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Case Report

Kleine-Levin Syndrome in a young woman: A case report

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Abstract

Introduction: Klein-Levin Syndrome (KLS) is a rare disorder identified by recurrent hypersomnia, over-eating, or hypersexuality and is associated with cognitive dysfunction or abnormal behaviors.

Case presentation: In this paper, we presented a 36-year-old single female with chief complaints of headaches, tiredness, and sleepiness. She reported attacks of hypersomnia and memory deficits from childhood. She experienced addiction to alcohol, caffeine, and sugar, also depression, and suicidal taught. The full medical work-up did not indicate any organic illness. Polysomnography and Multiple Sleep Latency Tests indicated narcolepsy. Finally, she was diagnosed with Klein-Levin syndrome.

Conclusion: Kleine-Levin Syndrome is a challenging diagnosis. The medical history of clinical symptoms and exclusion of other diagnoses can lead to better diagnosis in patients with hypersomnolence.

Keywords: Hypersomnia, Klein-Levin Syndrome, Polysomnography

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Introduction

Klein-Levin Syndrome (KLS) is a rare disorder identified by recurrent hypersomnia, over-eating, or hypersexuality and is associated with cognitive dysfunction or abnormal behaviors (1-3).

This estimated rate of this disorder is 1-5 cases in a million population (4), with more proportion in males (60-80%) and sporadic cases compared to familial cases. This disorder usually manifests in the puberty period (5-7). Although in some patients, the clinical manifestations occurred in childhood (8). The pathogenesis of this syndrome is unclear, but some etiologies were suggested, such as psychological problems, toxins, infections, inflammations, or neurotransmitter abnormalities (9). Also, hypothalamic pathology was suggested due to its role in sleep disturbances, appetite, and sexual behaviors (10).

Case presentation

A 36-year-old single female with a master's academic degree was referred to the neurologist with chief complaints of headaches, weakness, and sleepiness.

In her medical history, she had oversleeping in different periods of life, but in the last few years,

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it has become more severe, and now, due to the accompanying headache, this oversleeping has become intolerable. She had sleep problems since she was ten years old and could not stay awake while studying. At the same age, she went to the physician due to headaches, weakness, and long periods of sleep, but no diagnosis was made for her. She had a difficult childhood. She has no memories before the age of 6. At 6, she migrated from another city to Mashhad with her family. From seven to seventeen, she was sexually assaulted by her father. Also, her aunt, with whom she lived with her family, sometimes beat her. However, she did well in high school, went to university at eighteen, and has always had an A average. In 2009, when she was 25 years old, his sister died due to an unknown cause (probably cardiac arrest). After her sister's death, she became depressed and had serious thoughts of suicide. Between 2003 and 2012, she was addicted to alcohol. After she stopped drinking alcohol, she started using caffeine, using 12 cups of coffee daily.

In 2012, she migrated to Malaysia to continue her studies. At this point, she had periods of two or three days of oversleeping, and because of oversleeping, she failed two of her exams.

In 2015, she returned to Iran for the winter vacation. During this time, she experienced much stress. Her mother suffered a heart attack, and her father suffered a stroke. Also, she found out that one of her brothers had schizophrenia. When she returned to Malaysia, she tried to forget all these issues and became more active. She worked more than before, exercised more than ever, and started a new relationship. However, at the same time, she felt depressed and had suicidal thoughts. During this period, she has gradually become addicted to sugar. She had periods of heavy sleep for several days, which were more than before. She woke up only to eat food and had problems with her appointments. During this time, she also had panic attacks.

The periods of oversleeping have gradually become more severe, so due to oversleeping, she could not finish her thesis within the set deadline, and she will return to Iran after completing her educational visa.

In 2018, she mentioned a period of oversleeping for one month, accompanied by severe weakness and headaches.

She has had long-term memory deficits since childhood and does not remember many of her memories. In recent years, she does not remember some of her writings, the things bought by herself, or the familiar places.

In 2018, after a sleep attack due to a headache, she was visited by a neurologist and was referred to a psychiatrist. In addition to a complete psychiatric evaluation, a full medical work-up was performed. All medical evaluations were normal, and polysomnography was performed. Patient's Epworth Sleepiness Scale (ESS) was 13 of 24. Sleep latency was 3 minutes. STOP-BANG score was 2 of 8. Multiple Sleep Latency Tests indicated narcolepsy. Also, the patient had repeated limb movements during sleep time.

Finally, she was diagnosed with Klein-Levin syndrome. She underwent medical treatment using Modafinil, Bupropion, Lithium, and Amitriptyline.

Discussion

Kleine-Levin Syndrome is a challenging medical condition because the diagnosis of this condition depends on the clinical manifestations and taking history and ruling out other illnesses which mimic its symptoms (11).

An obligatory symptom of this syndrome is hypersomnia, along with tiredness and an intense need to sleep, which is prolonged with short breaks for eating or physiological needs (12). These symptoms were seen in the presented case.

