



American Journal of Clinical Hypnosis

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/ujhy20>

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Published online: 21 Sep 2011.

To cite this article: Gil Zalsman M.D. & Shachar Dror (2002) Hypnosis Provoked Pseudoseizures: A Case Report and Literature Review, American Journal of Clinical Hypnosis, 45:1, 47-53, DOI: [10.1080/00029157.2002.10403497](https://doi.org/10.1080/00029157.2002.10403497)

To link to this article: <http://dx.doi.org/10.1080/00029157.2002.10403497>

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Hypnosis Provoked Pseudoseizures: A Case Report and Literature Review

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Only a few studies have been reported in which suggestion was used to provoke pseudoseizures (PS). In these studies PS were video EEG monitored, and saline injections were administered as placebo. This method may be somewhat unethical and carries a low success rate. The authors, two child psychiatrists (GZ and DS) and a neurologist (NG), applied hypnosis to provoke PS which were monitored by video-EEG. Pre-, intra- and post-ictal serum prolactin levels were determined. The first hypnotic session was diagnostic and for this reason featured controlled attempts to determine whether there might be childhood trauma material. The following sessions easily provoked PS during which the EEG was normal and pre-, intra- and post-ictal serum prolactin levels were identical and within normal values. We conclude that hypnosis (with informed consent) for PS monitored by video-EEG telemetry, seems to be an ethical, cheap and quite easy way to demonstrate PS.¹

Keywords: Pseudoseizures, suggestion, hypnosis, prolactin, sexual abuse, video-EEG telemetry

Introduction

The accurate diagnosis of pseudoseizures (PS) is still a major clinical challenge. About a third of patients presenting with PS had documented true seizures (TS) in their childhood (Ramani et al., 1980). Some develop PS years after "primary" epilepsy has remitted. PS are often clinically indistinguishable from true seizures. For example, nontraumatic tongue biting and incontinence may occur during PS (Meierkord et al., 1991). This results in needless harmful and costly treatment with anti-convulsant medications. Anticonvulsants have no beneficial effect on PS. Consequently, PS patients who are labeled as suffering from intractable epilepsy are exposed to high dose anti-convulsant polytherapy and significant side effects (Mothersill, 1997).

A wrong diagnosis can produce treatment that is not only inadequate but may also be dangerous. The majority of the patients with PS are single childless females of childbearing age (Jawad et al., 1995; Meierkord et al., 1991; Bowman & Markand,

¹ Videotape of the pre-ictal, ictal and post-ictal events are available by request and after patient permission.
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1996). They may be aware of or told by their physicians about the potential teratogenic effect of anti-convulsants.

Some suggested guidelines for the diagnosis of PS include the lack of electroencephalographic epileptic activity during the seizure and post-ictal EEG changes, absence of post-ictal rise in serum prolactin, or confusional states. (Meierkord et al., 1991; Cohen & Suter, 1982). Positive recall of the ictal state under hypnotic trance has also been considered as positive criterion in the differential diagnosis of PS (Kuyk et al., 1999). A recent review on the subject of Non-Epileptic Attack Disorder (NEAD) by Francis and Baker (1999) tries to give more clear, distinguishing clues to the diagnosis of this syndrome. Careful clinical history taking and a reliable description of the convulsive episode are also essential to the diagnosis of PS (Francis & Baker, 1999). Meierkord et al. (1991) have found that the mean duration of a single PS is 1-30 minutes during which the patients are less responsive, some respond verbally only to repeated commands, and 17% injured themselves. However, not all ictal EEG activity is discernible with surface EEG. Some investigators emphasize that only a threefold rise in prolactin level is strongly indicative of PS (Kuyk et al., 1997). Others found that the rise in prolactin only follows certain seizure types (Meierkord et al., 1992).

Numerous studies dealing with psychopathology of PS emphasize the past history of physical and sexual abuse in childhood (Bowman & Markend, 1997; Shen & Bowman, 1990; Harden, 1997; Guberman, 1982). Additional symptoms of conversion or psychopathology were commonly encountered (Meierkord et al., 1991; Guberman, 1982).

