

UARS presenting with the symptoms of anxiety and depression

Case Report

Erdogan Kunter^{1*}, Ozkan Yetkin², Hakan Gunen²

¹ Department of Pulmonary Diseases, GATA Haydarpasa Training Hospital, 34660 Uskudar Istanbul, Turkey

² Department of Pulmonary Diseases, Inonu University Medical Faculty, 44080 Malatya, Turkey

Received 1 March 2009; Accepted 18 November 2009

Abstract: Upper airway resistance syndrome (UARS) is a condition where the apnea-hypopnea index is less than 5 and respiratory-effort related arousal index is more than 10. The clinical presentation of UARS may be the same as obstructive sleep apnea-hypopnea syndrome (OSAS); it sometimes shows up with symptoms hardly suggestive of a sleep-disordered breathing. A 17 year-old male patient had applied to a local psychiatry clinic and complained of chronic fatigue, insomnia, behavioral and academic problems and was treated for anxiety and depression. After a period of unresponsive treatment, he was sent to a sleep center for evaluation of insomnia, which turned out to be a fragmented, unrefreshing sleep episode. Polysomnographical evaluation revealed that he had UARS without OSAS. His complaints decreased dramatically after he received CPAP treatment. This case shows that UARS should be considered in young patients with functional somatic syndromes even if the clinical presentation does not apparently imply the condition.

Keywords: Upper airway resistance syndrome • Functional somatic syndromes

© Versita Sp. z o.o.

1. Introduction

Upper airway resistance syndrome (UARS) is a proposed diagnostic classification for patients with respiratory effort-related arousal (RERA). Whether UARS is an early or different form of obstructive sleep apnea-hypopnea syndrome (OSAS) or a distinct entity is still an issue of debate. In fact, both situations apparently exhibit the same underlying pathophysiology; both are risk factors for symptoms of unrefreshing sleep, daytime somnolence and fatigue. RERA is scored when there is a sequence of breaths lasting at least 10 seconds characterized by increasing respiratory effort or flattening of the nasal pressure waveform, which subsequently leads to an arousal from sleep when the breath sequence does not meet criteria for an apnea or hypopnea episode [1,2]. UARS is diagnosed when the apnea-hypopnea index (AHI) is less than 5 and RERA index is more than 10 [3,4].

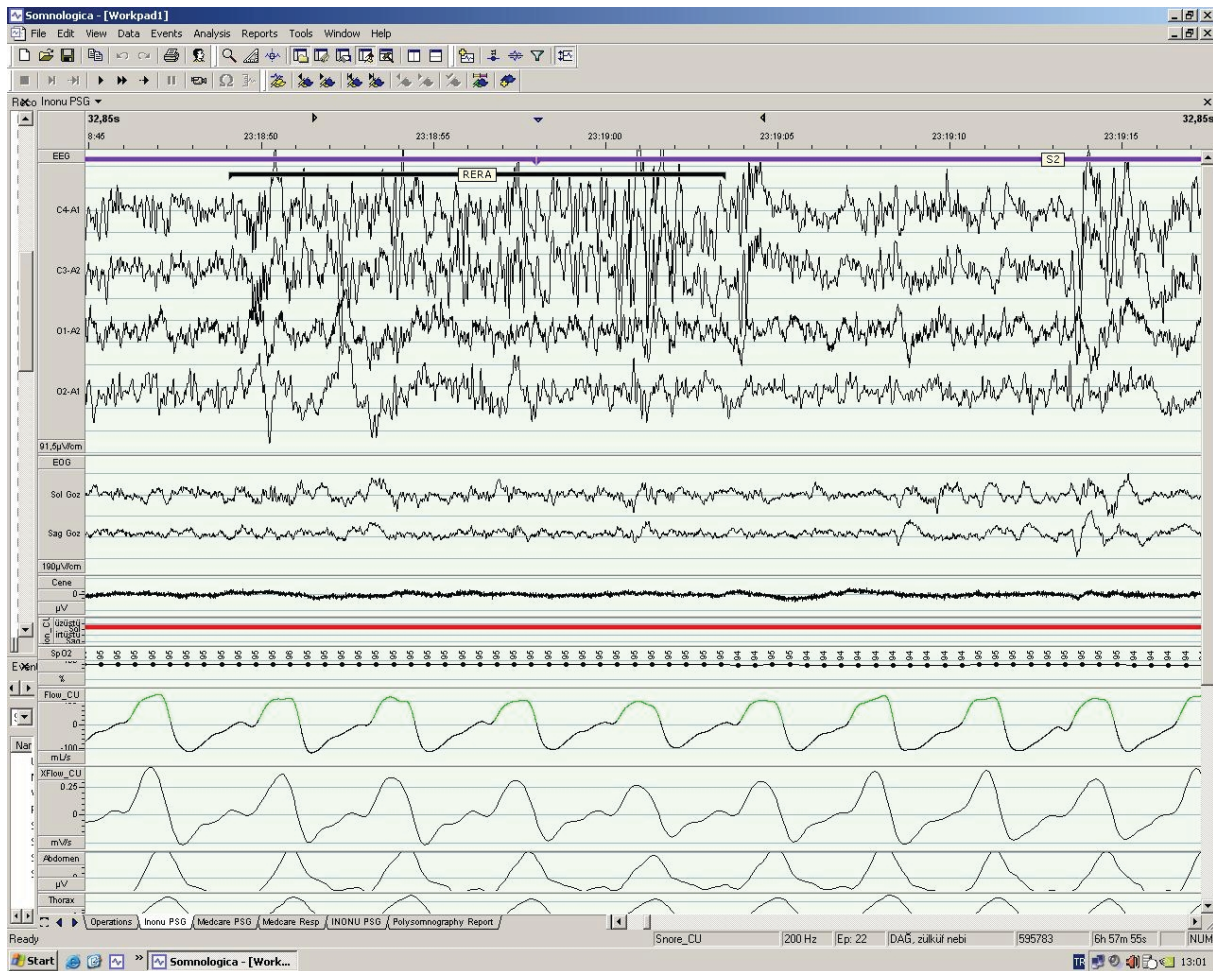
The clinical presentation of sleep-related breathing disorders may be quite different in children in

