The Role of Hypnosis in the Detection of Psychogenic Seizures

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In this preliminary clinical investigation, hypnosis was used in the differential diagnosis of epileptic versus psychogenic seizures (PS). Eight patients with a clinical profile suggesting the presence of PS were given a hypnotic suggestion in which they had to go back in time to the exact moment of their last seizure. They were then asked to concentrate their attention on any unusual feeling or bodily sensation. All 8 patients presented a PS during the age regression protocol. In 6 cases, independent testimony from family members corroborated the morphological similarity of the induced attack and the ones presented in their natural environment. Also, the seizures ended abruptly after a command was given to stop them. A control group of 5 epileptic subjects did not present any signs of discomfort or seizure behavior during the hypnotic protocol. It is argued that a simple procedure as the one described in this investigation can be useful as a diagnostic tool in the differentiation of epileptic from PS attacks.

Key Words: Psychogenic seizures, epilepsy, trauma, dissociative disorder

Introduction

Psychogenic seizures (PS) of the type described are usually defined as paroxysmal episodes of nonepileptic origin resembling epileptic seizures. Yet, they lack the associated clinical or electrographic features of epileptic seizures. PS have been reported to occur anywhere from 5% to 20% of outpatient epilepsy populations and from 20% to 40% of patients presenting to tertiary care (Alper, 1994; Riley & Berndt, 1980). It is estimated that between 15% to 20% of patients with PS will also present epilepsy (Gates, 1998; Lesser, 1985). There is abundant evidence that many patients with PS have been treated unsuccessfully as epileptic patients. Patients with unrecognized PS are liable to the iatrogenic hazards of inappropriate treatment with anti-convulsant drugs, complex chronic anti-convulsant regimens, or even general anesthesia or intubation in attempts to curtail their manifestation.
PS patients can present a wide variety of psychiatric disorders, among them panic disorder, post-traumatic stress disorder, hypochondriasis, factitious disorder, conversion disorder, and dissociative disorders (Gates, 1998). There is wide agreement that the last two clinical conditions are the most frequently diagnosed in PS patients. If the most prominent clinical profile concerns loss of control of motor functions, PS can be diagnosed as a conversion disorder. If alterations in memory, consciousness, perception or identity are predominant, one might classify it as a dissociative disorder (Bowman & Markand, 1996; Devinsky, 1998; Kuyk, van Dyck & Spinhoven, 1996).

Recent studies also highlight the fact that many patients with PS report various types of psychosocial traumas. For example, several studies connect PS with sexual conflicts or abuse (Betts & Boden, 1992; Bowman, 1993; Bowman & Markand, 1996, 1999; LaBarbera & Dozier, 1980; Goodwin, Simms & Bergman, 1979; Gross, 1979; Kanner et al., 1996; Kuyk et al., 1999; Reilly et al., 1999). In four recent studies, investigators compared the frequency of a history of sexual or physical abuse in epileptic versus PS patients. In all of them, a history of such trauma was significantly higher in the PS patients (Alper et al., 1993; Arnold & Privitera, 1996; Kuyk et al., 1999; Reilly et al., 1999). In the Alper et al. (1993) study, the severity of sexual abuse was significantly greater in the PS group.

The possible link between conversion or dissociative disorders and a history of trauma or adversity is consistent with a wealth of empirical findings where it is posited that many patients with physical or sexual abuse use dissociative defenses to counteract their traumas (Brenner, 2001; Briere, 1992). Also, it had been suggested that such somatic symptoms could function as a cultural idiom of distress (Lewis-Fernández, 1994).

There is abundant evidence that PS can represent a difficult diagnostic dilemma to many clinicians, including neurologists (Massey & Riley, 1980; Riley & Brannon, 1980). In a thoughtful review of the literature, Lesser (1985) estimated that admitting physicians correctly classified psychogenic seizures in only 50% of cases. This situation is usually complicated by the fact that about 10% to 20% of patients with PS also present epileptic seizures (Lesser et al., 1983). Attempting to differentiate a PS from epilepsy is a complex issue as there are no golden rules to go by in attempting such a differential diagnosis.

