The Successful Treatment of Psychogenic Nonepileptic Seizure Using a Disorder-Specific Treatment Modality

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Treatment for psychogenic nonepileptic seizure (NES) typically consists of psychopharmacological intervention and psychotherapy. Psychotherapy is believed to be effective in identifying the etiology of the disorder and treating disorder-related comorbidities. However, there is as of yet no clear consensus on the psychotherapeutic methodology most effective in treating NES. In the current case report, group psychotherapy utilizing psychoeducation was employed. Results show clear declines in symptoms of trauma and dissociation and improved coping strategies and quality of life.

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A nonepileptic seizure (NES) is a clinical event that resembles an epileptic seizure but is not associated with electroencephalographic changes. NES combines both physical and emotional phenomena, thus requiring a multidisciplinary team for adequate diagnosis and treatment. Over the years, diverse labels have been used to describe such events, including hysterical epilepsy, pseudoseizures, pseudoepileptic seizures, psychogenic seizures, and nonepileptic seizures. The present rationale is to use a term that is descriptive, yet nonjudgmental. The term non-epileptic seizure (NES) achieves this goal.

The electroencephalograph (EEG) is the gold standard for the diagnosis of NES. When the patient’s typical seizure occurs without the expected changes on EEG, a diagnosis of NES is established. The prevalence of the disorder is unclear, although 5–20% of persons who come to an outpatient epilepsy clinic are thought to have NES (Lempert, Dietrich, Huppert, & Brandt, 1990). Prevalence is higher (10–40%) amongst those undergoing inpatient epilepsy monitoring.

NES has been associated with higher than expected rates of physical and sexual abuse (Alper, Devinsky, Perrine, Vazquez, & Luciano, 1993). Psychogenic NES has been associated
with affective and personality disorders (Ramani, 1991), while NES may fit under definitions of conversion or somatoform disorder in the *Diagnostic and Statistical Manual of Mental Disorders, fourth edition*.

### Theoretical Interpretation of Nonepileptic Seizure

A variety of theoretical interpretations can be employed in explaining the etiology of NES. From a psychodynamic perspective, unconscious conflicts, often suspected to be sexual in nature and strongly associated with unbearable feelings of shame and guilt, produce NES in the form of pelvic thrusting, the “mea culpa” sign, and tearfulness. When unsettling current events endanger the person’s psychic stability, a compromise is made whereby unconscious content is expressed in a symbolic and unconscious manner.

From a learning theory perspective, NES is a learned response to traumatic experiences and/or a lack of emotional containment from caretakers. Repeated exposure to overwhelming experiences leads to dissociated and poorly modulated emotions. NES is triggered by environmental or emotional stimuli that intensify autonomic arousal.

### Treatment of Nonepileptic Seizure

NES treatment has been reported most effective when linked to an epilepsy program (Aboukasm, Mahr, Gahry, Thomas, & Barkley, 1998). Based on clinical and research reports to date, LaFrance and Devinsky (2002) suggest the use of a multidisciplinary neuropsychiatric team in assessing and treating NES:

1) The initial step involves proper diagnosis: Video-EEG monitoring is recommended in individuals suspected of having NES or experiencing refractory or pharmaco-resistant seizures.

2) Presentation: Following diagnosis, the provision of an explanation of NES in clear and nonpejorative terms is critical. Timely presentation by the treating neurologist and provision of information concerning the psychological origins of the disorder are believed to play key roles in the cessation of further events. Communication of the diagnosis in unambiguous terms to the referring physician and explanation of the need to eliminate unnecessary medications should also be provided.

3) Psychiatric treatment: Thorough psychiatric assessment is needed to identify predisposing factors, including premorbid psychiatric disorders, seizure precipitants, and perpetuating factors. Psychotherapy, initially consisting of in-depth education about the disorder, should also be initiated.

Although psychological treatment is a crucial component of NES treatment, no specific psychotherapeutic approach for psychogenic nonepileptic seizures has been developed. Existing treatment options include individual psychotherapy, usually cognitive-behavioral; individual case management; family therapy (Griffith, Polles, Griffith, 1998); and biofeedback (Swingle, 1998). Unfortunately, many clinicians are not familiar with the disorder, and at times may even question the validity of the diagnosis, producing a setback in the patient’s recovery.