comparison to adults, and the situation of adolescents with these disorders may be even more complicated. Therefore, differential diagnosis is crucial in deciding the most appropriate treatment modality. Here we present a case whose seemingly psychiatric complaints could not be relieved until the final diagnosis of UARS was established and treated.

2. Case Report

A 17 year-old male patient had applied to a local psychiatry clinic two years ago and complained of chronic fatigue, insomnia, difficulties in social relations and school activities. His symptoms did not ameliorate in spite of his irregular treatment with hypnotics, sedatives and anti-depressives during a 2-year period, which was coupled with diagnoses of depression and anxiety. As attempts were made to treat his psychological/behavioral problems, he was referred to our clinic for polysomnographical (PSG) evaluation of insomnia.

* E-mail: erkunter@hotmail.com

Figure 1. Epoch showing RERA and pathogmonic inspiratory flow contour obtained from nasal canula.

Before the PSG evaluation was conducted, the patient was examined physically, and his clinical history was obtained. In addition, standard questionnaires addressing his sleep status, were filled out by the patient. His Epworth Sleepiness score was <10, and he was complaining about frequent sleep interruptions rather than an inherent difficulty in going into sleep or day-time sleepiness.

He was a non-obese young teenager; systemic physical examination results revealed that he had a normal physical profile. Biochemical analysis indicated nothing irregular and reported all enzymes and hormones to be within normal limits. An ear-nose-throat evaluation revealed no structural abnormality. All other organ-system examinations were also within normal limits.

PSG test results were as follows: sleep efficiency 82%; sleep-stage architecture were within normal limits - N1, 3%, N2, 54%, N3, 23% and rapid eye movement (REM) 20%; apnea-hypopnea index

(AHI): 4.5; arousal index 19.5; RERA index 10.5. We did not measure the esophageal pressure during sleep; however, a pathogmonic inspiratory flow contour obtained from nasal canula (Figure 1), an increased RERA index, and other polysomnographical findings suggested UARS. Therefore, the patient was given another night of PSG for titration of continuous positive air pressure (CPAP) to ameliorate the RERA index to <5. Subsequently, he was prescribed a 7 cm H₂O of CPAP. At the end of his first night of continual sleep, he reported positive changes in his mood and behavior, i.e., refreshing sleep and a renewed sense of confidence. Follow-up visits proved that his complaints resolved dramatically, and no further complaints about fatigue from the patient were observed

3. Discussion

The prevalence of OSAS is approximately 2% in otherwise-healthy young children. The prevalence in infants and adolescents is unknown [1]. Technically, UARS is a form of sleep-disordered breathing in which transient increases in upper airway resistance result in repetitive EEG arousals. UARS is not associated with apnea or diminished airflow, although symptoms of OSAS like snoring and excessive daytime sleepiness may accompany. The prevalence of UARS in the group of patients applying to sleep centers with the complaints of snoring and/or excessive daytime sleepiness is around 10-15% [4,5]. However, the prevalence of UARS in the absence of these symptoms is unknown.

