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CASE REPORTS

Dissociative Identity Disorder CPAP Adherence: An Uncommon Factor in Obstructive Sleep Apnea

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We present a case of a patient with dissociative identity disorder and symptomatic sleep apnea who was treated with continuous positive airway pressure (CPAP). CPAP use depended upon which personality the patient exhibited but apnea reduction did not. This case illustrates in one individual how personality can positively or negatively affect CPAP adherence.

Keywords: adherence, CPAP, OSA, personality, sleep apnea

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INTRODUCTION

Presented is a case of a patient with dissociative identity disorder and symptomatic sleep apnea who was treated with continuous positive airway pressure (CPAP). This case illustrates in one individual how personality can positively or negatively affect CPAP adherence.

REPORT OF CASE

A middle-aged Caucasian woman was referred to the Sleep Clinic by her primary care physician in 2014 for complaints of unrefreshing sleep upon awakening, snoring, and witnessed apneas. She reported an Epworth Sleepiness Scale score (14/24). Polysomnography showed mild obstructive sleep apnea: apnea-hypopnea index (AHI) 8.4 events/h, REM AHI 13.1 events/h, mean oxygen saturation of 90%, and time spent with oxygen saturation less than 88% of 5.4 minutes. Despite a favorable attitude, and a self-report that CPAP generally resulted in restorative sleep and relief of symptoms, overall adherence to therapy was less than optimal (usage of > 4 h/night was on approximately 50% of nights). In a follow-up review of barriers to use (financial issues, mask comfort, machine noise, sleeping arrangements, attitude, etc.), the discussion turned to a comorbid diagnosis of dissociative identity disorder. The spouse noted that certain personalities decided her CPAP use; the patient was unaware of this possibility.

Her history supported consideration of this personality disorder. There were traumatizing events in her childhood (eg, sexual abuse by babysitter, social isolation in puberty, and physically abusive relationships). In the past, abuse by a teenage boyfriend triggered changing personality states characterized by amnestic periods lasting for hours, chronologic disorientation, insecurity, and in the separate states, lack of concentration and feelings of de-realization (eg, certain situations carried the patient's thoughts back to childhood). However, the patient became functional in society, having married 6 years ago and maintaining several years of employment with the same employer.

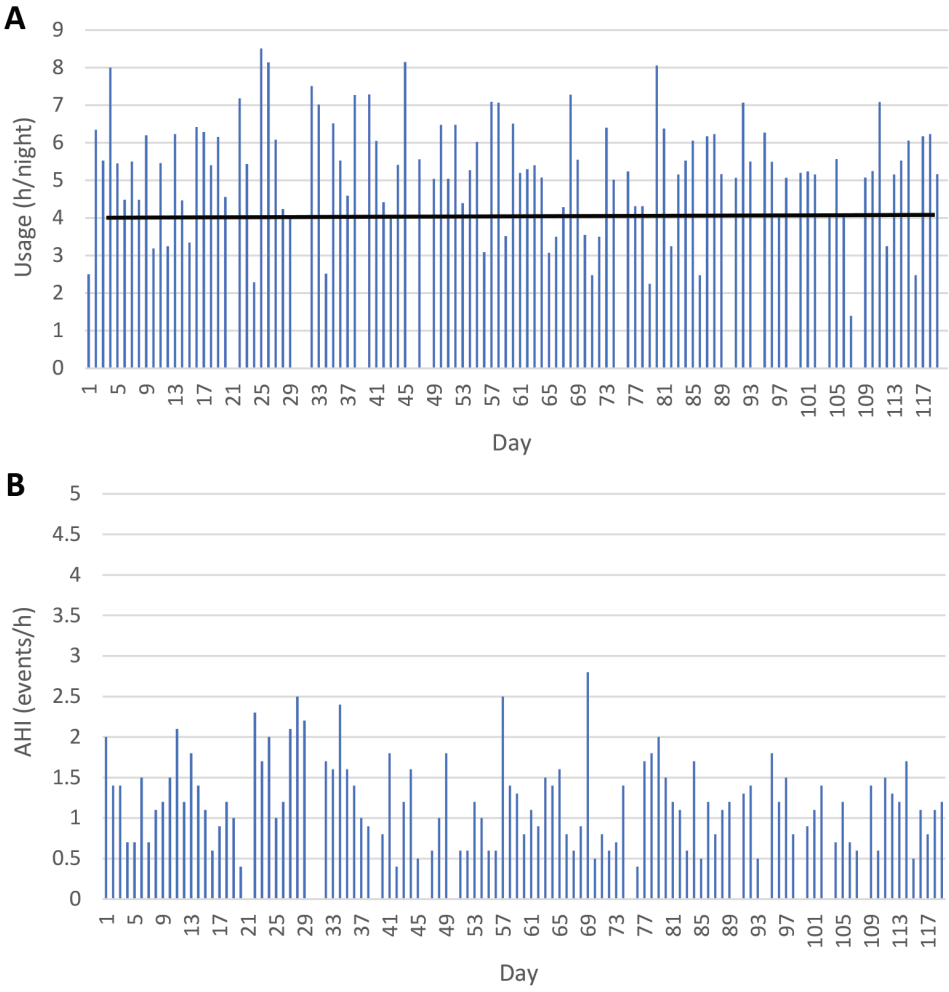
This prompted us to undertake a prospective collection of daily CPAP data along with spousal reports of the daily personalities.