Rusch, Morris, Allen, & Lathrop (2001) divided patients with NES into six subgroups according to psychosocial history, NES mechanisms and etiology, and psychotherapy response. Subgroups, which focused on symptoms of acute anxiety/panic, impaired affect...
regulation and interpersonal skills, somatization and conversion tendencies, depression, posttraumatic stress disorder (PTSD), and reinforced behavior patterns, were not mutually exclusive. Rusch et al. reported that 64% of patients were event free over the course of 2 to 30 treatments. The anxiety group responded to cognitive therapy and exposure-based procedures. Exposure-based therapies were most effective with the PTSD group. The somatization group responded to psychoeducation and insight-oriented psychotherapy. Presumably, treatment was adjusted to the disorder subtype. Gates (1998) suggested psychiatric treatment based on NES chronicity, specifically recommending short-term psychotherapy for individuals with less than a 6-month history of NES. In the study by Prigatano, Stonnington, and Fisher (2002), two NES patient groups underwent 6-month group psychotherapy, with a 58% completion rate. Of those 58%, 66% reported a decline in seizure frequency.

Outcome measures for NES treatments are almost always discussed in terms of seizure reduction. Other outcome measures, such as quality of life, stress coping style, and level of psychopathology, are of considerable importance but have been much less the focus of attention. Additional outcome measures are critical because even with seizure cessation, other psychiatric disorders may persist and new pseudoneurological symptoms may emerge, resulting in high levels of disability.

Given the lack of a clearly defined treatment strategy for patients with NES and an absence of universally accepted outcome measures, the goal of the current report was to provide a detailed treatment plan along with results on pre- and posttreatment measures to help define treatment efficacy. This report focuses on the results achieved in one individual utilizing a treatment specifically designed for this disorder. Premorbid factors are also reported.

Methods

Subject Selection and Treatment

At the Comprehensive Epilepsy Center within New York University Medical Center, the staff psychologist and neuropsychiatrist contacted the subject after a diagnosis of NES was made but prior to the subject’s discharge from the video-EEG monitoring unit. The subject was enrolled in a time-limited (10-week) group psychotherapy treatment program concurrent with an ongoing and more long-term course of individual psychotherapy. Both forms of treatment were provided by clinical neuropsychologists. Group psychotherapy consisted of a structured 10-week program of hourly psychoeducation sessions. At the onset of each session, the subject and other group members were provided handouts on the day’s topic, which was then read aloud by group coleaders. Patients were encouraged to discuss issues at any point during sessions. Two final sessions were allotted for topic review. Individual sessions were devoted to NES, anger, trauma, comorbidities, somatization, quality of life, paths toward health, and stress coping mechanisms.

Outcome Measures

Seizure frequency was measured prior to and following the 10-week group psychotherapy regimen. Questionnaires were used to provide additional information about subject variables and treatment efficacy. All questionnaires were completed during the first group session prior to the onset of therapy and following the final therapy session, with the exception of the RAND 36-item Health Status Inventory (R36 HSI) (Hays, 1998), which was given at posttreatment only. Questionnaires were chosen to assess domains thought to be salient in NES. Given the finding that traumatic experiences...
may have a precipitating role (Griffith et al. 1998), the Davidson Trauma Scale (DTS) was administered (Davidson, 1996). The lack of coping strategies and emotional modulation that often accompany NES (Gates & Endval, 1993) led to the administration of the State-Trait Anger Expression Inventory—2 (STAXI-2) (Spielberger, 1999) and the Coping Inventory for Stressful Situations (CISS) (Endler & Parker, 1999). The STAXI-2 measures anger experience and expression, while the CISS is a multidimensional coping inventory. Dissociation, along with conversion disorder, is a common presenting symptom in NES (Prigatano et al., 2002). The Curious Experiences Survey (CES) (Goldberg, 1999) was given to assess dissociative symptomatology. Lastly, individuals with NES typically have reduced quality of life (Quigg, Armstrong, Farace, & Fountain, 2002). The 31-item Quality of Life in Epilepsy scale, version 1.0 (QOLIE-31) (Vickrey et al., 1993), and the R36 HSI were chosen to assess quality of life. The QOLIE-31, normed on 304 adults with epilepsy, was administered with minor alterations. The word epilepsy was changed to seizures on items 19, 20, and 31. The QOLIE-31 was used to compare current functioning with that of an epilepsy sample, while the R36 HSI was used to compare quality of life with a nonclinical sample.

The Case of Ignacio: History of Presenting Problem

Ignacio was admitted to the hospital for continuous video-EEG monitoring to characterize several seizure-like events that began approximately 8 months prior to his admission. The initial event lasted 3 hours and involved nearly continuous yelling. Four other subsequent events occurred, all involving generalized convulsions, yelling, and a complete retention of consciousness. A fluctuating hot/cold bodily sensation, blurred vision, and headaches also accompanied these events, which could vary in duration from 15 minutes to 2 hours and were followed by a longer period of exhaustion.