When the clinician is in doubt, a reasonable course of action is to include simultaneous video-EEG monitoring as part of the overall assessment of the patient (Rankin et al., 1996). If no epileptiform activity is documented during or immediately after the convulsion, then there is a high probability that the seizures are nonepileptic in origin.

Many authors have either recommended or debated the use of various techniques to provoke nonepileptic seizures by suggestion in the clinic or in the laboratory. Among such suggestion techniques are the use of intravenous saline placebo (Slater et al., 1995), suggestion with a vibrating tuning fork on the forehead (Guberman, 1982), and hyperventilation and photic stimulation (Luther et al., 1982). For example, Cohen and Suter (1982) told their patients that the physician would give them a medicine that might bring on a convulsion. The physician then injected a saline solution and told them that soon the spell would begin. The main problem with such procedures is that they use deception to provoke the seizures. Devinsky and Fisher (1996) indicate
that the use of such placebo agents to induce a PS can lead to deception, may remove
the patient from greater insight into the disorder, and can injure the doctor-patient
relationship.

Interestingly, the use of hypnosis in the clinical investigation and induction of
PS has been largely unexamined. Peterson, Sumner and Jones (1950) appear to be the
first to use hypnotic procedures in the differentiation of epileptic seizures from PS. They
observed that patients with PS could, under hypnosis, recall events that transpired
while they were having a seizure. Patients with epileptic seizures could not. Schwarz
et al. (1955) also used hypnotic procedures to provoke and stop the seizures. They
found that hypnotic suggestions clearly differentiated PS from the epileptic ones. They
also found that hypnotic techniques effectively terminated these episodes. Epileptic
seizures, in contrast, could not be induced through hypnosis.

The use of hypnosis has clear advantages over other induction techniques (e.g.,
saline solutions). In the first place, the thorny ethical topic of the deception of the
patient is bypassed. The reason for this is that in a hypnotic procedure the clinician
doesn’t need to deceive the patient. There are no hidden agendas, nor is the patient
misinformed. Secondly, it can give the clinician and the patient a more coherent
understanding of the nature or even the etiology of PS.

In the last decade the use of hypnosis in the differential diagnosis of PS has
been largely unexplored. The notable exceptions are the clinical investigations of Kuyk
and his collaborators (Kuyk et al., 1995; Kuyk et al., 1999). They use a hypnotic
procedure in which the patient is hypnotically regressed to the moment of the last
seizure and it is suggested that he/she “would be able to remember everything about
the seizure” (Kuyk et al., 1999, p. 487). In such circumstances, 17 of their 20 patients
with PS recalled what transpired during the convulsion. Conversely, none of the 20
patients with epilepsy recalled the ictal event.

The present clinical study is a further step toward informing researchers and
clinicians that some hypnotic techniques can be helpful in the intricate diagnostic process
of PS cases. I will now present the following clinical material in which hypnosis was
used in cases where a differential diagnosis was of paramount importance in the referral
process.

Method

Participants

The subjects were one male and seven female patients. The mean age of the
subjects was 32 years (SD: 9.2 years). All of them were referred for a psychological
evaluation, the main objective being a differential diagnosis between epilepsy and PS. The
patients included in this investigation comprised all the cases for which the physician
had a reasonable suspicion of PS, and all were seen between 1996 and 1999 at the
Puerto Rican Society for the Aid of Epileptic Patients. The patients were all Hispanic
and, except for one, of low socioeconomic status. Six patients exhibited seizures that
clinically suggested tonic-clonic seizures, and two of them complex-partial seizures.

Five (63%) of the eight patients had a history of sexual abuse (four females
and one male). Interestingly, the convulsions in all four abused females began a few
months after their sexual assault. All of their abusive sexual experiences occurred during adolescence or in adulthood.

A control group of five female patients with EEG-confirmed epilepsy was used as a control group. Their mean age was 30 years ($SD=6.2$ years). All of them presented generalized seizures that resulted in tonic-clonic convulsions. None of the patients reported sexual abuse or assault.