Dissociative identity disorder was confirmed by two board-certified psychiatrists based on the systemic network of the patient dynamics of cognitions, emotions, and behavior, and a standard questionnaire.[1,2] At one point, it was estimated she had 13 personalities. The husband was observant of these personalities and volunteered to collect a synopsis of her personality once a day for the observation period. Approximately once a month the patient, husband, and sleep physician met to download data from the CPAP machine and review results, without specific attention to the personalities. The download provided daily hours of CPAP, and an estimated AHI, during use.[3] We planned for at least 7 months of collection of spousal reports, not knowing how often a personality would change.

The patient and husband reported the predominant sleep period was at night, and attempted CPAP use occurred almost every night. **Figure 1** shows adherence (hours used per night) and AHI (events/h during use) during the entire recording period. The average usage of at least 4 h/night was 74.7%, including nights where there was no use. When used, the recorded AHI was < 5 events/h.

Over the 7-month recording period, six personalities were noted by the spouse by diary capture. "Mrs. B" appeared 192 days (88%) and "Mrs. C," 10 days (4%), and were the most

Figure 1—Usage and AHI.



Usage **(A)** and AHI **(B)** are shown for the 120 consecutive days of the 7-month observation period. The black horizontal line indicates the 4-hour usage threshold that defines adherence. The percentage of nights that CPAP use was at least 4 h/night was 74.7%. When CPAP was used, the AHI remained less than 5 events/h. AHI = apnea-hypopnea index, CPAP = continuous positive airway pressure.

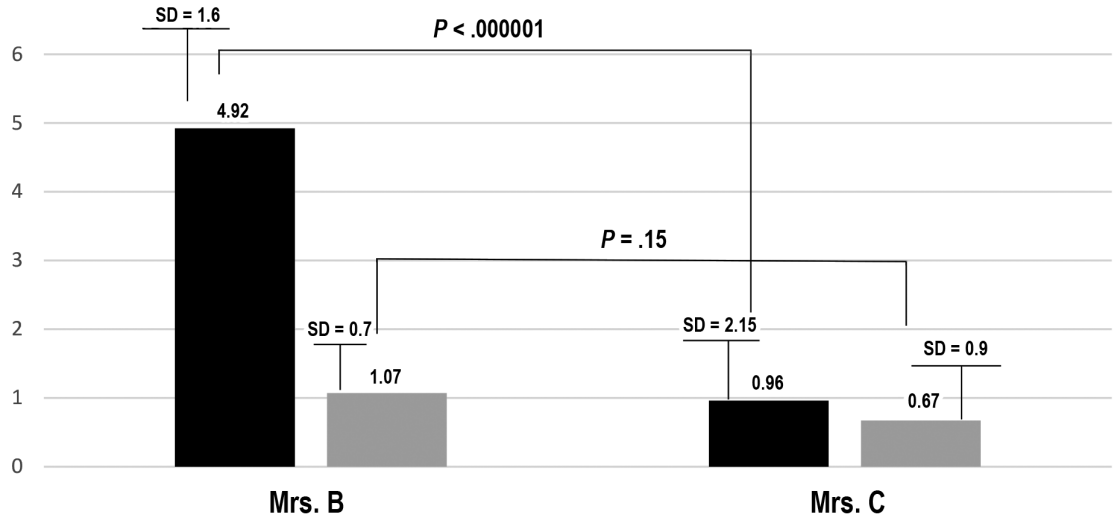
represented. The other four personalities occurred at a lower frequency (a total of 8% of the reports). The personalities of this patient were correlated to CPAP records. **Figure 2** displays the values for adherence and effectiveness for the higher represented personalities. For the other four personalities use was very low.