Diagnosis of Ignacio

While hospitalized, Ignacio produced one of his typical events that lasted almost an hour, characterized by loud yelling, pelvic thrusting, crying, and shortness of breath. During the event, Ignacio beat his chest with his fist. No EEG changes typically associated with an epileptic seizure were recorded and a diagnosis of NES was subsequently made. Ignacio was informed of the diagnosis by his neurologist. He was visited by the first author (L.M.) hours after receiving a diagnosis. He appeared shocked, embarrassed, and confused about the diagnosis provided. The disorder was explained as a “conversion” of intense emotions into physical symptoms. Surprisingly, even though he had denied any stress or emotional difficulties prior to the diagnosis, he soon began volunteering such information. In fact, he recalled that his first event was subsequent to the attacks on the World Trade Center (WTC), during which time he had been working nearby in downtown New York City. On September 11, 2001, he was within walking distance from his place of employment when he was engulfed by people running away from the advancing cloud of smoke. He also ran away, but then, amazingly, he returned to his office several blocks from the WTC in a “state of hysteria.” He managed to calm himself and left for the gym to do his usual workout. He stayed there all afternoon and did not think any more about what had happened that day. When sharing this experience, he seemed shocked that he had been able to disconnect himself so completely from the events of that day.

Ignacio’s prior psychiatric history included a month of psychotherapy in the context of
bereavement. During psychotherapy, he was taught relaxation techniques that he reported were useful. Psychotherapy was discontinued following resolution of bereavement.

**Ignacio’s Social History**

The youngest of three children, Ignacio was born and raised in a Latin American country. He described his family as working class, residing in the same small rural town for generations. He was the first in his family to complete college, live abroad, and now, undertake graduate studies.

Ignacio described himself as highly sensitive and excitable as a child. From a very early age, he would fly into fits of excitement if an emotional event were imminent. For example, when a relative died, his excitement was such that an ambulance was called and he required sedation with medication. In fact, his responses to major news were so extreme that his family often opted to conceal information from him. His memories from school were noteworthy for intense stomach pains that required doctor’s visits and numerous physical examinations.

Ignacio described his mother as unconditionally supportive and his relationship with her as intense. His father was absent for long periods of time due to work, and when he was home he seemed more connected to his older son. Ignacio reported being much closer to his sister and grandmother than to his brother and grandfather.

Ignacio’s experience growing up in his hometown was mixed. On the one hand, he felt close to his culture and it seemed familiar, but on the other hand, he had always felt somewhat of a rejected outsider, at times violently marginalized and targeted. He was very sensitive and gentle, characteristics that were not the norm in most of his male peers. He also demonstrated excellent scholastic abilities. He learned to avoid most of the boys in his school and became good friends with several girls, some of whom he remains close with to this day.

As a result of his academic skills, Ignacio won a scholarship, allowing him to travel and live abroad. He first moved to a country that had a markedly different culture from his own, where he experienced intense culture shock and a number of hurtful experiences. At that time, migraines and other physical pain were persistent. A few years later, Ignacio moved to New York City, where he felt more comfortable. However, he continued to experience interpersonal difficulties, particularly in situations involving confrontation and anger.

**Treatment of Ignacio**

Ignacio, along with four other individuals who had recently received a diagnosis of NES, were enrolled in a time-limited (10-week) treatment program involving a simultaneous combination of group and individual psychotherapy. The theoretical approach used in individual psychotherapy with Ignacio was integrative, combining psychoeducation about NES with a psychodynamic foundation. Individual psychotherapy was embedded within a bicultural/bilingual perspective. In this weekly setting, Ignacio was able to access memories of childhood abuse, experiences in interpersonal relationships including feelings of sexual fluidity, and experiences as an immigrant in New York City. The psychotherapist’s bilingual/bicultural status was an important component of treatment, as it provided Ignacio the opportunity to share experiences in either language and the chance to speak to someone who was somewhat familiar with his cultural background and the experience of migration.

Group psychotherapy had a psychoeducational focus, providing information about NES and its etiology, seizure triggers, and comorbid psychopathology associated with NES.
The psychoeducational sessions later became devoted to problem solving and stress and anger management. Time was allotted for group discussions and processing. The group setting also helped to underscore the universality of the disorder.

Ignacio began individual psychotherapy the week after he received a diagnosis of NES. Group psychotherapy began 2 months after a diagnosis was given.