**Screening**

All of the patients had been referred by other professionals (e.g., psychiatrists, neurologists) because there was some clinical suspicion of the presence of PS. In all cases the suspicion was based on the following three criteria: a) persistent and frequent seizures; 2) no therapeutic response to anticonvulsant medications; 3) out-of-phase bodily movements during the seizures. All patients were clinically interviewed in depth, and, in six cases, I obtained detailed information about the seizures from the spouses or other family members who had witnessed them. As part of the assessment, the patients filled out some clinical questionnaires or other projective tests.

One important feature of the assessment and interview is the collection of data concerning what happens before, during, and after the seizure. This information is certainly crucial as there is abundant data suggesting that patients with PS usually present some behavioral or phenomenological characteristics that are helpful in the diagnostic process (Devinsky et al., 1996). For example, Gates, Ramani, Whalen and Loewenson (1985), compared the ictal characteristics of 25 PS patients with 25 epileptic patients in a detailed clinical investigation. They found that the PS patients could be distinguished because, during the seizures, they emitted more out-of-phase upper and lower extremity movements; more pelvic thrusting; more vocalizations; more side-to-side head movements; and less whole body rigidity. Nevertheless, the observation of the seizure morphology has its diagnostic pitfalls as patients with partial complex seizures of frontal lobe origin frequently exhibit such out-of-phase movements as well (Leis, Ross & Summers, 1992).

**Procedure**

If the case suggested the presence of PS after the data collection, I informed the patient and his/her family that there was a simple method that could shed considerable light into the nature of the seizures. I explained to them that, in some cases, hypnosis had been very helpful in such a process. Hypnosis was presented as a pleasant relaxation state in which the patient and I collaborate in finding some information that could clarify the nature of the seizures. I explain to the patient that the only thing that he/she has to do is to relax, close his/her eyes, and listen attentively to my voice. The induction is very simple and uncomplicated. After eye closure has occurred, I, in a soft voice, count from one to five, and with each number suggest a pleasant relaxation state that covers the whole body. This usually lasts about five minutes.

After the relaxation induction, I suggest that the patient go back in time to the moment of the last seizure. This is done using the imagery of the pages of a calendar going back in time. After we localize the day, I suggest the picture of a big clock in a wall. I present the clock so that we could move the hands of the clock counterclockwise,
so as to give the impression that we slowly move back, until we precisely reach the hour of the last seizure. As I slowly approach the hour of the day of the last seizure, I begin to say that I want to know the details of any feelings, imagery or bodily sensations. Also, I ask “the mind” if it knows the meaning or purpose of the attacks. At no time during the procedure is it suggested that the patient has to convulse or present a seizure. Also, there is no expectation that the patient will be able to remember everything about the seizure.

If the patient manifests a convulsion, I make sure that I do not interfere with the progression of the episode, except by taking the necessary precautions so that the patient will not hurt himself/herself by falling to the floor or gagging on his/her tongue. After two or three minutes, I say, in a firm and loud tone of voice, that when I put my hand on the right shoulder the convulsion will stop immediately. If the patient does not present a convulsion in a span of five minutes, I tell him or her to open the eyes when I count from one to five and that he/she will feel relaxed and comfortable.

In one case a slight departure from this procedure was taken. This female patient stated that right before her seizures, she frequently heard the voice of a man who insulted and humiliated her. In this case, I told her to close her eyes, I counted from one to five and I asked the “voice” what he wanted from her.

Results

The data indicate that in the eight (100%) patients where there was a clinical suspicion of PS, a seizure was produced by the hypnotic protocol that was identical or very similar to the one reported to occur in the natural environment. In six cases independent testimony was obtained (e.g., from family members) as to the similarity of the seizure manifestations during the procedure and those manifested in other places. In fact, in five of those cases at least one family member was present during the hypnotic induction. In all eight cases the patient could not remember anything of what transpired during the seizure. Also, after the convulsion, all of them reacted with somatic (headaches, dizziness, muscular cramps) or cognitive (confusion of time and place) disturbances. In some patients the cognitive disturbances after the seizures lasted up to 10-15 minutes. To further support the point that the seizure manifestation was psychogenic, all the patients immediately stopped their convulsions after my command that they cease. In no case did a convulsion last more than ten seconds after the order that it stop.