Video-EEG telemetry is considered an effective and reliable method for documenting PS (Cohen & Suter, 1982; Bazil et al., 1994; Bye & Nunan, 1992). The main setbacks of this method are:

1. Seizures may not appear spontaneously in the hospital setting since the over attention the patient receives may reduce the need for the "conversion effect" induced by PS. In the case of true seizures the telemetry may fail as a diagnostic tool since some patients have a low seizure frequency (Parra et al., 1998).
2. Video-EEG telemetry cannot be performed in small rural hospitals that lack the appropriate equipment and/or staffing.
3. It is time-consuming and requires numerous professional staff-hours.
4. Because the frequency of PS varies, it may not be realistic to expect to see an event on a 24-48 hours protocol (although most patients will have spontaneous events during that period according to Parra et al., 1998).

Since the 19th century, hypnosis has been known to induce conversion symptoms. In *Studies on Hysteria*, Breuer and Freud (1961/1893-1895) stated that "the basis and sine qua non of hysteria is the existence of hypnoid state" (p. 12). Hypnotic suggestion may be helpful in TS, as a monotherapy or an adjunctive therapeutic method. However the mechanism for such effect is not clear (Crasilneck & Hall, 1975).

It appears logical to assume that induction of PS by hypnotic suggestion monitored with video-EEG telemetry may be the method of choice for the diagnosis of PS. Surprisingly, this is not the case. We were able to trace few case reports (Carmant et al., 1995; Lindner, 1993;) and one prospective study (Guberman, 1982) using hypnotic suggestion-provoked PS during video-EEG telemetry. Another study used suggestion and saline injection rather than hypnotic trance in 57 patients with atypical

seizures and succeeded in diagnosing 48 patients who suffered from PS (Cohen & Suter, 1982). Later Bazil et al. (1994) reported on the provocation of PS using saline and suggestion in 52 patients with general seizures. Thirty-seven percent were found to suffer from PS. More recently, Barry et al. (2000) demonstrated in a case-control study that the sensitivity of seizure induction in the diagnosis of PS is 77% and specificity is 95%.

The use of saline injection as a placebo, without consent, seems to present a major ethical and legal problem. On the other hand, informed consent will remove the suggestive power of the injection. Moreover, the injection by itself may serve as a major intrusive stressor for young females with a history of abuse in childhood. One may wonder if injection may not serve as a precipitating factor for true seizures. To the contrary, the use of hypnotic trance by a trained staff (after informed consent had been obtained) seems to be more direct, noninvasive, and a more clear-cut proof for PS. Hypnotic trance can also serve as a curative treatment for the control of PS (Shen & Bowman, 1990) and as an effective modality for uncovering and resolving the underlying traumatic material (Crasilneck & Hall, 1975). Hypnotherapy can be an especially powerful instrument in the pediatric population, as their hypnotizability seems to be higher than adult subjects (Olness & Gardner 1988; Zalsman et al., 2001).

Case Report

History

The patient was a 27-year-old single female who had been unemployed since the age of 18. She was the product of a normal pregnancy and delivery. Psychomotor development and childhood history were unremarkable. She was first admitted to an endocrinology department at the age of 14 years for thyroid enlargement. Hashimoto thyroiditis was diagnosed and replacement thyroxin sodium treatment led to euthyroid state.

According to her mother, she was sexually abused in a public park six months later. The exact details are unknown since the patient was totally amnesic for this event. She came home that day confused and frightened. During the following two weeks her behavior deteriorated to the point that she was brought home from school in an unresponsive state. She was hospitalized for evaluation, and she experienced her first seizure on the day of her admission. A meticulous neurological examination, routine laboratory tests of blood and urine, total thyroxin, waking EEG, and contrast enhanced brain CT were normal. The cerebrospinal fluid protein was 64 mg/ml with normal glucose and no cells.

The patient's production of a few bizarre seizures and the presence of a number of normal EEG tracings raised the possibility of a conversion disorder, and she was transferred to the psychiatric adolescent ward. There she presented a fluctuating picture of delirium and conversion. Serial EEG tracings that showed a generalized progressive slowing led to the diagnosis of encephalopathy in compensated Hashimoto thyroiditis. Treatment with prednisone (but not anti-convulsants) resulted in a normalization of her behavior, EEG, and the cessation of "seizures" (Shein et al., 1986).

A year later the patient began to experience numerous daily episodes of "absence", *de ja vu*, and later convulsions. Complete neurological examination, endocrine profile, several EEG tracings, gadolinium enhanced brain MRI and two video-

EEG telemetries were normal. Thirteen years later the patient and her father reported that she had continued to have generalized tonic seizures occurring 2-7 times a week. These appeared to be of a different nature from her earlier seizures. She had dropped out of school, was not able to work, and had no social life. A large number of anti-convulsants in various dosages and combinations had been tried without a trace of beneficial effect. She was admitted to a neurology department for evaluation.