**Individual Psychotherapy**

During the first few individual psychotherapy sessions, Ignacio processed his reaction to not having epilepsy and to having a disorder that he did not quite understand. Information on the disorder was provided. Ignacio seemed comforted knowing that he would be part of a group of individuals with the same disorder. During one of the earlier sessions, he mentioned experiencing a feeling of panic on the subway when the train was stopped for an emergency. He was quite distressed at that time and could not explain the cause of such an intense reaction. It was not until the following session that he was able to associate this experience with a similar episode in his country of origin years ago, when he had been the victim of a terrorist attack. During that earlier event, the train he was in had filled with smoke and all of the passengers were evacuated. He recalled fearing for his life. He made a connection between this event and his experience during the attack on the WTC. Over the next few weeks, he became able to recognize in advance situations that were anxiety provoking and soon stopped having panic attacks.

During the next three sessions, Ignacio reported vivid nightmares involving feelings of intense guilt and a sense that he had committed a terrible crime and was going to be punished. Women were depicted as either dangerous witches or vulnerable children in need of protection. In one particular dream, his entire family was enraged at him and chased him from the family home. These dreams were interpreted to be representative of conflicts in male and female relationships and a “secret” that he was keeping from his family. He recognized his fluid sexual identity in sessions and his fears about how women would react to such information. These concerns led to a discussion of his childhood experiences in school. He shared his recollections of being brutally bullied throughout his 12 years in school. No one in his family had ever defended him from these attacks or reported them to his school, despite his repeatedly coming home with multiple cuts and bruises. Over the next few sessions, he expunged these memories of abuse, victimization, and neglect and the general sense of being an outsider.

As Ignacio reviewed these memories and shared them for the first time (he had always been too embarrassed), he gained a sense of relief and confidence. He made connections between these memories and his present difficulties in confrontational situations. He analyzed his own present and past relationships with women and men and in particular reflected on how others had perceived him. As he gained a sense of peace with his culture of origin, he was able to join a cultural group from his homeland, within which he felt contained and with whose members he was able to identify. He began dating a woman with whom he wanted to progress slowly, unlike many of his other relationships. He was also making important strides in his academic undertakings and experiencing a greater satisfaction with his life overall.

**Group Therapy**

During the first group session, Ignacio seemed especially interested in the definition of NES, as he had encountered difficulty in
explaining it to others. In that week’s individual session, he was ecstatic about the group session. It triggered a discussion of the difficult relationship he had always had with his father, his bisexual tendencies, and his experiences of childhood bullying. He decided to speak openly to his parents about some of these topics.

After attending the group session in which anger was discussed, Ignacio spoke about his experience with anger expression in his culture of origin and in two other cultures. He became aware of his own conflicted feelings between aggression and victimization.

During the group session in which trauma and abuse were discussed, Ignacio shared with the group his history of being verbally and physically bullied as a child, topics he had previously discussed only with his individual psychotherapist (L.M.). He expressed a feeling of relief, and a few weeks later discussed the same topics with his parents. His parents reported being unaware of these events but expressed sadness at their occurrence, a response that satisfied Ignacio.

During the group session focusing on anxiety and depression, Ignacio shared his long history of anxiety, particularly in regard to confrontation. In his individual psychotherapy session, he made the connection between his traumatic history and his history of excitability and panic, feelings he no longer experienced.

Near the end of the group treatment, Ignacio shared with others his empowerment at recognizing his own negative feelings, such as sadness or nervousness. Instead of avoiding such feelings, as he had done previously, he began allowing himself to experience and process these feelings, leading to overall improved mental health.

By the last group session, Ignacio had not experienced any NES since receiving a diagnosis. He spoke of a near NES during an extremely stressful event, which he was able to prevent by confronting the source of stress, a technique learned in treatment.

Results

This combined group/individual treatment modality focusing specifically on the disorder of NES proved to be highly effective, as reflected by the subject’s sense of improvement, increased quality of life, and a complete cessation of seizures. In a follow-up consultation visit several months later, gains were reported to be maintained.

Questionnaire data were used to supplement qualitative reports of patient improvement (Table I). On the QOLIE-31, on which higher scores reflect better quality of life, pretreatment scores on the scales for seizure worry, emotional well-being, and social function were near the mean of the epilepsy control group, indicative of significant seizure-related anxiety. Following treatment, almost all scores increased and none fell less than one standard deviation above the mean, indicating an absence of seizure-imposed concerns on physical and emotional health.

Quality of life in comparison with a population of normal controls was also examined using the R36 HSI. Posttreatment T-scores on the physical, mental, and global health composites were all above 50. Such scores were obtained by approximately 50% or more of the normative nonclinical sample and reflect intact quality of life across three main domains of health.