An interesting observation was that in six of the eight cases the psychogenic convulsion started when the imaginary clock in the wall was approaching the hour of the seizure. For example, in one case the patient had her last PS at 8:00. When the clock was at 9:00 a.m., she began slowly to tremble and after some 20 seconds her seizure began. In the other five cases a similar process occurred: the seizure did not begin abruptly, but manifested itself gradually until it progressed to a full seizure. In the case in which I spoke directly to the voice that ostensibly was provoking the seizures, the patient, in less than a minute, had a seizure in my office. The attack was terminated immediately after I put my hand on her right shoulder.

Consistent with the idea that the seizures that I observed were psychogenic was the fact that all eight patients manifested violent and pronounced out-of-phase
upper and lower movements of their bodies, side to side motion and, on occasions, vocalizations and lack of rigidity. Compatible with prior research in this area, none of the five patients in the control group presented a convulsion nor any discomfort or pain. During the 10 minute duration of the protocol, all five control subjects were relaxed and completely cognizant of all the proceedings.

**Discussion**

The results of these preliminary clinical observations suggest that some simple hypnotic suggestions can produce or induce a PS in a selected sample of patients who are referred because their phenomenology is confusing in terms of a differential diagnosis. In this study all eight consecutive patients with a suspicion of PS presented a PS that was identical with the ones described in their natural environment. The process was smooth, took only a few minutes, and did not involve any type of deceit on the part of the clinician toward the patient.

The results are consistent with the investigations of other clinicians, in the sense that hypnotic procedures can be helpful in the differential diagnosis of PS (Kuyk et al., 1995, 1999; Peterson et al., 1950; Sumner et al., 1952). An important difference between the present investigation and the research reported by Kuyk et al. (1995, 1999) is that they hypnotized their patients and asked them to remember what transpired during the seizures, whereas this procedure utilized multimodal imagery and age regression in addition to direct suggestion.

In the Kuyk investigation, while not a single patient with EEG-confirmed epilepsy recalled anything, nearly all of the patients in the psychogenic group who were hypnotized recalled what transpired during the convulsion. The reader should note that I did not include the recall of what happened during the seizure as part of the protocol. In the present study a simple age regression hypnotic technique produced a full-blown PS, which was identical with the ones that are manifested in the natural environment of the patients, as attested by their spouses or other family members that were present at the moment of the induction. To further ascertain that such seizures were psychogenic, a simple procedure of commanding in a firm tone of voice that the attack had to stop immediately, was sufficient to terminate a full-blown attack in a few seconds. A full-blown seizure that is stopped in less that five seconds by a simple verbal command is totally incompatible with the identifying marks of an epileptic or other type of organic seizure. Epileptic patients are oblivious to such verbal commands and cannot respond to them immediately. It is important to recall that this procedure makes a positive diagnosis of psychogenic seizures and does not in and of itself eliminate the possibility of comorbid epilepsy (Lesser et al., 1983).

The idea of emphasizing the recall of bodily sensations and emotions is based on the research and theories of a group of clinicians that have postulated that dissociative and conversion symptoms are readily reproduced as sensory bodily perceptions and behavioral reenactments (Nijenhuis & van der Hart, 1999; van der Kolk, 1996). This approach is based on the ideas of Pierre Janet (van der Hart & Friedman, 1989), in which it is proposed that patients with dissociative and conversion profiles may have poor verbal memories of their conflicts or traumas. Instead, such conflicts may have been organized on a perceptual or sensory level and split off from consciousness, provoking complex bodily reenactments of past traumas that can be relived during a
PS. In fact, during the age regression protocol, three of the eight PS patients produced a dramatic reliving of their sexual assault while they were convulsing. One female patient, who was savagely and brutally raped by a stranger, threw herself upon the floor and began to moan, cry, tremble and finally to defend herself with her hands and feet against an invisible assailant. She appeared to be reliving the sexual rape.

