

## Case Report

# Conversion Reaction after a Traumatic Brain Injury

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## Abstract

KLS, also called recurrent hypersomnia, is a sleep disorder characterized by recurrent episodes of hypersomnia associated with cognitive and behavioral disturbances such as confusion, derealisation, apathy, compulsive eating, and hypersexuality. In this article, we aim to present a case with a history of traumatic brain injury who had been suffering from memory disturbance and came in an unresponsive state. He met several therapists and hospitalized several times. Through reviewing his history, we point out some diagnosis and discuss the probable effect of stressful life events on such patients with impaired memory system. The patient has received these medications during hospitalization in neurology ward pantoprazole 40mg po Qd, amantadine 100mg po BID, modafinil 100mg po TID in addition to diazepam and heparin in bedside. In this case, combination therapy and using hypnosis with family support and cooperation in several medical visits seems to be effective for early treatment.

**Keywords:** Traumatic brain injury; Hypersexuality; Neurology; Symptoms

## Introduction

In the last decades of the 19<sup>th</sup> century, physicians had been facing a dilemma in several patients who were coming to them with frequent unexplained bodily symptoms with few signs or no signs at all. They labeled as hysteric and blamed frequently as a malingerer who wants to escape from their responsibilities. Sigmund Freud and his brilliant colleague, Josef Breuer, aimed to solve this problem by recruiting a method who learned from the works of another talented scientist, Jean Mary Charcot. They initially used hypnosis to overcome the patient's symptoms *via* a suggestion technique, as Charcot introduced it. It became clear shortly that the suggestion has a temporary effect on hysterical symptoms and the symptoms returned after decreasing the effect of hypnosis. In an accidental experience, Breuer found that hypnosis could lead to remembering some traumatic experiences that the patient was not able to remember them in an ordinary interview. This finding led to the discovery of the relationship between unconscious repressed materials and unexplained bodily symptoms. From then on, the term hysteria replaced by conversion. This name pointed out that in some vulnerable patients the repressed intolerable feeling and thoughts convert to bodily symptoms to decrease the anxiety of a person. Freud and Breuer recruited the hypnotic trance to give out unconscious materials the patients were unable to talk about freely. This technique was named abreaction and the process of revealing hidden unconscious materials was named catharsis. KLS, also called recurrent hypersomnia, is a sleep disorder characterized by recurrent episodes of hypersomnia associated with cognitive and behavioral disturbances such as confusion, derealisation, apathy, compulsive eating, and hypersexuality [1]. Patients are commonly amnesic for episodes. Episodes of hypersomnia may last a few days to several weeks. The etiology of this syndrome is unknown. Genetic and immune-mediated causes were contemplated as possible contributing factors. Infections, alcohol consumption, sleep deprivation, unusual stress, and physical exertion are among the precipitating factors mentioned in the literature [5]. Although, hyperphagia is a common finding in this condition, up to one-third of patients have decreased

appetite or eat less during some episodes [2-6].

## Case Presentation

Mr. H a 25-year-old, single man referred to a neurologist with low appetite and poor concentration. It had been starting since three months ago after his mother's illness that eventually led to hysterectomy. He also had history of head injury during car accident led to skull fracture and 21 days of unconsciousness occurred two years ago. He discharged from the hospital after two months.

The family members reported that he has been unable to remember everyday events, although he had maintained his long-term memory. To overcome this disability, he had written down his daily duties in a notebook.

Before this current problem, he had been able to drive, exercise and do many routine daily works such as picking up his siblings from school.

When the neurologist did not find any active neurological finding, he referred to a psychiatrist and the patient visited by psychiatrists at 14 march 2019 for further evaluation. He received antidepressant and antianxiety medications included asentra 50mg, alprazolam 0.5 mg and velban 75mg. However, he came back after three days due to prolong sleep time that lasts for a whole day.

Then, he hospitalized in the neurology ward for ten days. During this time, all workups including imaging and polysomnography were negative. The report of neurologist was in favor of normal sleep architecture. A 6 hours recording of video EEG showed all sleep waves in the 1 and 2 stages. So, the neurologist decided to consult with colleagues in the psychiatry department. The patient admitted to the psychiatry ward and received three times of electroshock therapy without any improvement. After that, he was returned to the neurology ward.

When we first met him, he was alert and had fixed gaze without any eye contact. He had no response to the verbal commands. The

family members mentioned that he still spent a long time in sleep during the day. Since he had shown no response to treatment up to that time, we decided to use hypnosis as an intervention to make the problem more clear. We wanted to examine the involvement of psychological issues in the development of his symptoms by hypnosis. In the first session, we slowly infused 250cc of normal saline containing 5mg of diazepam. Before induction of hypnotic trance, the patient refused to blink and impose a constriction on eye muscles. His head was deviated to one side, had signs of drooling, and had nasogastric tube. During the procedure, he showed normal blinking and spat out his saliva. We made some suggestion to persuade him to eat and walk independently after hypnosis. An interesting finding was the acceleration of his heartbeat from 80 to 100 beat per minutes occurred when we talked about his mother during hypnosis.

The family members reported that the patient initiated talking with a cousin and said: I am tired, leave me alone, in the day after hypnosis. In the same day, we hypnotized him for the second time. This time, we used no medication. The content of suggestions was related to the wellbeing of his mother and coming here to see the patient. Again, the heartbeat reached 102 from 75 beats per minutes. He was able to blink but had no eye contact. He forcefully maintained his eyes focused on the ceiling. However, he smiled and showed some movements around the lip without speaking. We met him two days later. At that time, he showed a general improvement in his condition, had normal blinking with a straight head. However, he still had the nasogastric tube and Foley catheter and was unable to eat and urinate independently.