On the STAXI-2, pretreatment elevations were evident on the Anger Control–Out (AC-O) and Anger Control–In (AC-I) scales. Elevation on the AC-O scale reflects an attempt to monitor and prevent the expression of anger. An elevated score on the AC-I scale reflects attempted anger reduction. A low score on the Trait Anger scale (T-Ang) was exhibited, further indicating an attempt to limit the experience and/or expression of anger. Following treatment, an increase in
elevation occurred on the AC-O and AC-I scales, suggesting even greater tendencies toward anger control/prevention. However, a previously average range score on Anger Expression–Out (AX-O) became clinically significant, indicating an increased tendency to express anger externally.

On the CISS, Ignacio’s score decreased from average to much below average on the emotion scale, reflecting a decrease in self-oriented stress coping mechanisms. A corresponding increase in task coping style was observed, from below average to much above average, reflecting an increase in direct and effective problem-solving approaches such as planning. An increase from slightly above average to very much above average occurred on the avoidance scale. While such an increase can indicate an avoidance of stressful situations, there was an accompanying increase in both scale components (i.e., distraction and social diversion).

Thus, an interpretation of the change in scores may be that there has been an attempt at stress reduction via both social and task diversions.

On the DTS there was a decrease in the total score, encompassing scales for intrusion, avoidance/numbing, and hyperarousal. Posttreatment, a decline in the likelihood of having PTSD was evident in scores on the DTS table. For example, only about 4% of individuals without PTSD produce scores equal to or greater than that obtained pretreatment by Ignacio. In contrast, a score equal to or greater than that obtained posttreatment is typically obtained by about 49% of individuals without PTSD.

On the CES, the pretreatment score fell in a range obtained by only 18% of the normative nonclinical sample. In comparison, the posttreatment score fell in a range obtained by 79% of the normative nonclinical sample.

**Discussion**

From a psychiatric perspective, Ignacio fell in the realm of anxious symptomatology with
a lifelong tendency toward not only anxiety but also hyperexcitability. His history of chronic physical and verbal abuse throughout childhood, compounded by two petrifying encounters with terrorism, laid the foundations for a profound anxiety disorder. Ignacio exhibited a striking ability to dissociate from any negative feelings. This was clear during the attacks on the WTC. Such was his disconnection from the attacks that he had not even thought to mention them when asked about possible stressors in relation to the development of NES. Ignacio had a number of symptoms suggestive of PTSD, including hyperarousal, sleep difficulty, irritability, hypervigilance, an exaggerated startle response, and difficulty concentrating. Reexposure to traumatic events was associated with intense psychological distress and physiologic reactivity.

Learning about NES and its precipitants enabled Ignacio to review his personality and life. There was a sense of liberation once he acquired an explanation for the pain and unhappiness he had carried inside, and an understanding of the mystifying events he was experiencing. From this perspective, his history of migraines, stomach pains, and panic attacks was also more comprehensible.

In terms of identity formation, through therapy Ignacio was able to better understand his self-image. He was able to recognize and share numerous experiences in which he had been rejected, ostracized, and abused by others. He grew to understand that his upbringing had occurred in a culture in which what was expected of a man was of a more brutal and exacting nature than he could achieve. Since he did not fulfill such criteria, he had been punished repeatedly. Although he had a firm grasp on his gender identity, there seemed to be fluidity in his sexual orientation. Over the years, he had been painfully rejected both by men and women. His feelings were poorly modulated, some remaining disconnected while others were overwhelming. He often missed social cues, leading to surprising abandonment and rejection by others. This added to his sense of being unacceptable to others and to a general sense of confusion and unhappiness. Positive contributions to Ignacio’s self-image were provided by his mother and other female family members. In addition, his academic achievements produced very positive feedback and allowed him to gradually create a new identity as a highly educated, worldly young man.

Following participation in the treatment program, an improvement in social relations was noted. The integration of positive and negative feelings and the ability to experience and not deny such feelings led to a greater understanding of the roots of such feelings, which in turn produced a sense of control and greater self-knowledge. As part of this process, interpersonal relationships improved and intimacy became more comfortable. Learning to confront others assertively where appropriate prevented anger buildup and resentment, contributing to healthier and more enjoyable relationships.

The final stages of therapy were especially important, as Ignacio was able to perform a final integration of himself as someone who came from a rural Hispanic background but was now a professional in a large American city. He was also able to see himself as someone with fluid sexual identity. He achieved an integration of self and shared this with his family, which did not result in an expulsion from his family, as had happened in a prior dream. Confronting his family with his history of abuse was a major breakthrough. A consultation visit following treatment termination revealed maintenance of positive life changes. Ignacio had no additional NES events and indicated that his quality of life had continued to progress in a positive direction.
References


