

**REM-Sleep Behavior Disorder Combined with PTSD: A Case Report**

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**Abstract**

A male patient was admitted to our hospital in 2022 for recurrent nightmares with abnormal dream behaviors for three years. The patient complained that he gradually started to have recurrent nightmares without any reason since the second half of 2019, and the dreams were accompanied by abnormal behaviors, such as talking in his sleep, falling from bed, and hitting his wife. At the beginning of admission, the diagnosis of RBD was made based on the findings of polysomnography PSG and the clinical characteristics of the patient. However, after detailed understanding of the patient's traumatic experience, combined with the results of Minnesota Multiple Personality Inventory MMPI, SCL-90, and Post Traumatic Stress Disorder Questionnaire PCL-C, and after a case discussion, the final diagnosis was revised as follows: 1. RBD; 2. PTSD. The patient's pharmacological treatment was only clonazepam 1 mg alone, and taking into account the patient's traumatic experience, TF-CBT for patient's PTSD-related symptoms was provided. The patient was discharged clinically cured after more than 20 days of hospitalization.

**Keywords:** REM-sleep behavior disorder; PTSD; Psychotherapy; Cognitive-behavioral therapy; TF-CB

## Introduction

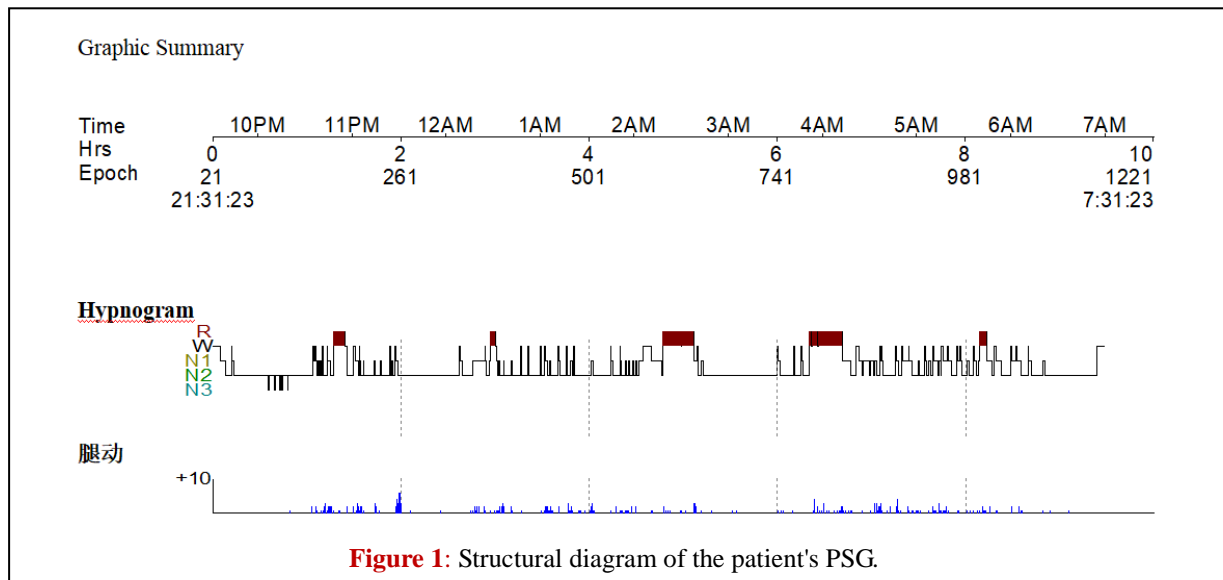
REM-sleep Behavior Disorder (RBD) is a Rapid Eye Movement (REM) sleep parasomnia characterized by abnormal dream-related motor behavior accompanied by REM-sleep Without Atonia (RWA) during the REM period. The abnormal behavior of patients with RBD during the REM period reflects vivid dreams, and the dreams are usually associated with chasing or aggression [1]. During REM sleep, the patient's muscle tension cannot relax as REM Atonia of normal sleep. The diagnosis of RBD needs to be based on abnormal dream-related sleep behavior and polysomnography (PSG), which monitors features such as eye movements, electroencephalographic activity, and muscle tone, among which Electromyography (EMG) demonstrates tonic muscle activity during REM sleep [1,2]. Post-Traumatic Stress Disorder (PTSD) is a chronic psychiatric disorder after experiencing a traumatic event and includes four features: 're-experiencing', 'avoidance', 'negative alterations in cognitions and mood', and 'hyper-arousal' [3]. Nightmares often appear as an intrusive symptom and they can affect the outcome of PTSD treatment [4]. In summary, both RBD and PTSD have significant and similar sleep abnormalities, such as nightmares. We first considered RBD when the patient was admitted with sleep problems, but after a more in-depth and thorough examination, the final diagnosis was 1. RBD and, 2. PTSD. This also suggests the need for clinicians to be more comprehensive and precise in the diagnosis and treatment of sleep problems.