In the third session, we suggested that he need not use the nasogastric tube at all and would be able to do daily works as he did before his illness. He showed eye contact after hypnosis but refused to talk with us.

The patient has received these medications during hospitalization in neurology ward pantoprazole 40mg po Qd, amantadine 100mg po BID, modafinil 100mg po TID in addition to diazepam and heparin in bedside.

He discharged from neurology ward. However, since he still was not able to eat and had poor communication, he admitted in the psychiatry ward for further evaluation. The psychiatrist discontinued all medications and planned to observe him. Interestingly, he removed his nasogastric tube in the following day and asked his father: What am I doing here? Then, he returned to a relatively healthy condition and talked freely to his family members. He discharged from hospital on the same day.

Overall, the patient's symptoms lasted for three months. At first, he admitted in the neurology ward for ten days and then was referred to the psychiatry ward and received electroshock for three sessions. Then, due to unresponsiveness, he returned to the neurology ward and spent most of the times in sleep. Eventually, he discharged with a nasogastric tube and foley catheter. Then, he for the last time he hospitalized in the psychiatry ward for and her symptoms disappeared suddenly after two days after discontinuation of his medications.

## Discussion

When he was visited for the first time by the neurologists, he

appeared that he suffered from a difficulty as a sequela of his previous traumatic brain injury. One of the conditions that seemed worth considering was Klein-Levin Syndrome (KLS).

The diagnosis of KLS is made based on the clinical features of episodic hypersomnia with typical cognitive and behavioral disturbances and exclusion of alternative psychiatric, neurologic, and toxic or metabolic etiologies.

According to the third edition of the International Classification of Sleep Disorders (ICSD-3), diagnostic criteria for KLS include all of the following [2]:

- At least two episodes of excessive sleepiness and sleep duration, each lasting for two days to five weeks.
- Episodes recur at least once every 18 months and usually more than once a year.
- Normal alertness, cognitive function, behavior, and mood between episodes.
- At least one of the following during episodes: cognitive dysfunction, altered perception, eating disorder (anorexia or hyperphagia), or disinhibited behavior (such as hypersexuality).
- Hypersomnolence and related symptoms are not better explained by another sleep disorder; other medical, neurologic, or psychiatric disorder (especially bipolar disorder); or use of drugs or medications.

Considering our patient condition, KLS seems a proper diagnosis. He suddenly developed episodic sleepiness and cognitive dysfunction without any evidence of involvement of a neurological condition such as epilepsy or infectious disease. However, he showed more regression in his behavior compared to a typical case of KLS. Also, he responds to hypnotic suggestion. This is not expectable in KLS.

Another diagnosis that considered in this patient was a catatonic state. This state can occur in the context of several disorders. According to DSM-V, it can be associated with another mental disorder or medical condition [7]. It is defined by the presence of three or more of 12 psychomotor features: stupor, catalepsy, waxy flexibility, mutism, negativism, posturing, mannerism, stereotypy, agitation, grimacing, echolalia, and echopraxia.

Among the above features, we could find three of them in our patient: stupor, mutism, and negativism. However, we did not find evidence of the involvement of a medical condition. Regarding mental conditions such as depression, we expected that he respond to electroshock therapy. As we mentioned, he showed no improvement after taking three sessions of therapy.

As we mentioned, he sustained a head injury and skull fracture two years before starting the current illness. This event led to the loss of his ability to recall activities. It seems that the process of the formation of long-term memory was disturbed in him. His condition, reminded us the famous case, H.M who after surgery to treat his epilepsy that was secondary to a childhood head injury, developed devastating memory loss [8]. After his operation in 1953, he remained previous abilities and had no seizure. However, he was unable to convert any new memories into permanent memory. The surgeons

removed the inner surface of the temporal lobe on both sides as well as the hippocampus. Hippocampus has an essential role in converting short-term memories to long-term ones. Our patient, like H.M, has good short-term memory lasting for a few minutes. He could carry on routine daily jobs that he previously learned. However, he was unable to recall any new task performed after surgery. However, his ability to learn new behavior was maintained though he could not explain this process. In other words, he had an intact implicit memory and impaired explicit memory.

His family members reported that he complained of the inattentiveness of his parents and repeatedly said that they are not good-enough parents. His father could not cancel his disappointments about unsuccessfulness of his son in education. He mentioned to a long-standing conflictual relationship with his wife. He had a dependent relationship with his mother, and the current symptoms started a few weeks after his mother and her operation.

It can be contemplated that his memory disturbance after the accident led him to live in the present moment. From then on, he would not be able to process stressful life events as they process by ordinary people. However, his intact implicit memory could contain the events and be impressed by them. Considering his strong attachment to his mother, the process of separation and the experience of stress due to mother's operation has had a decompensating effect on his emotional equilibrium. He could not verbalize his apprehension due to impaired explicit memory, but he impressed by his experience via his intact networks of implicit memories. Accordingly, he was influenced by hypnotic suggestions and responded emotionally to them (increased heart rate when the hypnotizer talked about his mother condition). Electroshock had not any effect on him, but he responded to the hypnotic suggestions from the very first session. These findings were not in favor of a catatonic state or KLS.

After all treatments and time passed, the patient was in relatively stable condition. He could perform routine daily tasks. He had difficulty in recall verbally the new learnings. We suggested that to design some nonverbal interventions beyond simple hypnotic suggestion, which lead to longer and more consistent changes in patients like him. Hypnotic suggestion, per se, cannot give rise to longtime changes and we may expect to return of the symptoms in response to the future stressful events. In this case, combination therapy and using hypnosis with family support and cooperation in several medical visits seems to be effective for early treatment.

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