Symptoms that mimic epilepsy linked to stress, poor coping skills

Based on their clinical experience and observations, a team of Johns Hopkins physicians and psychologists say that more than one-third of the patients admitted to The Johns Hopkins Hospital's inpatient epilepsy monitoring unit for treatment of intractable seizures have been discovered to have stress-triggered symptoms rather than a true seizure disorder.

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These patients - returning war veterans, mothers in child-custody battles and over-extended professionals alike - have what doctors are calling psychogenic non-epileptic seizures (PNES). Their display of uncontrollable movements, far-off stares or convulsions, Johns Hopkins researchers say, are not the resul of the abnormal electrical discharges in the brain that characterize epilepsy, but instead appear to be stres related behaviors that mimic and are misdiagnosed as the neurological disorder.

One potent clue, the researchers note, is that antiseizure medications fail to stop these patients' symptom suggesting nothing is physically wrong with their brains' electrical activity. The researchers also say the diagnoses appear to be on the rise, at least by what they have seen in recent months.

Conversion disorder

In the past, behaviors like PNES were called "hysteria." Now they are often considered by psychiatrists as part of a "conversion" disorder, in which the patient unconsciously converts emotional dysfunction into physical symptoms. In some cases, those afflicted have become paralyzed or blind because of emotiona trauma. People at risk for pseudo-seizures are typically highly suggestible, the Hopkins scientists say, whi is why physicians often have tried not to publicize or draw attention to the condition. In recent months, headlines out of Western New York have described a group of more than a dozen female high school students who experienced uncontrollable tics and other movements, which many experts now believe are manifestations of a "contagious" psychiatric rather than neurological disorder.

In a new study, a team of neuropsychologists and neurologists at the Johns Hopkins University School of Medicine suggest that people with PNES don't necessarily experience more frequent or severe stressful events than people with epilepsy or neurologically healthy people. However, they seem to lack effective coping mechanisms necessary to deal with those stresses and feel more distressed by them.

"These patients behave as if they have an organic brain disease, but they don't," says Jason Brandt, PhD, the study's senior investigator and a professor of psychiatry and behavioral sciences and neurology at the Johns Hopkins University School of Medicine. "And it turns out that their life stresses weren't all that high, b they're very sensitive to stress and they don't deal with it well."

Simulate, susceptibility study

The Johns Hopkins researchers say they undertook the new study in an effort to learn why "psychogenic" symptoms so closely simulate a physical disorder and why some people are more susceptible to these behaviors than others. Clearly, not every overwhelmed person develops seizure symptoms, they note, nor it known how many people experience pseudo-seizures.

For the study, published online in the journal Seizure, the researchers evaluated 40 patients with PNES, 2(people with epilepsy and 40 healthy control volunteers, all of whom were asked to report the frequency of various stressful life events (both positive and negative) over the previous five years. The research subjec then appraised the distress these events induced. Each group reported roughly the same number of stressful events, but the PNES group reported much higher distress levels than the other two groups. The researchers found that the PNES group was less likely to plan a course of action to counter stressful life events. Those who used denial - the failure to acknowledge stressors - experienced greater distress than those who did not, illustrating the ineffectiveness of denial as a way of warding off anxiety, Brandt says. Along with seizure symptoms, patients with PNES often have other problematic behaviors and unstable relationships. Many remain occupationally disabled and have high health care expenditures, even years aft the non-epileptic nature of their events is identified, the authors report.

Unnecessary costs

The costs of believing you have epilepsy when you don't are high, Brandt notes. Financially, there are the costs of doctor visits, medication that doesn't work and hospitalizations in specialty units like Hopkins' epilepsy monitoring unit (EMU). In the EMU, patients are hooked up to both a video camera to capture the onset and characteristics of a seizure and an EEG (an electroencephalogram) that monitors the electrical signals of the brain. Sensors attached to the scalp check for alignment of seizure behavior and abnormal electrical discharges in the brain. There are also psychological and social costs of having disabling seizure that can't be controlled.

Gregory L. Krauss, MD, a professor of neurology at Johns Hopkins and one of the study's co-authors, say he is surprised by how many patients are being referred to his epilepsy unit without having epilepsy at all. And the numbers appear to be growing. He says that in recent months, as many as half of those referred t the unit have pseudo-seizures.

"Software glitch"

When the team discovers individuals who, using a computer analogy, don't have a hardware problem but a software glitch, they get the good news. Often, Krauss says, symptoms go away quickly. But, Brandt says, such patients often need cognitive behavior therapy to help them develop more effective coping skills.

"There's a lot of stress out there in our modern society, and this research highlights that many people don' have the skills to cope with that," Krauss says.

People with PNES can spend years in treatment for epilepsy, say Krauss and his colleagues, who also report that neurologists may be misdiagnosing PNES patients by misreading their EEGs. In a study of 46 patients, published in the journal Neurology in 2005, the patterns seen on 54 percent of EEG readouts we misinterpreted as epilepsy. Krauss says patients often will come to him already having been told by a neurologist that their EEG shows they have epilepsy.

Another report by Krauss in Neurology, published in 2007, looked at the use of service dogs trained to assist patients with epilepsy. The researchers determined that four of the six patients in the study actually had PNES and not epilepsy, and by alerting patients to an oncoming seizure, the dogs may instead have been perpetuating the pseudo-seizures by putting the idea of them into the minds of those with PNES. Th dogs are trained to anticipate overt behavior and presumably cannot distinguish between PNES and true seizure disorders.

"We're just seeing a large number of these patients, and we'll probably see more of them," Krauss says.

Ronald P. Lesser, MD, and S. Marc Testa, PhD, both of Johns Hopkins, also worked on the newest study.

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