployed.

Past Medical History

- PMH: Generalized Anxiety Disorder (GAD), Post-traumatic Stress Disorder (PTSD)
- Prior surgeries: None
- Prior hospitalizations: None
- Medications: Sertraline (50 mg)

Family History

- Mother: 60-years-old – depression diagnosed 10 years ago
- Brother: 32-years-old – ADHD diagnosed 20 years ago
- Father: 65-years-old – no significant history

Social History

- Past Trauma/Abuse: Sexual, verbal, and emotional abuse from past partner in college
- Tobacco use: none

- Alcohol: none

Physical Exam

- General Appearance: Patient is well-nourished and looks stated age. Appears comfortable and is no acute distress.
- Neurological Exam: Cranial nerves II-XII symmetric and intact bilaterally. 5/5 strength in all 4 extremities. Sensation intact to light touch throughout. Cerebellar exam reveals normal finger to nose, rapid alternating movements, and heel to shin. Gait evaluation reveals toe, heel, and tandem walk within normal limits. Reflexes are 2+ and symmetric in the biceps, triceps, brachioradialis, patellar, and Achilles tendons. Down-going Babinski, no clonus bilaterally. Negative pronator drift and Romberg.

Diagnosis

Psychogenic non-epileptic seizures (PNES)

Treatment

The patient was counseled on sleep hygiene and referred to outpatient cognitive behavioral therapy (CBT). Further work-up with video-EEG will be conducted to confirm diagnosis.

Discussion

Psychogenic non-epileptic seizures (PNES) occur more frequently in women than in men, accounting for approximately 80% of all cases.[1] Several factors may explain this trend – first, PNES often occur with comorbid psychiatric disorders, typically depression, anxiety, post-traumatic stress disorder (PTSD), and personality disorders, which are more commonly diagnosed in women.[2] Trauma history, including sexual, physical, verbal, and emotional abuse, is also a major risk factor for PNES. Not only are these adverse events more prevalent among women, but they are also more likely to be reported by women compared to men. Recent neurobiological research suggests that women with a past trauma history are more likely to experience abnormal connectivity between brain areas involved in emotional processing, cognitive integration systems, and motor/pre-motor regions, which may explain an underlying vulnerability to PNES for women compared to men.[3]

Because men are less likely to utilize healthcare services, diagnosing PNES in this population may be particularly challenging. The gold standard for diagnosing PNES is with video-EEG. When video-EEG reveals no epileptiform activity before, during, or after ictus, a diagnosis of PNES can be made definitively.[1] It has been postulated that PNES may in fact be underdiagnosed in men. One study found that video-EEG confirmed PNES was accurately predicted in 86% women versus 61% men.[4] Another study comparing male veterans with PNES to those with epilepsy found that ~40% of male veterans with seizure symptoms were diagnosed with PNES – a larger percentage than is currently recognized in the clinical community.[5] Although rates of PNES differ between men and women, recent literature suggests that seizure semiology is similar, with both groups experiencing similar rates of major motor, minor motor, and non-motor seizure episodes.[6] The fact that men experience similar seizure severity and

symptoms as women with PNES warrants particular emphasis, especially since PNES are more challenging to diagnose in men.

In addition to diagnosis, treatment for PNES also poses a current clinical challenge. Successful treatment often includes both pharmaceutical and behavioral interventions, namely therapeutic doses of sertraline, a selective serotonin reuptake inhibitor, and cognitive behavioral therapy (CBT). In a randomized clinical trial, it was found that 60% of patients who received both CBT and sertraline interventions experienced a decrease in seizure severity and frequency, compared to 50% of patients who received CBT-only treatment. Patients receiving only sertraline for treatment showed no reduction in seizures.[7] Male patients are less likely to seek behavioral and mental health interventions, perhaps due to traditional gender norms of masculinity.[8] The fact that psychotherapy plays such a significant role in treating PNES suggests that female patients are more likely to seek CBT and experience improvement of their seizure symptoms compared to men.

The etiology of PNES currently remains unknown, and similar to the historical diagnosis of hysteria, unexplained symptoms in women often become relegated to the psychiatric realm until further clinical knowledge is uncovered to explain these symptoms.[9] Although PNES is traditionally thought of as a “female diagnosis,” it is important to recognize that PNES are underdiagnosed and undertreated in men. Understanding this discrepancy will yield better clinical care, reduce health care costs, and ultimately improve knowledge of how neuropsychiatric conditions can manifest across the sex and gender spectra.

References

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