How could a patient who is having a PS and who later couldn’t recall anything of the episode, at the same time hear my voice with the command to stop the seizure? This question can be answered if we adopt a neodissociative perspective of hypnotic behavior (Hilgard, 1977). In this model, consciousness is not described as a unitary system, but, rather, as a complex system where consciousness is the product of discrete and separate subsystems that usually function in a coordinated way. But, in some types of pathologies (e.g., conversion or dissociative disorders), various subsystems process the incoming information in an uncoordinated or chaotic manner, provoking the dissociation of somatic, behavioral or cognitive ways of responding. A relevant clinical example was informed by Levy and Jankovic (1983). They described a patient with frequent psychogenic seizures who demonstrated a complete absence of optokinetic nystagmus, visual threat, corneal reflexes, as well as lack of response to very painful proceedings. Nevertheless, she responded to their verbal commands while simultaneously evidencing a deep and profound unconsciousness.

The results of this study also are quite similar to those reported by other researchers who have documented that from 30% to 80% of PS patients present a history of sexual abuse (Betts & Boden, 1992; Bowman & Markand, 1996). It is interesting to point out that five (63%) of our patients had a history of known sexual abuse, and that in four cases (50%) the PS began a few months after the abusive experiences. Apparently, such abusive experiences can interact with the use of dissociative defenses and an avoidant coping style that ultimately make the patient vulnerable to the presence of dissociative and conversion disorders.

It should be clear that the induction of a PS doesn’t preclude the possibility of epileptic seizures. About 10% to 20% of PS patients also have epileptic seizures (Lesser et al., 1983). Nevertheless, the demonstration of the presence of PS can throw considerable light on the clinical course, prognosis and treatment approach to such patients. In fact, it has been demonstrated that PS patients frequently report high rates of complex chronic anticonvulsant regimens, unemployment, disability, frequent visits to primary care physicians, and psychiatric comorbidity (Krahn et al., 1997). So, the clear-cut demonstration of PS in a patient could have two salutary effects. First, there is evidence that “most patients have a fairly good outlook in the months to years after learning they have nonepileptic seizures” (Krahn et al., p. 541). Second, it is well known that PS are reduced or eliminated during psychotherapeutic interventions (Aboukasm et al., 1998).

The advantage of using hypnosis in the study of PS is that it overcomes the frequent criticism that the induction of seizures (e.g., saline solutions) is a form of deceiving the patient and thus of questionable ethical value. In the protocol of this investigation the patient is not deceived; he/she is informed that hypnosis is a useful way to obtain valuable information about their clinical seizures and that we do not know exactly what is going to happen during the procedure.

One of the limitations of these preliminary observations is the small number of subjects with whom the procedure has been implemented. The next step is to apply
a uniform hypnotic protocol to a large number of patients suspected to suffer from PS and to verify the number of false-positive or false-negative cases that the procedure produces.

Another limitation of the present study is the absence of formal hypnotizability assessment. It is strongly recommended that, as part of a more formal investigation, clinicians should quantify both the level of hypnotic susceptibility and the degree of dissociative tendencies of the PS patients. Future research should clarify whether there exists a relationship between hypnotically invoked psychogenic seizure production and hypnotizability. It is also recommended that the clinician be blind as to the possible diagnosis of the patients.

Another limitation of the present preliminary observations is that the hypnotic regression and the resultant convulsions were not registered with EEG video equipment. The employment of such equipment could bring electrographic evidence of the PS. Nevertheless, I think that the hypnotic protocol, as detailed above, furnishes strong and conclusive evidence that the seizures are indeed psychogenic. Further research, with EEG equipment and with hypnotizability and dissociative scales, could enhance our understanding and knowledge of the usefulness and wide application of the age regression hypnotic protocol as described above.

References


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