



## CASE REPORT

# Well-Controlled Narcolepsy Patient Sleepy Again

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### Abstract

Narcolepsy is associated with high prevalence of comorbid sleep disorders. Overlap in symptoms of different disorders may confound management. Sleep Medicine practitioners need to be vigilant for presence or new development of comorbid conditions to provide effective and comprehensive care. We present a patient with Narcolepsy Type 2 who developed worsening hypersomnolence due to new onset Obstructive Sleep Apnea (OSA). Treatment of OSA resulted in improvement of hypersomnolence without requiring change in therapy for Narcolepsy.

### Abbreviations

AHI: Apnea Hypopnea Index; CRSD: Circadian Rhythm Sleep Disorders; ESS: Epworth Sleepiness Score; MAD: Mandibular Advancement Device; MSLT: Multiple Sleep Latency Test; O<sub>2</sub>: Oxygen Saturation; OSA: Obstructive Sleep Apnea; PAP: Positive Airway Pressure; PLMD: Periodic Limb Movement Disorder; PLMI: Periodic Limb Movement Index; PLMs: Periodic Limb Movements; PSG: Polysomnogram; REM: Rapid Eye Movement; SDB: Sleep Disordered Breathing; SE: Sleep Efficiency; SOL: Sleep Onset Latency; SOREMP: Sleep Onset REM Period; TST: Total Sleep Time

## Case Report

37-year-old man with history of Narcolepsy Type 2 since age 22 presents to sleep clinic for worsening daytime somnolence. He has been on Modafinil 200 mg twice a day since his early 20s with good control of somnolence until 3-4 years ago when he noticed gradual worsening. Patient never experienced cataplexy, sleep paralysis, hypnagogic and hypnopompic hallucinations, frequent vivid dreams and nightmares. His Epworth Sleepiness Score (ESS) is 16. He reports average of 8 hours of sleep per night with regular sleep schedule.

He reports drinking 1 cup of coffee per day and drinks alcohol rarely. He denies illicit drug use. There were no new medical diagnoses or new prescribed or OTC medications in the past several years. His bed partner reports moderate snoring in the past few years but no witnessed apneas, periodic limb movements (PLMs) or parasomnias. He has gained 20 lbs in last 4 years. He is an IT specialist with regular daytime work hours; there was no change in work schedule in last 4-5 years.

On physical exam, BMI is 34.8. Airway exam revealed oropharyngeal crowding with Mallampati score of 4. There were no other pertinent findings.

As there is a high prevalence of comorbid sleep disorders in patients with Narcolepsy [1-3], we reviewed differential diagnosis for hypersomnolence. It includes insufficient sleep, medication effect, noncompliance with therapy, substance abuse, comorbid medical disorder, Sleep Disordered Breathing (SDB), Klein-Levin Syndrome, Narcolepsy type 1 and 2, Idiopathic Hypersomnia, Circadian Rhythm Sleep Disorders (CRSD), and Sleep-Related Movement Disorders such as Periodic Limb Movement Disorder (PLMD) [4]. Increased risk for SDB in patients with Narcolepsy appears to be related to high prevalence of obesity in this population [5,6]. Our concern was for new onset of OSA considering the development of snoring and weight gain. Ineffective control of Narcolepsy was also considered but was lower on differential diagnosis. Insufficient sleep, sedating medications, noncompliance, and PLMD were unlikely per history.

We decided to pursue evaluation with a repeat polysomnogram. Results with comparison to initial sleep study are summarized in Table 1.

**Table 1:** Polysomnograms and MSLT Results.

	<b>SOL (min)</b>	<b>TST (min)</b>	<b>SE</b>	<b>AHI</b>	<b>REM latency (min)</b>	<b>Lowest O<sub>2</sub></b>	<b>PLMI</b>
PSG 2003	2	289	97%	0.3	62	91.00%	0.00%
PSG 2017	7.5	443	95.7	17	77	86%	0.00%
MSLT 2003	Mean SOL 2 min, 3 SOREMPs						

Based on polysomnogram results, patient was diagnosed with new onset OSA. After review of multiple treatment options with the patient including positive airway pressure (PAP) therapy, mandibular advancement device (MAD) and surgical options, the collaborative decision was to start AutoPAP at a pressure of 5-15 cm H<sub>2</sub>O. Weight loss counseling was also provided. He continued to take Modafinil 200 mg twice a day. Follow up visit in 2 months revealed improvement in daytime somnolence with ESS of 10. Patient was satisfied with symptomatic improvement and so we did not feel that change in regimen for treatment of Narcolepsy was warranted.

### Disclosures

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### Conflict of Interest

Authors have no conflict of interest.

### References

- Jennum P, Ibsen R, Knudsen S, Kjellberg J (2013) Comorbidity and mortality of narcolepsy: A controlled retro- and prospective national study. *Sleep* 36: 835-840.
- Frauscher B, Ehrmann, Mitterling T, Gabelia D, Gschliesser V, et al. (2013) Delayed diagnosis, range of severity, and multiple sleep comorbidities: A clinical and polysomnographic analysis of 100 patients of the innsbruck narcolepsy cohort. *J Clin Sleep Med* 9: 805-812.
- Nevsimalova S, Pisko J, Buskova J, Kemlink D, Prihodova I, et al. (2013) Narcolepsy: Clinical differences and association with other sleep disorders in different age groups. *J Neurol* 260: 767-775.
- Sateia MJ (2014) International classification of sleep disorders-third edition: Highlights and modifications. *Chest* 146: 1387-1394.
- Dahmen N, Bierbrauer J, Kasten M (2001) Increased prevalence of obesity in narcoleptic patients and relatives. *Eur Arch Psychiatry Clin Neurosci* 251: 85-89.
- Kok SW, Overeem S, Visscher TL, Lammers GJ, Seidell JC, et al. (2003) Hypocretin deficiency in narcoleptic humans is associated with abdominal obesity. *Obes Res* 11: 1147-1154.