

Category [Case Report]

**Rapid Resolution of Intense Suicidal Ideation after Treatment of Severe
Obstructive Sleep Apnea**

Lois E. Krahn, MD

Bernard W. Miller, RPSGT

Larry R. Bergstrom, MD

From the Department of Psychiatry and Psychology (L.E.K.),
The Mayo Clinic Sleep Disorder Center (L.E.K., B.W.M.), and the Division
of Regional and International Medicine (L.R.B.), Mayo Clinic, Scottsdale,
Arizona.

Address reprint requests to Lois E. Krahn, M.D., Department of
Psychiatry and Psychology, Mayo Clinic, 13400 East Shea Boulevard,
Scottsdale, AZ 85259. Telephone: (480)-301-8297. Fax: (480)-301-6258.
E-mail: krahn.lois@mayo.edu.

The authors have no conflict of interest or financial
involvement with this manuscript.

Text word count: 1105

Abstract word count: 151

©2007 Mayo Foundation for Medical Education and Research

Abstract

Patients with insomnia may develop suicidal ideation; however, we know of no reports of suicidal ideation associated with obstructive sleep apnea. We report on a 74-year-old man who presented to his primary care physician with excessive daytime sleepiness, poor quality nocturnal sleep, depressed mood and suicidal ideation with active suicide plans. An emergency outpatient psychiatry consultation was arranged. The patient declined psychiatric hospitalization. He agreed to a trial of continuous positive airway pressure, using a self-titrating machine, followed by an urgent sleep study. Polysomnography revealed an apnea hypopnea index of 64, arousal index of 91 and minimum oxygen saturation of 65%. The patient's sleep and excessive daytime sleepiness responded to nCPAP. The patient declined antidepressant medication but had excellent adherence to nCPAP. Suicidal ideation and depression resolved promptly and at 4-month followup were in remission. Further studies examining the relationship among untreated obstructive sleep apnea, depression and suicidal ideation are warranted.

Key Words: obstructive sleep apnea, suicidal ideation, depression

Abbreviations

OSA, obstructive sleep apnea

nCPAP, nasal continuous positive airway pressure

EDS, excessive daytime sleepiness

HIPAA, Health Insurance Portability and Accountability Act

REM, rapid eye movement

AHI, apnea hypopnea index

Introduction

Severe obstructive sleep apnea (OSA) is known to adversely affect quality of life. Patients with undiagnosed sleep disorders seek assistance from a variety of physicians, including primary care and psychiatrists, while wait-listed for a sleep study.¹ Patients with untreated OSA have been reported to present with depressed mood with an overall prevalence of 40% and 12% having moderate to severe symptoms.^{2,3} The impact of nasal continuous positive airway pressure (nCPAP) for treating severe obstructive sleep apnea on depressed mood associated with intense suicidal ideation in the absence of any other treatment for depression has not been previously reported.

Report of Case

The patient is a 74-year-old man who presented to his primary care physician with severe excessive daytime sleepiness (EDS), disruptive snoring, poor quality nocturnal sleep, severely depressed mood, hopelessness, anhedonia, fatigue and intense suicidal ideation with active planning.

This patient's depression met DSM-IV criteria for major depression based on depressed mood, poor concentration, anhedonia, hopelessness, poor energy and poor sleep. There were no previous episodes

or family history of depression. Alcohol was not a contributing factor given his pattern of one alcoholic drink a day. No past history of alcohol problems. The patient's sleep disturbance was significant for sleep maintenance difficulties with multiple awakenings during the night presumably due to apneic events. He infrequently had initial insomnia which was short term and always associated with acute stress.

Previously obtained overnight oximetry, with a nadir of 59% saturation, was suggestive of obstructive sleep apnea and polysomnography was pending. Emergency outpatient psychiatry consultation was arranged that identified that the patient felt hopeless and had considered specific means to end his life. The patient had no past psychiatric history. The patient was unaccompanied and refused contact with his family. Despite the patient's request that information not be conveyed to family members, the situation was judged to be a medical emergency and in accordance with Health Insurance Portability and Accountability Act (HIPAA), the patient's wife was contacted and asked to become involved. The patient declined voluntary psychiatric hospitalization, a decision subsequently supported by his wife, an adherent Christian Scientist. The patient repeatedly denied that his life was worth living with his current degree of disrupted sleep, hopelessness, and endorsed severely depressed mood. He identified 3

different potentially lethal plans to end his life and had recently been revising his will. The patient denied that he intended to attempt suicide imminently, and involuntary psychiatric hospitalization was not feasible based on Arizona law. Because of religious beliefs, the patient also rejected antidepressant medications after a long discussion about the role of these medications in the treatment of depression.

This patient had multiple symptoms of depression that met the DSM-IV criteria for major depression. Of note, rapid eye movement (REM) latency was not decreased. However, the patient's ability to reach stage REM may have been influenced by his severely disrupted sleep architecture as demonstrated by his elevated arousal index. To our knowledge, the significance of initial REM latency with respect to depression in the setting of severe OSA is not understood.

