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Clinical Image

Hyperventilation as a Somatoform Respiratory Disorder in Adolescents

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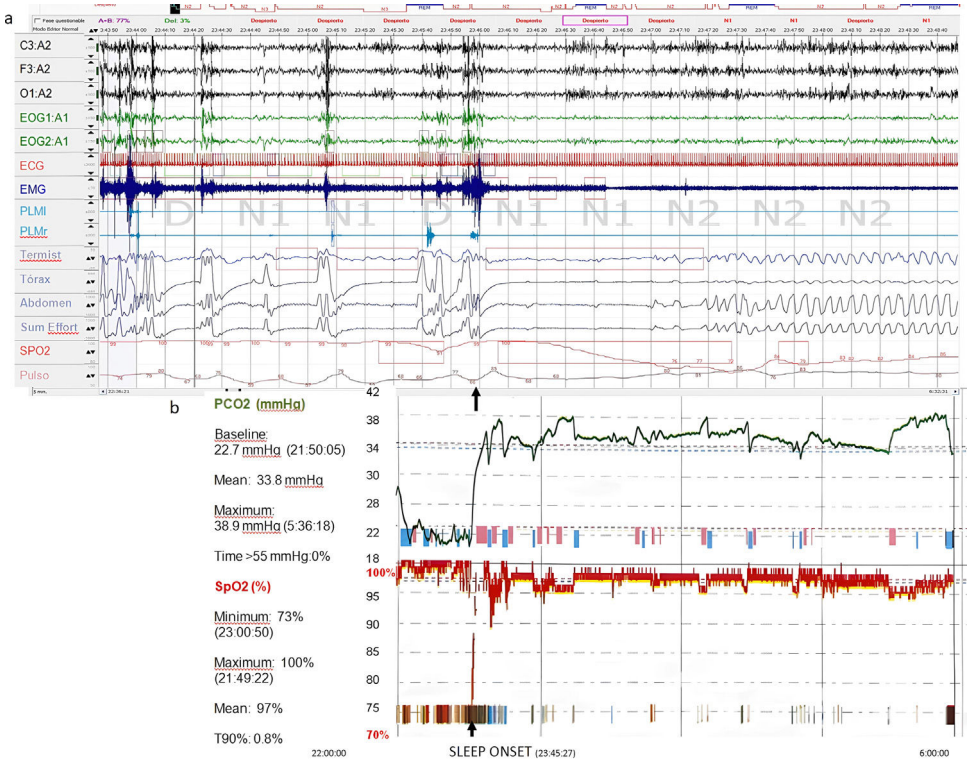

Fig. 1. (a) A 5-minute epoch nocturnal polysomnography (Somnoscreen Plus (Somnomedics-Germany)). The black box above the upper hypnogram shows the sleep stage the patient is in. The side bracket marks the respiratory sensors (nasal airflow via thermistor, respiratory effort signals (thoracic, abdominal and RIP sum belts), and oxygen saturation). At the beginning a completely irregular breathing pattern can be observed while the patient is awake. As the sleep begins, in the first half of the epoch we can see episodes of prolonged absence of flow with no respiratory effort throughout the events (central apnea), lasting up to 76 s, followed by a decrease in oxygen saturation up to 72%. The record shows a stable and regular pattern at the end of the epoch, which continues until the end of the night. (b) Summary recording of transcutaneous pCO_2 (Sentec Digital Monitoring System, Switzerland) and oxygen saturation throughout the night. On the left side, the overall values for the night are shown; the right side shows the graphic record. Lower black arrows show the onset of sleep (23:45:27). Before that moment, the pCO_2 values, as shown by the curve, are greatly decreased (22 mmHg). As sleep begins these values increase progressively (coinciding with the prolonged central apnea shown in Fig. 1) and once normal values are reached (35 mmHg), breathing is resumed and both CO_2 and oxygen saturation remain normal, until the end of the night.

A 14-year-old adolescent was referred from neuropediatrics due to an abnormal respiratory pattern. The patient reported daily episodes of hyperventilation over the past two years, not directly associated with stressful triggers but typically ceasing with distraction and absent during sleep. Subjective dyspnea and other psychiatric symptoms were also present. Despite clinical suspicion of a somatoform

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respiratory disorder, additional tests, including a chest X-ray and respiratory functional tests, were performed and returned normal results. A nocturnal polysomnography revealed an irregular respiratory pattern while awake, with decreased CO_2 levels (Fig. 1a and b). Upon sleep onset, as voluntary control of the respiratory center ceased, a compensatory pause of up to 76 s occurred, allowing CO_2 levels to normalize, followed by regular breathing that persisted throughout the night. Based on these findings, the diagnosis was confirmed. A multidisciplinary approach involving neurology, psychiatry, and psychological therapy was initiated. After starting treatment with fluoxetine and lorazepam, the episodes resolved. Somatoform disorders encompass a heterogeneous group of conditions, well classified by Grüber et al.,[1] with dysfunctional breathing as a common feature.[2] These disorders should be considered when encountering patients with recurrent symptoms not explained by structural abnormalities.

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Conflict of Interests

The authors declare not to have any conflicts of interest that may be considered to influence directly or indirectly the content of the manuscript.

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