UARS is generally diagnosed in patients with OSAS symptoms or simple snoring. However, as it is in our case, in a subset of UARS patients diagnosed by polysomnography, snoring may not be a symptom. This situation is called silent upper airway resistance syndrome [6]. It has been reported that worsening of symptoms of insomnia, fatigue and depressive mood were seen with absence of treatment of UARS and OSAS could develop in some of the patients [7].

UARS is more prevalent in children than adults and affects mostly non-obese people. The main complaints of younger patients are snoring, night sweats, distressed sleep, behavioral disturbances, and problems in school [3,4,8,9]. UARS patients frequently seek treatment with a somatic functional syndrome rather than sleep-disordered breathing. Therefore, most of these patients are seen by psychiatrists. If excessive daytime sleepiness is not an issue of complaint, most of the UARS patients

may remain undiagnosed and are left untreated [10], which was the case for the patient in question.

Functional somatic syndromes include chronic fatigue syndrome, fibromyalgia, irritable bowel syndrome, migraine/tension headaches, and temporomandibular joint syndrome. These syndromes feature the following signs and symptoms: excessive sleepiness/fatigue, sleep-onset and maintenance insomnia, unrefreshing sleep, EEG evidence of sleep fragmentation, bruxism, muscle pain/tenderness, heartburn, abdominal pain/urgency, diarrhea, headaches, depression, and orthostatic syncope. It has been suggested that while it resembles the clinical presentation of the functional somatic syndromes listed above, the clinical presentation and symptoms of UARS differ from that of OSAS. However, in UARS patients, the mechanisms responsible for functional somatic syndromes are not clear [11-13].

4. Conclusion

The etiology of functional somatic syndromes is not clear, and their treatment is largely symptomatic and of limited efficacy. It is possible that many people who suffer from the symptoms of these syndromes could be potentially treated if UARS is designated as an etiologic factor. This case seemed interesting in showing that UARS may clinically present as symptoms of chronic fatigue, anxiety and depression in young, non-obese people without any apparent structural and functional cause. Treatment success in these patients is only plausible if PSG evaluation is considered.

References

- [1] American Academy of Sleep Medicine. International Classification of Sleep Disorders, 2nd ed.: Diagnostic and coding manual. Westchester, Illinois: American Academy of Sleep Medicine, 2005
- [2] Iber C., Ancoli-Israel S., Chesson A., Quan S.F., for the American Academy of Sleep Medicine. The AASM Manual for the Scoring of Sleep and Associated Events: Rules, Terminology and Technical Specifications, 1st ed.: Westchester, Illinois: American Academy of Sleep Medicine, 2007
- [3] Wheatley J.R. Definition and diagnosis of upper airway resistance syndrome. *Sleep* 2000, 23 (Suppl 4), 193-196
- [4] Exar E.N., Collop N.A. The upper airway resistance syndrome. *Chest* 1999, 115, 1127-1139
- [5] Loubé D.I., Andrada T.F. Comparison of respiratory polysomnographic parameters in matched cohorts of upper airway resistance and obstructive sleep apnea syndrome patients. *Chest* 1999, 115, 1519-1524
- [6] Kristo D.A., Lettieri C.J., Andrada T., Taylor Y., Eliasson A.H. Silent upper airway resistance syndrome: prevalence in a mixed military population. *Chest* 2005, 127, 1654-1657
- [7] Guilleminault C., Kirisoglu C., Povares D., Palombini L., Leger D., Farid-Moayer M., Ohayon M.M. Upper airway resistance syndrome: a long-term outcome study. *J Psychiatr Res* 2006, 40, 273-279
- [8] Guilleminault C., Winkle R., Korobkin R., et al. Children and nocturnal sleeping: Evaluation of the

- effects of sleep related respiratory resistive load and daytime functioning. *Eur J Pediatr* 1982, 139, 165-171
- [9] Gold A.R., Dipalo F., Gold M.S., O'Hearn D. The symptoms and signs of upper airway resistance syndrome. A link to the functional somatic syndromes. *Chest* 2003, 123, 87-95
- [10] Bao G., Guilleminault C. Upper airway resistance syndrome--one decade later. *Curr Opin Pulm Med* 2004, 10, 461-467
- [11] Gold A.R., Dipalo F., Gold M.S., O'Hearn D. The symptoms and signs of upper airway resistance syndrome. *Chest* 2003, 123, 87-95
- [12] Aaron L., Buchwald D. A review of the evidence for overlap among unexplained clinical conditions. *Ann Intern Med* 2001, 134, 868-881
- [13] Wessely S., Nimnuan C., Sharpe M. Functional somatic syndromes: one or many? *Lancet* 1999, 354, 936-939