Method

A diagnostic hypnosis session was suggested to the patient. She agreed and signed an informed consent for hypnosis. She was found to be highly suggestible and had maximum scores on the Stanford Hypnotic Clinical Scale (Olness & Gardner, 1988). (High hypnotizability is common in PS patients [Kuyk et al., 1999]). A trial to access the traumatic experience under hypnosis failed but seemed to produce a vague feeling of distress in her recall of pre- and post-event details. The purpose of this trial was to precipitate brief controlled emotional abreaction (for diagnosis). It was also felt that brief, controlled uncovering abreaction could serve as a therapeutic strategy and might give clues for future psychotherapy as well. After the trial she was brought out of trance, and a few minutes later another session was initiated. During the second hypnotic session (after the patient's permission had been obtained) a full-blown seizure was induced by suggestion. It started when it was requested, and a march of motor signs was suggested. The seizure began in one hand and spread to the entire body in the form of rolling movements. The patient bit the tip of her tongue. With a count of ten the patient was brought out of trance and oriented to time, place, and person. She was amnesic for the convulsive event. At that point it was decided to attempt to obtain a hypnotic suggestion-provoked seizure monitored with video-EEG telemetry. The patient signed a comprehensive initial informed consent that stipulated that seizures would be induced by suggestion. Prolactin, thyroid function tests, creatinine kinase and lactate dehydrogenase were drawn before and after. Two sessions were held. During these sessions the hypnotist (GZ) used relaxation, hypnotic induction, and direct hypnotic suggestion to precipitate the seizure. The text used was simple and direct: "It may be interesting to try now to experience an attack of convulsions of the kind you experience many times a day. I (GZ) and your neurologist (NG) will be here nearby to watch and ensure your safety..." Then the seizure began and was stopped by a count of ten. All this time the patient was connected to EEG electrodes and a venous line.

Results

During both sessions we were able to provoke full-blown convulsions. EEG's were normal. Pre- and post-ictal Prolactin were within normal limits (baseline = 17.5µg/L; post-ictal = 16.8µg/L) as were the values of creatinine kinase, lactate dehydrogenase, and thyroid function tests. The videotapes of the sessions were shown to the nursing staff and senior neurologists who had known the patient for a while as well as to patient's father. They were found to be similar to her typical spontaneous seizures. Subsequently, all anti-convulsants were slowly tapered off. The patient is currently in hypnotically facilitated psychotherapy on a weekly basis.

Discussion

Our patient may have had an “organic” cause for seizures during her childhood. These true seizures were followed by PS which were similar to the “organic” seizures. This is typical for PS and resembles the clinical histories of patients with conversion disorder in general (Ramani et al., 1980). The use of an age regression technique in the first session failed to access the sexual trauma material; however, we may speculate that it served as a precipitating factor for the development of PS. In view of the patient’s improvement, it is possible that some unconscious review and processing may have occurred after the initial session. It is interesting to note that hypnosis has been described to relieve the ictal amnesia of such patients (Kuyk et al., 1999).

Limitations

A single uncontrolled case study is not sufficient to warrant firm conclusions. Further reports and controlled studies are needed although they can be difficult to perform. A second limitation reflected in this report is that the induction of seizure-like behavior by hypnosis does not speak to the question of whether the patient’s spontaneously occurring seizures are always of the PS variety. We are also aware that some authors have shown that a failure of prolactin levels to rise does not exclude a diagnosis of complex partial seizure (Meierkord et al., 1992).

Clinical Applications

The fact that video-EEG telemetry is usually available and used in neurology while hypnosis is practiced mainly by psychiatrists and psychologists in the psychiatric wards, may explain why the concomitant use of hypnosis and video-EEG telemetry is not common. This report suggests that using hypnotic trance and suggestion during video-EEG telemetry may be helpful in the accurate diagnosis of PS. Barry et al. (2000) have noted that hypnotic seizure induction may provide the patient with a useful behavioral tool to control his/her PS. This is what happened with our patient. We hope that this report will encourage other mental health professionals who are trained in hypnosis and consult with neurology departments in a general hospital setting, to study this procedure and to report their findings. We are also hopeful that it will help stimulate an open discussion of this important clinical issue in the field of hypnosis.

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