Clinically probable REM sleep behavior disorder: a case series and a literature review

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Abstract: REM sleep behavior disorder (RBD) is a parasomnia and a movement disorder, manifested by dream enactment behaviors ranging from a simple limb movement to an aggressive kicking, punching, and yelling mirroring the dream content. It can be an idiopathic, or be the heralding event of an α-synucleinopathic neurodegenerative disorder. Diagnosis depends on polysomnographic confirmation of an active EMG correlate during REM sleep with video correlate of an abnormal REM sleep behavior, or a sleep disruptive behavior by history.The management includes measures to avoid falling of bed like bed rails, padding sharp edges, sleeping on the floor or in a sleeping bag till RBD is controlled. Medications of confirmed value include clonazepam and melatonin. In this series, three patients with Parkinson's disease are presented. They have clinically probable RBD (pRBD) as the diagnosis was based on history of quite disruptive sleep behavior that responded dramatically to treatment with bedtime clonazepam.
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Introduction:

REM sleep behavior disorder (RBD) is a parasomnia with an established relationship to α-synucleinopathies, including Parkinson's disease, Lewy body disease (LBD), and multiple system atrophy (MSA). Its incidence and prevalence in the Arab patients with Parkinson's disease remain unknown.

Methodology:

A chart review of patients with Parkinson's disease who reported an abnormal sleep in neurology clinic short screening form seen in the last six months was conducted. Three patients were identified and are reported here.

Patient No. 1:

A 47-year-old male patient diagnosed with Parkinson's disease (PD) in 2005 when presented with a left hand resting tremor, bradykinesia and mild rigidity. Pramipexole was started and titrated up, over months, to a total of 4.5 mg daily, divided in three doses. He was still active, playing football and riding horses. Dopamine agonist was not enough to keep him going and carbidopa/levodopa was added. Another specialist started trihexyphenidyl twice a day that helped his tremor. Over the next 7 years, he was seen twice a year with a minimal change in his doses. Entacapone 200 mg was added to each dose of carbidopa/levodopa to help his wearing off. He continued his physical activity with minimal impairment. Freezing was his main issue and he learned to overcome it with simple tricks. He reported "bad dreams", where a black camel would attack him and he would be trying to defend himself to find out in the morning that his wife was kicked badly in her face, and she had decided to sleep in a separate bed. His wife told him he has been doing that for quite some time and he is just turning more violent. Clonazepam 1 mg at bedtime eliminated his violent dreams enactment. He declined a formal sleep study, as he was pleased with the improvement on clonazepam. No breathing difficulty at night and his wife reported no snoring or apnea attacks.

Patient No. 2:

A 65-year-old right handed gentleman was diagnosed with PD around 2003 and was seen at multiple hospitals, and had a quite reasonable control of his symptoms over the previous eight years or so on a regimen that included: carbidopa/levodopa 25/250 mg four times daily, pramipexole 1.5 mg three times daily, amantadine 100 mg twice a day and trihexyphenidyl 2.5 mg three times daily. His sleep was enough and refreshing but he continued to have violent dreams for quite some time. He would be trying to defend himself against an attacker, mostly a black camel, and he got himself injured hitting the bed's frame twice and his wife has been sleeping in a separate bed for over a year, after she was kicked badly while asleep. Clonazepam 0.5 mg at bedtime restored his sleep. His wife observed no snoring or apnea at night. A sleep study was declined.

Patient No. 3:

A 50-year-old right-handed, large corporate executive, who had Parkinson's disease since the year 2004, and was maintained on a stable regimen that included levodopa/benserazide 250/25 mg 1.5 tab four times daily, pramipexole 1.5 mg three times daily, amantadine 200 mg twice daily and

trihexyphenidyl 2 mg twice daily. He was switched to carbidopa/levodopa/entacapone when he developed wearing off but he did not tolerate the switch and entacapone 200 mg was added to each dose of levodopa/ benserazide. This improved his off time. He had dream enactment for over a year and when asked about his sleep, it was clear that his violent movements during sleep had caused him lots of injuries over the years. He would awaken from these dreams yelling and kicking, and his wife had moved to sleep in a separate bed. He required 2 mg single dose of clonazepam at bedtime to completely restore his safe sleep. No obstructive symptoms or snoring during sleep. A sleep study was declined.

Discussion:

Rapid-eye-movement (REM) sleep behavior disorder (RBD) is a parasomnia that was first described in humans in 1986[1]. RBD results from loss of normal skeletal muscle atonia during REM sleep, leading to dream enactment that ranges from simple limbs twitches, to violent kicking, punching or thrashing in an apparent response to dream content. It may lead to injury to the patient or the sleeping partner [1-3]. The dreams usually involve a chasing scene by an animal, a black camel in two of the patients in this series, and mostly the patient is trying to defend himself rather than be an attacker. RBD may be followed by a neurodegenerative disorder, mostly an α-synucleinopathy (PD, Lewy Body Dementia, Multiple System Atrophy), or remains idiopathic. Acutely, RBD can follow treatment with antidepressants or use of drugs or alcohol [2-4]. In this series, all patients developed their symptoms of disruptive sleep years after diagnosis of PD. RBD mostly affects older men. In younger people, RBD is associated with use of antidepressants and it can be an immune mediated [5-7]. RBD is diagnosed using the criteria put forward by the international classification of sleep disorders in 2005 which is currently undergoing revision, and includes[8]:

A. Presence of REM sleep without atonia (RSWA) on polysomnography.

B. At least one of the following:

1. Sleep-related, injurious, potentially injurious, or disruptive behaviors by history and/or

2. Abnormal REM sleep behavior documented during polysomnographic monitoring,

C. Absence of EEG epileptiform activity during REM sleep unless RBD can be clearly distinguished from any concurrent REM sleep related seizure disorder

D. The sleep disorder is not better explained by another sleep disorder, medical or neurological disorder, mental disorder, medication use, or substance use disorder.

Clinically probable RBD or probable RBD (pRBD) is recurrent nocturnal dream enactment behavior (DEB), and is currently being used by investigators and in epidemiological studies when polysomnographic confirmation of RBD is not feasible, or when a sleep study cannot be performed due to lack of availability of sleep centers[2]. Patients in this study were from outside town. They refused to stay overnight for a sleep study after they have responded to bedtime dose of clonazepam. Management of RBD starts with simple but important measures to ensure safety of the patient and his bed partner. Bed rails, padding sharp edges, sleeping on a mattress on the floor, sleeping in a sleeping bag have all been tried and were effective. Sleeping in a separate bed until RBD is controlled with medications is highly encouraged, due to the disastrous consequences these attacks can have[9]. Clonazepam at bedtime at a dose of 0.25-2 mg has been the drug of choice and is quite effective[10]. Melatonin has been shown to be effective in a dose ranging from 3-12 mg/night, alone or in combination with clonazepam [11, 12]. Other less proven medications that show some benefit in RBD include: Pramipexole[13], Levodopa[14], Carbamazepine[15], and Clozapine[16]. This review underlines the importance of taking a detailed sleep history, from both the patient and his bed partner, as patients might not think it is related to PD, or are embarrassed by the nature of the behaviors and totally avoid the topic during the short clinic visit.

Conclusion:

REM sleep behavior disorder is a sleep disruptive parasomnia, which unless inquired about during the routine clinic visits, can remain unrecognized and untreated. Direct questioning to the patient and the bed partner remains the most effective screening tool.

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