DISCUSSION

Dissociative identity disorder, formerly called multiple personality disorder, is an uncommon and controversial disorder. In individual case studies, measures such as handedness, handwriting, alpha frequency, regional brain blood flow, and visual evoked responses, are reported to vary according to personality.[4,5] There are, however, no reports of change in adherence to chronic therapy, where there is a volitional component. We took the opportunity to use CPAP technology to obtain an objective correlate to both its effectiveness (AHI) and use (adherence) to test an observation by the husband to suggest that the different personalities affect adherence.

Although the patient knew that she generally felt refreshed when she used CPAP, she was unaware that her personalities affected CPAP use. Dissociative states have a restricted field of consciousness, and are organized around one main fixed idea that directs an individual's thoughts, emotions, perceptions, sensations, and actions, and can be accompanied by amnesia.[4,5] We suspect that when the patient was faced with some relevant potent (conditioned) stimuli,[1] she might in turn have different attitudes toward CPAP use. The personality trait that led Mrs. C to be nonadherent to CPAP therapy was her desire to please her husband. The CPAP machine was an obstacle to achieving intimacy, and the appearance of the CPAP machine was undesirable. Her husband did not like the CPAP machine, so she did not use her CPAP in an effort to please him. In addition, she reported the tubing length was not long enough and prevented the ability to "cuddle with her husband." She also reported the appearance of the CPAP machine appeared "foolish." She also

Figure 2—Usage and AHI by personality.



Black bars represent the mean CPAP usage (h/night), and gray bars represent mean AHI (events/h) during use. Whiskers show standard deviation. Values for the two highest represented personalities are presented: Mrs. B and Mrs. C. Usage varied significantly, but AHI metrics were similar between personalities. AHI = apnea-hypopnea index, CPAP = continuous positive airway pressure, SD = standard deviation.

perceived the CPAP to be a ventilator and did not believed she required such treatment. Another of the patient's personalities, Mrs. B, was receptive to the treatment, used it, and found benefit. This might have reinforced her use and in part explains the overrepresentation of this personality during this period of CPAP use.

It is possible, but not probable, that the husband knew the use profile each night and then assigned a personality, but we consider this unlikely. A metric of CPAP use is available on the machine but only with a special entry sequence. We do not suspect secondary gain. In addition, the CPAP dataset represents metrics obtained predominantly during sleep, and thus not under proprioceptive control.

It is known that CPAP adherence in groups of patients depends on many personal factors including an individual's self-efficacy, motivation, attitude,[3,6] and personality. This is especially the case in those with a high internal locus of control and high self-efficacy that identify with self-referral for treatment and active coping skills.[7] In this instance, we show that different personalities in the same patient may affect management.[8] Currently, the patient is obtaining psychotherapy with the goal of providing insight that she should maximize her CPAP use as it would promote good health among all her personalities. The sleep specialist may not be in the position to diagnose this disorder but might want to pay some attention to patients with this uncommon disorder.

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DISCLOSURE STATEMENT

Work for this study was performed at MetroHealth Medical Center, Cleveland, OH. The authors report no conflicts of interest.