Kleine-Levin Syndrome With Periodic Apnea During Hypersomnic Stages — E.E.G. Study

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Summary

A 33 year old male, suffering from Kleine-Levine syndrome associated with periods of apnea during the hypersomnic attacks, is reported. Ventilatory studies negate the Pickwickian syndrome.

The E.E.G.'s recorded during the hypersomnic attacks and the apneic periods showed a direct correlation between high-voltage delta waves paroxysmal E.E.G. activity, and apneic period.

Medications known to improve Kleine-Levin syndrome, in our case, had no effect upon the clinical hypersomnic and apnea periods, nor on the correlatives E.E.G.'s pattern and spirometric studies.

Theoretical considerations let us assume that these paroxysmal E.E.G. patterns associated with apnea are NRem-sleep serotonin dependent, and have an inhibitory influence on the respiratory centers, by alternating the equilibrium between the catecholamines and acetylcholine activities.

Introduction

Periodic hypersomnia, known as Kleine-Levin syndrome, is a benign syndrome, occurs in young males in the second decade of life. It is characterized by a sudden onset of sleeping attacks which last for several days, and which are often associated with increased food and fluid intake [1—8].
From mainly clinical observations, the disease is considered to be a dysfunction of the diencephalon. Some reports of cases of the Kleine-Levin syndrome note that the E.E.G. was normal [9, 10, 11, 12]. Others report a slight diffuse, non-specific change, or bursts of slow waves, more prominent in the posterior region, decreasing of the abnormality towards the end of the attack [13, 14, 15]. The paroxysmal nature of the attacks, with an abrupt onset and sudden termination, raises the question of its relationship to convulsive disorder. The paroxysmal E.E.G. findings support such a relationship [15, 16, 17]. Recently we had the opportunity to study a case of a typical Kleine-Levin syndrome, which during his hypersomnic attacks, showed periods of apnea, lasting from seconds to minutes, accompanied by a typical paroxysmal E.E.G. feature.

Results

Case History, Clinical and Laboratory Features

A 33 year male, suffering from Kleine-Levin syndrome, was admitted for investigation: the patient's main complaints were multiple diurnal narcoleptic attacks followed by bulimia. During his narcoleptic attacks, apnea of various duration was observed.

The clinical characteristics and laboratory findings are as follows: body weight—123 kg; height—166 cm; blood pressure—130/95; E.C.G., chest and skull X-ray were normal. He was alert, without cyanosis or clubbing, and there were no clinical or radiological signs of congestive heart failure. Lipidogram and cholesterol in the normal range; T3, T4; electrolytes; diurnal cortisol secretion in the normal laboratory range.

Liver functions were normal.

Blood-Gases Studies

An indwelling arterial needle was inserted into a brachial artery. Blood samples were obtained for blood-gases investigation, while the patient was alert, and during several periods of hypersomnia and apnea. The E.E.G. records were taken simultaneously.

Blood-gases obtained during alert, hypersomnia and apnea state are summarized in Table 1.

The results of the blood-gases analysis during the apnea periods were not accompanied by a pCO2 retention, but only by a fall-down in the pO2, showing a mild hypoxemia of 61.5 with a normal pCO2 and pH of 7.44.