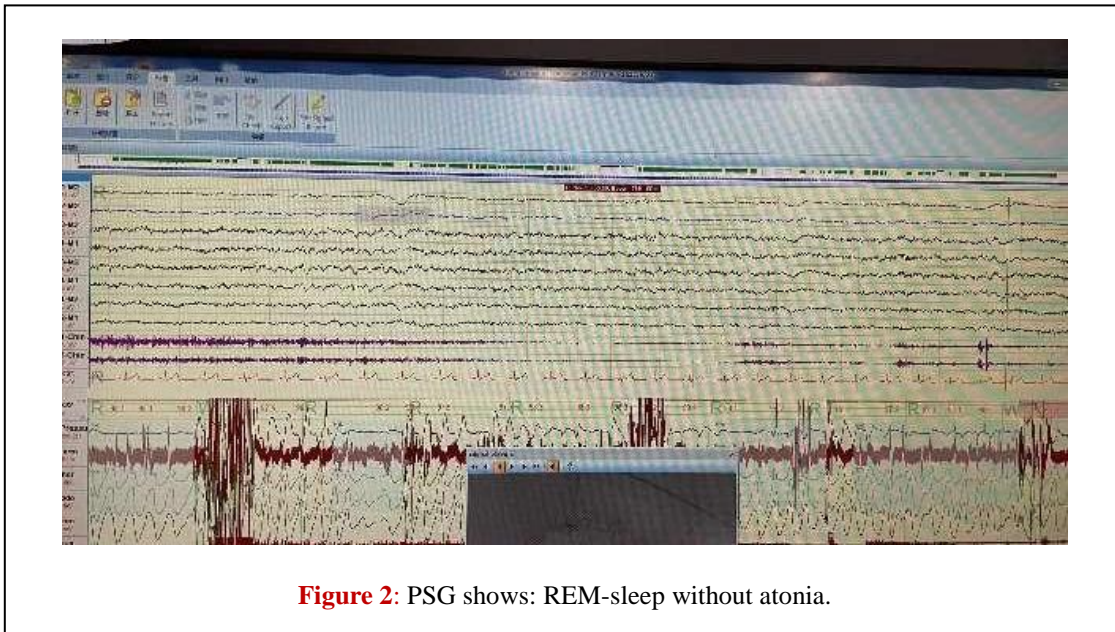
## Case Presentation

A 65-year-old retired male experienced three years of recurrent abnormal behavior during sleep. Beginning in 2019, the patient repeatedly experienced abnormal dream-related behaviors during sleep, such as excessive dreaming, nightmares, and sleep talking. In 2020, the patient dreamed of his father hitting him and falling out of bed during sleep. In 2021, the patient dreamed of being hit by a cow and dodging, and the defensive action of dodging caused the patient to fall from the bed. In January 2022, the patient was hospitalized in a general hospital for hernia surgery and experienced nocturnal shouting and agitation, claiming to hit someone, but could not recall the events of the night on the second day in the morning. In September 2022, the patient knocked the bedside lamp out in his sleep and caused himself injuries, sometimes injuring his wife due to actions in his dreams, and his family had no choice but to reduce the danger by tying the patient up while he slept. The patient

complained that his main distress was excessive dreaming, often nightmares, and abnormal behavior during sleep, such as talking in his sleep, falling, and causing injuries to himself and others in his dreams. Psychiatric examination after admission revealed: clear consciousness, complete orientation, contactable, general condition, no hallucinations, delusions and other psychotic symptoms, coordinated emotional reactions, and normal volitional activities. Although the patient complained that his memory had decreased compared to before and he was prone to lose things, but the memory test and assessment for the patient were still within the normal range and self-awareness existed. The patient's blood count was low, ultrasound, EEG, CT and other relevant examinations were basically normal. PSG revealed the following data: total sleep time was 522.5 minutes, sleep efficiency was 91.9%, sleep latency was 5.0 minutes, and REM sleep latency was 72.5 minutes. Percentage of stageN1 was 19.8%, percentage of stageN2 was 69.4%, percentage of stageN3 was 0.6%, and percentage of stage REM sleep was 10.2%, with sleep architecture disturbed (**Figure1**). AHI was 3.2 times/hour, not consistent with sleep apnea hypoventilation syndrome and minimum blood oxygen saturation is 92% during the whole night sleep, not consistent with hypoxemia PLMSI was 14.7, not consistent with periodic limb movements. Arousal index was 10.6, predominantly spontaneous arousals. Referring to the chin Electromyography (EMG) tone, significant RWA was seen at night (**Figure2**). MRI results showed cerebral atrophy, and no significant abnormality is seen in the bilateral hippocampal flat scan. The patient met the typical diagnostic criteria for RBD. In 2019, the patient had recurrent nightmares related to the war 40 years ago, along with a few other nightmares (being beaten by his father as a child, being hit by a cow while herding cattle, etc.). These dreams were vivid, essentially a movie-like replay of past experiences. The patient's most dangerous memories of past battles included that, four of his comrades going out together to spy on the enemy, he was the only survivor and the team leader, and 120 villagers participating in the war after the war only 40 survived. When talking about his experiences more than 40 years ago, the patient was very emotional, tearful and as if he was there. However, when not talking about these traumatic events, the patient was a soft-spoken and mild-tempered person. In the family relationship, the patient and his wife had been discordant, and he complained that his wife always lost her temper. The patient was outgoing and mild-mannered, and although he had a junior high school education, he had served as the village secretary for a long time before his retirement and had a good relationship with the neighbors. The mother was alive, the father was deceased, and there was no positive family history. Additional psychological assessment was given to the patient and the MMPI showed: Hs (69), D (54), Hy (59), Pd (65), Mf (55), Pa (69), Pt (63), Sc (68), Ma (62), Si (41). The SCL-90 (standard T score) showed: total score (69),

