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Case Report

Narcolepsy in a Young Adult Initially Misdiagnosed as Depression: A Case Report

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Abstract

Narcolepsy is a chronic neurological sleep disorder characterized by excessive daytime sleepiness (EDS) and rapid eye movement (REM) sleep related phenomena such as cataplexy, hallucinations, and sleep fragmentation. Owing to significant overlap with psychiatric symptoms, particularly depression, narcolepsy is frequently misdiagnosed, resulting in delayed treatment and impaired functional outcomes. We report the case of a young adult male who presented with an 18-month history of severe daytime sleepiness, declining academic performance, and reduced motivation. He was initially diagnosed with major depressive disorder and treated with fluoxetine for six months without clinical improvement. Detailed sleep history later revealed episodes of cataplexy and hypnagogic hallucinations. Overnight polysomnography excluded obstructive sleep apnoea, and Multiple Sleep Latency Test (MSLT) demonstrated a mean sleep latency of four minutes with three sleep-onset REM periods, fulfilling ICSD-3 diagnostic criteria for narcolepsy type 1. The patient was started on modafinil therapy, resulting in marked improvement in alertness and academic performance within two weeks. This case highlights the importance of maintaining a high index of suspicion for narcolepsy in young patients with persistent fatigue unresponsive to antidepressants. Early recognition and appropriate sleep evaluation are essential to prevent prolonged misdiagnosis and ensure timely management.

Keywords: Narcolepsy, Depression, Cataplexy, Excessive daytime sleepiness, MSLT.

Introduction

Narcolepsy is an uncommon but disabling neurological disorder that disrupts sleep–wake regulation, with an estimated prevalence of 25–50 per 100,000 individuals[1]. Onset usually occurs in adolescence or early adulthood. Key clinical features include EDS, cataplexy, hypnagogic or hypnopompic hallucinations, fragmented nocturnal sleep, and sleep paralysis.[1,2]

Despite these distinct symptoms, diagnosis is often delayed for almost a decade, mainly because narcolepsy mimics psychiatric disorders such as depression.[3-5] Patients may present with tiredness, lack of motivation, impaired concentration, and low mood, leading to a psychiatric rather than neurological diagnosis. Studies report psychiatric comorbidities in over half of individuals with narcolepsy.[4]

Timely recognition is critical because early use of wake-promoting drugs such as modafinil can greatly improve academic, occupational, and social outcomes.[6,7]

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Case History

A male university student in his early twenties presented with an 18-month history of excessive fatigue, severe daytime sleepiness, and declining academic performance. He reported involuntarily dozing off during lectures and examinations, despite keeping a regular sleep schedule at night. He also experienced irritability, low motivation, and reduced social engagement.

An initial psychiatric consultation led to a diagnosis of major depressive disorder, and he was started on fluoxetine 20 mg daily. After six months of adherence, his daytime sleepiness and mood remained unchanged.

Family members noted that he frequently nodded off during meals and conversations. On further inquiry, the patient admitted to experiencing vivid hallucinations at

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sleep onset and brief episodes of muscle weakness triggered by laughter, consistent with cataplexy. He denied snoring, apnoeic events, sleep paralysis, or restless legs.

Routine laboratory investigations were within normal limits. Hemoglobin was 14.2 g/dL, total white cell count 6,800/µL, and platelet count 2.2 × 10^5/µL. Blood chemistry showed fasting glucose of 92 mg/dL, serum creatinine of 0.9 mg/dL, and urea 18 mg/dL. Electrolytes were stable, with sodium 140 mmol/L and potassium 4.1 mmol/L. Thyroid profile was normal (TSH 2.1 µIU/mL). Liver enzymes were also unremarkable, with ALT 28 U/L and AST 30 U/L.

Polysomnography

Normal sleep architecture with no evidence of obstructive sleep apnoea was evident on sleep study.

MSLT

Mean sleep latency was 4 minutes with three sleep-onset REM periods (SOREMPs), suggesting diagnosis of narcolepsy by ICSD-3 criteria (Figure 1).