Also, 75% of the patients experience alterations in their eating behaviors and may have megaphagia and a preference for eating sweets (13). In addition, especially women, some of them experience depressed moods and suicide ideations (11). These symptoms, such as addiction to sugar and caffeine or suicidal thoughts, are presented in this case.

In cognitive functions, most patients perform poorly on Wechsler Memory Scale (14). Also, some of the patients had feelings of derealization and detachment, suggesting parieto-temporal dysfunction (15). Our patient experienced cognitive deficits in memory and derealization in familiar situations. Yildirim and Ekinci presented a 20-year-old female patient who was referred to a sleep-out-patient clinic with excessive sleepiness. The first attack of sleepiness and forgetfulness occurred at 12, followed by the flu.

The hypersomnolence attacks continued once a month. She had a suicide attempt at the age of 15 years and was hospitalized in a psychiatric hospital and treated with sertraline. The attack frequency decreased for a long time until she reached 20 years old. Between attacks, she was normal in eating, sleep, or mood. The medical laboratory tests were normal. In polysomnography, three phases of REM were seen with no abnormal respiratory event. She was diagnosed as a case with primary KLS (16). The medical history and symptoms are similar to the presented case. However, she had no change in eating behavior or addiction.

In another young female patient, sleepiness attacks with cognitive impairments such as disorientation, memory deficits, and abnormal behaviors were seen during the attacks. In the MSLT test, a narcolepsy-like pattern was reported in our patient (17).

Clinical features of KLS, such as periodic sleepiness or change in behaviors through the exclusion of other diagnoses, can lead to KLS diagnosis in patients with hypersomnolence.

Conclusion

Kleine-Levin Syndrome is a challenging diagnosis. The medical history of clinical symptoms and exclusion of other diagnoses can lead to better diagnosis in patients with hypersomnolence.

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References

1. Tuzim K, Tuzim T, Urbańczuk M, Urbańczuk M, Schab K. Kleine-Levin Syndorme: aetiology and pathogenesis, symptoms, diagnosis and treatment. Journal of education, health and sport 2018; 8(8): 658-66.
2. Ortiz JF, Argudo JM, Yépez M, Moncayo JA, Tamton H, Aguirre AS, et al. Neuroimaging in the rare sleep disorder of Kleine-Levin Syndrome: A systematic review. Clocks Sleep 2022; 4: 287-99.
3. Shah F, Gupta V. Kleine–Levin syndrome (KLS). In: StatPearls. StatPearls Publishing, Treasure Island (FL); 2021. Available from: https://europepmc.org/article/nbk/nbk568756
4. Arnulf I, Groos E, Dodet P. Kleine-Levin syndrome: A neuropsychiatric disorder. Rev Neurol 2018; 174(4): 216-27.
5. Miglis MG, Guilleminault C. Kleine-Levin syndrome: A review. Nat Sci Sleep 2014; 6: 19-26.
6. BaHammam AS, GadElRab MO, Owais SM, Alswat K, Hamam KD. Clinical characteristics and HLA typing of a family with Kleine-Levin syndrome. Sleep Med 2008; 9: 575-8.
7. Naresh N, Navratan S. Sleeping beauty syndrome: a case report and review of female cases reported from India. Indian J Psychol Med 2017; 39(3): 357-60.
8. Billiard M, Jaussent I, Dauvilliers Y, Besset A. Recurrent hypersomnia: A review of 339 cases. Sleep Med Rev 2011; 15(4): 247-57.
9. AlShareef SM, Smith RM, BaHammam AS. Kleine-Levin syndrome: clues to aetiology. Sleep Breath 2018; 22(3): 613-23.
10. Arnulf I, Zeitzer JM, File J, Farber N, Mignot E. Kleine-Levin syndrome: A systematic review of 186 cases in the literature. Brain 2005; 128(Pt 12): 2763-76.
11. Assi B, Yapo-Ehounoud C, Baby MB, Aka-Diarra E, Amon-Tanoh M, Tanoh C. The Kleine-Levin Syndrome: A rare disease with often delayed diagnosis-A report of two cases in the Department of Neurology of the University Hospital of Cocody (Côte d'Ivoire). Case Rep Neurol Med 2016; 2016: 8929413.
12. Olufunke Afolabi-Brown, Thornton BA Mason II. Paediatr Respir Rev 2018; 25: 9-13.
13. Shukla GD, Bajpai HS, Mishra DN. Kleine-levin syndrome: A case report from India. Br J Psychiatry 1982; 141: 97-8.
14. Huang YS, Lin YH, Guilleminault C. Polysomnography in Kleine-Levin syndrome. Neurology 2008; 70(10): 795-801.
15. Kas A, Lavault S, Habert MO, Arnulf I. Feeling unreal: A functional imaging study in patients with Kleine-Levin syndrome. Brain 2014; 137(Pt 7): 2077-87.
16. Yildirim G, Ekinci AS. Kleine-Levin Syndrome: Two cases. Turk J Neurol 2021; 27: 426-9.
17. Alemohammad ZB, Jamshidi S, Najafi A. Periodic hypersomnolence in a young female patient: a case report and literature review. Egypt J Neurol Psychiatry Neurosurg 2022; 58: 33.