somatization (58), obsessive-compulsive (72), interpersonal sensitivity (61), depression (77), anxiety (76), hostility (65), phobia (44), paranoia (48), and psychoticism (72). The PTSD Check list-Civilian Version (PCL-C) showed a total score of 14 (normal score), but the single item of entry 1 showed that the patient had extremely distressing memories caused by past traumatic experiences. Taken together, the case was discussed and a combined diagnosis was added: PTSD. Clonazepam was preferred for the pharmacological treatment of RBD, and the patient's symptoms improved significantly after the administration of clonazepam 1 mg/qn orally. Trauma-Focused Cognitive Behavioral Therapy (TF-CBT) was provided for the patient's traumatic experience, which is an effective treatment. After more than 20 days of hospitalization, the patient was discharged from the hospital cured.





## Discussion

There are two characteristics of RBD: RWA and abnormal motor behavior associated with dreams, which in RBD are mostly nightmares. Some studies have shown that nightmares and abnormal sleep behaviors are closely related, and changing nightmares has the potential to improve symptoms in patients with RBD [5-7]. RWA can be diagnosed by PSG, but there is a lack of clinical experience and research on the assessment and intervention of dreams and their associated psychological factors in RBD. Meanwhile, PTSD is currently mainly diagnosed clinically by the Diagnostic and Statistical Manual of Mental Disorders Fifth Edition (DSM-5) of the American Psychological Association (APA) and the International Statistical Classification of Diseases and Related Health Problems 11<sup>th</sup> Revision (ICD-11) of the World Health Organization (WHO), usually combined with self-rated scales for screening and assessment, but there are few clear diagnostic criteria for physiological data. Sleep disorders are one of the common features of PTSD, and patients with PTSD may suffer from various complex sleep problems such as nightmares and insomnia, but there has been a lack of studies with clear physiological indicators to guide the diagnosis and treatment of PTSD patients with concomitant sleep disorders [8-12]. Although there have been previous studies on sleep disorders in PTSD by PSG, with the variable results of PSG possibly related to age, traumatic events, and other factors, there is currently no clear basis for diagnosis and differential diagnosis [11,12]. Accurate diagnosis of PTSD in the clinical setting often relies heavily on the physician's experience and ability to gain a more comprehensive understanding of the patient's condition, otherwise misdiagnosis and omission may occur. Nightmares of PTSD and dreams of RBD have a high degree

of similarity in presenting symptoms. Clinically, it is important to consider that the diagnosis and treatment of RBD and PTSD need to be somewhat combined, and it is possible that RBD is just a subtype of PTSD wearing the veneer of PSG. In clinical practice RBD is usually treated with medication and environmental modification, and there is a lack of research related to psychological treatment of such patients. There are clinical cases suggesting that psychological interventions targeting nightmares have a positive effect on the treatment of patients with RBD [13]. There is substantial evidence that psychotherapy is significantly therapeutic for patients with PTSD, with Prolonged Exposure (PE), Cognitive Processing Therapy (CPT), and TF-CBT being highly recommended for treatment [14]. TF-CBT usually includes behavioral techniques (e.g., exposure) and cognitive techniques (e.g., cognitive reframing) that help improve mood and cognitive regulation, help make sense of traumatic experiences, and are an effective psychotherapeutic approach [14,15]. When treating older adults with sleep disorders, psychological interventions for older adults require some specificity. According to the patient's daughter, the patient became internally vulnerable after this problem. Helping the patient reconstruct the meaning of the trauma, improving the patient's distress over the re-experiencing of the trauma, using the patient's self resources, and helping the patient to restore previous interpersonal relationships are the focus of psychotherapy in this case. In conclusion, we used the organic combination of medication and psychotherapy to treat the patient, and the treatment was effective.

## **Conclusion**

Sleep problems may be a symptom external to the patient, and the patient's diagnosis may not be limited to sleep disorder disorders. Sleep problems result from a multifactorial role, with psychological factors often being an important one, and the maintenance and development of sleep problems can often be associated with psychological aspects of the disorder. To provide a comprehensive treatment for a specific sleep problem, a detailed understanding of the patient's personal experience, personality traits, and social relationships can be used to improve the accurate diagnosis and assessment of the patient's condition and optimize the treatment plan. Psychological interventions tailored to the individual patient's experience and psychological characteristics are an important treatment means.

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