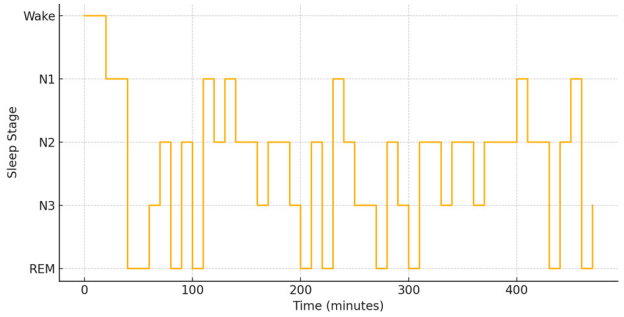

Figure 1: The hypnogram illustrates transitions between sleep stages over time. The presence of short sleep latency and multiple instances of sleep-onset REM periods (SOREMPs) are characteristic findings suggestive of narcolepsy.

Sleep latency refers to the number of minutes it took the subject to fall asleep during each nap. SOREM (Sleep-Onset REM) indicates whether REM sleep occurred within 15 minutes of sleep onset (Yes = present, No = absent).The following table presents data on five naps, showing sleep latency and SOREM were observed. [Table 1].

Nap	*Sleep Latency (minutes)*	*SOREM (Yes/No)*
1	3	Yes
2	5	Yes
3	4	No
4	2	Yes
5	6	No

The following table presents data on five naps, showing that sleep latency and SOREM were observed.

The combination of cataplexy, hypnagogic hallucinations, and diagnostic MSLT findings confirmed narcolepsy type 1 in this case.

The patient's initial antidepressant (fluoxetine) was gradually discontinued after narcolepsy was confirmed. He was started on modafinil 200 mg/day, taken as 100 mg in the morning and 100 mg at midday. Non-drug recommendations included a consistent sleep–wake routine, scheduled short naps, and good sleep hygiene.

Within two weeks of starting modafinil, the patient reported substantial improvement in alertness and was able to stay awake during lectures. His academic performance improved, and he no longer fulfilled the criteria for depression. At the six-month review, he remained stable with good adherence to therapy.

Discussion

Narcolepsy is an uncommon yet life-altering sleep disorder. It interferes with the brain's ability to regulate the sleep wake cycle, leading to persistent daytime sleepiness and symptoms linked to REM sleep such as cataplexy, hallucinations, and sometimes sleep paralysis [1,2]. Although these symptoms are distinctive, the condition is often missed, with many patients waiting close to a decade for a correct diagnosis [3]. One of the main reasons for this delay is the overlap with psychiatric illnesses, particularly depression [4,5].

Our patient's journey reflects this challenge. He initially presented with tiredness, irritability, loss of motivation, and social withdrawal symptoms that can easily be interpreted as depression. Understandably, he was started on antidepressants, but when these failed to improve his daytime sleepiness, the true underlying disorder was reconsidered. This pattern is not unusual; studies have shown that many people with narcolepsy are first diagnosed with depression or anxiety, and some even receive treatment for years before narcolepsy is identified [6,7].

The turning point in this case came with a careful history. Family members noticed his microsleeps, and direct questioning revealed cataplexy and vivid hallucinations at sleep onset. Cataplexy, in particular, is almost unique to narcolepsy type 1 and should always raise suspicion [1]. Unfortunately, patients may not volunteer this information unless specifically asked, highlighting the importance of detailed questioning and involving observers such as family or friends.

Investigations helped narrow down the diagnosis. Other common causes of daytime sleepiness such as obstructive sleep apnoea, hypothyroidism, or anaemia were excluded with sleep studies and blood tests. MSLT provided confirmation, showing very short sleep latencies and multiple sleep-onset REM periods, which are diagnostic by ICSD-3 criteria [2].

Treatment of narcolepsy typically requires a combination of medication and lifestyle changes. Modafinil is widely used as a first-line option because it improves wakefulness without the dependency risks associated with older stimulants.[6,7] Our patient responded quickly to modafinil, with notable improvements in concentration, alertness, and overall

functioning. Alongside medication, non-drug strategies such as maintaining a stable sleep schedule, taking planned naps, and following good sleep hygiene remain important tools for long-term management.

The impact of untreated narcolepsy should not be underestimated. Without appropriate therapy, patients face difficulties in education, work, and social relationships. They are also at higher risk of accidents due to unintended sleep episodes [4,8]. In contrast, our patient's outcome demonstrates how early recognition and treatment can restore both academic performance and quality of life.

This case serves as a reminder to clinicians: when a young patient presents with fatigue and low mood that does not respond to antidepressants, narcolepsy should be considered. A detailed clinical history, supported by polysomnography and MSLT, can help avoid years of misdiagnosis and prevent the significant psychosocial burden that often accompanies delayed recognition.

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