The patient agreed that his sleep disturbance was his single most distressing factor. He conceded a measure of hope that his life was worth living if he could maintain alertness during the day and sleep better at night. He agreed to a sleep study with interim use of an nCPAP device and outpatient followup. On the night of the psychiatric consultation, nCPAP was initiated utilizing a loaned self-titrating unit resulting in markedly improved sleep. The first morning the patient described less intense suicidal

ideation and the patient continued to use the auto-PAP device for the next 3 nights. The next night, a split-night sleep study determined an apnea hypopnea index (AHI) of 64, arousal index of 91 and oxygen saturation nadir of 65%. Initial REM latency was 120 minutes and arousal index 91 (85% respiratory related). In the laboratory when nCPAP was titrated to 12 cm H₂O, his sleep improved.

Closely monitored with telephone calls and office visits, the patient described progressive improvement in his depressed mood. He was very pleased with his improved quality of sleep with nCPAP, which he used consistently. Two weeks after the sleep study, the patient denied all residual symptoms of depression. Followup at 1, 2 and 3 months confirmed ongoing remission.

Discussion

Suicidal ideation rightfully is considered a medical emergency warranting urgent assessment and intervention to prevent self-inflicted injury and death. When feasible, patients are typically referred to psychiatrists who determine the risk that a patient will act on their suicidal ideation and need for emergency treatment. Whether psychiatric hospitalization is pursued depends on whether the patient appears to be at imminent risk of a suicide attempt as well as the state laws concerning

involuntary treatment. Arizona state law does not allow for an emergency hold that in other jurisdictions permits additional assessment in a hospital setting of a patient potentially at risk. Arizona physicians must directly complete a petition to a judge for involuntary psychiatric hospitalization that is generally accepted only if the patient makes unambiguous threats of imminent self-harm. This patient made alarming statements about suicide plans, appeared hopeless and refused contact with family, he was judged not to be at imminent risk. This patient was at least hopeful about intervention for his sleep symptoms, willing to undergo a sleep study and try treatment.

Several studies using different methodologies have identified depressed mood has been a symptom of untreated OSA. Apnea severity has correlated with depression.⁴ Methodological and logistical issues, including the low threshold for initiating antidepressant medications for even mild depression, hamper efforts to collect more research data.⁵ Nasal CPAP has been described as improving the degree of depressed mood in patient with OSA.³

This case raises issues pertaining to all patients, especially those without a past psychiatric history, who present with severely depressed mood and suicidal ideation. Briefly assessing for a severe sleep disorder by inquiring about snoring, EDS and disturbed sleep appears prudent.

Overnight oximetry could be helpful in identifying patients with significant oxygen desaturation as a cost effective and convenient screening test with a positive predictive value for OSA potentially available in on an inpatient psychiatric unit.⁶ Polysomnography and prompt initiation of nCPAP may be a valuable resource. In this case, access to a self-titrating CPAP machine expedited treatment when diagnostic testing was not immediately available.⁷ The utility of this newer technology in urgent situations remains unclear. The standard of care for a patient with major depression and suicidal ideation is intensive psychiatric treatment. Although the patient described in this case refused psychiatric hospitalization and antidepressants, nCPAP could be added to conventional psychiatric treatment in more typical scenarios.

References

1. Smith R, Ronald J, Delaive K, Walld R, Manfreda J, Kryger MH. What are obstructive sleep apnea patients being treated for prior to this diagnosis? *Chest* 2002;121:164-172.
2. McCall WV, Harding D, O'Donovan C. Correlates of depressive symptoms in patients with obstructive sleep apnea. *J Clin Sleep Med* 2006;2:424-426.
3. Schwartz DJ, Kohler WC, Karatinos G. Symptoms of depression in individuals with obstructive sleep apnea may be amenable to treatment with continuous positive airway pressure. *Chest* 2005;128:1304-1309.
4. Aloia MS, Arnedt JT, Smith L, Skrekas J, Stanchina M, Millman RP. Examining the construct of depression in obstructive sleep apnea syndrome. *Sleep medicine* 2005;6:115-121.
5. Andrews JG, Oei TP. The roles of depression and anxiety in the understanding and treatment of Obstructive Sleep Apnea Syndrome. *Clinical psychology review* 2004;24:1031-1049.
6. Martinez MW, Rodysill KJ, Morgenthaler TI. Use of ambulatory overnight oximetry to investigate sleep apnea in a general internal medicine practice. *Mayo Clinic proceedings* 2005;80:455-462.

7. Mulgrew AT, Fox N, Ayas NT, Ryan CF. Diagnosis and initial management of obstructive sleep apnea without polysomnography: a randomized validation study. *Annals of internal medicine* 2007;146:157-166.