

# A Case of Anxiety Disorder Acquired Subsequent to Hot Water Epilepsy

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## ABSTRACT

A Case of anxiety disorder acquired subsequent to hot water epilepsy

Hot water epilepsy is a rarely seen type of reflex epilepsy. It is induced by the contact of very hot water to head while having a shower. Complex partial or generalized tonic-clonic seizures can be seen. Anxiety disorder is one of the most frequent psychiatric comorbidities that accompany epilepsy. It may negatively impact the quality of life and treatment compliance of epilepsy patients. In this article, a case that developed anxiety disorder subsequent to generalized tonic-clonic seizure, induced by hot water contact, was discussed. Increasing the awareness of the association of epilepsy and anxiety disorder is aimed.

**Keywords:** Anxiety, hot water epilepsy, reflex epilepsy

## ÖZET

Sıcak su epilepsisi sonrası gelişen anksiyete bozukluğu olgusu

Sıcak su epilepsisi nadir görülen bir refleks epilepsidir. Banyo sırasında yüksek sıcaklıktaki suyun başa teması sonrası tetiklenen nöbettir. Kompleks parsiyel veya generalize tonik klonik nöbetler görülebilir. Anksiyete bozuklukları epilepsiye en sık eşlik eden psikiyatrik komorbiditelerden biridir. Epilepsi hastasının yaşam kalitesini ve tedavi uyumunu olumsuz etkileyebilir. Bu yazıda sıcak su temasıyla tetiklenen generalize tonik klonik nöbet sonrası gelişen anksiyete bozukluğu olgusu tartışılmıştır. Epilepsi ve anksiyete bozukluğu birlikteliğine yönelik farkındalığı arttırmak amaçlanmıştır.

**Anahtar kelimeler:** Anksiyete, sıcak su epilepsisi, refleks epilepsisi



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## INTRODUCTION

Seizures, which are triggered and regularly repeated by certain stimuli, are called reflex seizures. There are some forms of epileptic seizures which are triggered by some activities such as reading, speaking, eating, listening to music, as well as having a hot water bath (1).

Hot-water epilepsy is a type of reflex epilepsy that occurs during bathing with the contact of hot water, particularly on head area. It was first described in New Zealand, in 1945 by Allen (2). The incidence of hot water epilepsy among epilepsy patients ranges between 0.6% and 6.9% (3).

According to a research (4), 23% of the epileptic patients also have anxiety disorder; the incidence of life-long anxiety disorder was reported as 11.2% in the non-epileptic population and 22.8% in the epileptic individuals in another study (5).

Anxiety disorder in epilepsy can be seen in various forms, such as a psychological response to the aura of simple partial seizures and interictal anxiety (6).

In this article, a patient admitted to the psychiatric outpatient clinic due to anxiety disorder that emerged subsequent to hot-water epilepsy, will be discussed. A 41-year-old female patient was admitted to our outpatient clinic with the complaints of insomnia, restlessness, constant anxiety, and lack of attention. During the interview, it was learned that she had fainting and bodily contractions during bath with hot water a week ago. The patient reported that she fell down and injured her knee, bit her tongue which resulted with bleeding. She was found by her relatives. After this accident, she started to experience intense anxiety and worry. She stated that, she could not live alone and have bath alone. According to the history; fainting with hot water contact first happened 15 years ago. She then realized that seizures were triggered

when she had a shower with very hot water, especially during the pouring of hot water from the top of her head.

Over time, she started to reduce the temperature of the water. She has fainted about once or twice a year. After having no seizures for one year, our patient had a seizure and injured herself and then started thinking that “she will never recover”. Patient’s medical history was negative for head trauma or febrile convulsion, and family history was negative for epilepsy. Neurology consultation was requested because it was considered that the described seizure might be reflex epilepsy. Neurological examination, EEG and brain MRI were evaluated as normal. Based on the fact that there were two or more stimuli-induced seizures, it was considered as hot-water epilepsy. Paroxetine 20mg/day was started with the diagnosis of anxiety disorder acquired subsequent to epileptic seizure. Patient was informed about hot water epilepsy and behavioral suggestions were made. Anti-epileptic treatment was not recommended because there were no seizures without inducing stimuli and no spontaneous seizures. The patient, whose anxiety symptoms were relieved with paroxetine 20mg/day during the follow up visits, is followed up.

Hot water epilepsy was recognized as a type of reflex epilepsy by the International League Against Epilepsy (ILAE) in 2001 (7). Diagnosis is usually based on results of interictal electrophysiological examinations because of the difficulty of the ictal recording in hot water epilepsy. Interictal EEG is usually normal, in some studies temporally localized abnormalities have been rarely demonstrated. However, no structural anomalies have been found in brain MRI of the patients, except hippocampal sclerosis in a few cases (8).

In a large-scale epidemiological study consisting of 78 cases, performed in India by Gururaj et al. (9), it was found that male/female ratio was 3.6/1 and the rate of conversion to non-reflex epilepsy was 30.8%. Family history of febrile convulsion rate has been reported as 18% in epilepsy patients. In the study of Bebek et al. (10) complex partial seizures have been seen in 67% of patients, and generalized tonic-clonic

seizures have been seen in 33% of patients. In another study, seizure pattern rates were; 20% and 80% respectively (11).

Due to the nature of hot water epilepsy, there is no room for antiepileptic drugs in the treatment. Changing the temperature of bath water or bathing method is generally sufficient to prevent seizures (12). Antiepileptic drugs can only be used if the seizure can not be controlled despite these changes, or if spontaneous seizures also occur. The most common choice is carbamazepine (13).

The most common comorbid conditions associated with epilepsy are anxiety disorders. Anxiety comorbidity has been identified more commonly in young epileptic patients and in patients that have a short duration of illness. It has been stated that strategies to cope with the disease progressed with age and the longer duration of the illness, thus it could be protective against anxiety (14). It has been reported that the presence of depression, perceived adverse drug effects, low education level, comorbid physical disorders, female gender, and unemployment were related to development of the anxiety disorder in epilepsy patients (15). In another study, it has been found that having a poor general health condition increased the development of anxiety disorder, whereas social support protected against it (16).

In our case, there were seizures that have started many years ago but have been at very long intervals and have been induced by hot water. Our patient, who was aware that she could have a seizure during the bath and could get injured, eventually have fallen in despair and intense anxiety, thus meeting the criteria of anxiety disorder. The quality of life has been negatively affected and she has been unable to perform daily activities.

In conclusion, it has been supposed that, reflex epilepsy induced by hot water may lead to anxiety disorders due to the perceived anxiety for possible seizures, and that these patients may admit to psychiatric outpatient clinics before referring to neurology; in addition to protective measures, it could be possible to obtain successful results with appropriate anxiety treatment.

Contribution Categories	Name of Author
Follow up of the case	R.A.
Literature review	R.A.
Manuscript writing	R.A.
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