

SIX CASES SUSPECTED OF HAVING INSUFFICIENT SLEEP SYNDROME IN OUR CLINIC

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Abstract

We encountered 6 patients. They were suspected insufficient sleep syndrome complaining excessive daytime sleepiness. Four of them were surely diagnosed as insufficient sleep syndrome, but differential diagnosis was described on the other two patients. In this report, we described the diagnosis procedure and the detecting methods.

Key words : excessive daytime sleepiness, insufficient sleep syndrome, polysomnography, multiple sleep latency test

Introduction

In recent the 24-hour active society, some of the young people often fall into hyposomniac state due to chronic insufficient sleep. Therefore, we have increasingly more patients complaining of excessive daytime sleepiness. Among our patients with chief complaint of excessive daytime sleepiness, we suspected 6 cases having insufficient sleep syndrome. After polysomnography and multiple sleep latency test, four of them were diagnosed as insufficient sleep syndrome, but two as idiopathic hypersomnia. The results of this study are reported.

Cases

Case 1 : A 16-year old boy, senior high school stu-

dent. From the time when the patient was in junior high school, he had been often warned about dozing in class. Sometimes he was asleep while riding on a bicycle and fell to the ground. His habitual hours of sleeping during the night were about 7 hours. Additionally, he had been sleeping for about 5 hours during school hours, almost every day.

Case 2 : A 14-year-old boy, junior high school student. From the time when he was in third grade (age 9) in primary school, he had drowsiness in the morning. He had been dozing frequently during school hours in the morning, and he could not completely wake up until noon. His normal night sleeping hours were 6 to 8 hours.

Case 3 : A 28-year-old man, employee at a railroad company. From infancy, he used to have relatively longer sleeping hours of about 9 hours. When he was in junior and senior high school, he was often late for school and took naps almost every day during school hours. After graduating senior high school, he found a job at a railroad company and was appointed as an engineer with shift work. Since then, he began to suffer from heavy

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sleepiness and drowsiness during work hours. Once, a senior staff warned him about his long sleep. Then, he decided to cut his night sleeping hours to 6-7 hours. He began to feel extremely tired and fell into the state of incomplete vigilance and dim consciousness. One morning, a senior staff visited his apartment and found him in dim consciousness. So surprised, he called an ambulance for help.

Case 4: A 36-year-old woman, sales staff. From the time when she was 33 years old, she began to feel heavily sleepy all day without specific cause, and she used to sleep almost all day long. Gradually, she began to feel general fatigue and showed signs of attention deficit and decline in willingness. The patient visited a physician and received administration of antidepressant, but the symptoms did not improve.

Case 5: A 24-year-old woman, dentist assistant. From infancy, she used to sleep longer than others. Since she was 20 years old, daytime sleepiness increased. Sometimes, she fell asleep during walking. She began to have trouble working because of extreme sleepiness. Night sleeping hours on weekdays were about 8 hours, and she slept almost all day on holidays. In this case, sleep diary disclosed the features of delayed sleep phase syndrome although it was not typical nature.

Case 6: A 28-year-old woman, teaching staff at college of nursing. From infancy, she used to sleep longer

than others. After she entered the college of nursing, she began to suffer from heavy daytime sleepiness. She used to sleep continuously during classes. At home, she could not prepare for important examinations, so her college records showed poor results. Four years after her graduation, she was appointed to a teaching post from clinical work. Her normal sleeping hours were about 9 hours. In spite of sleeping longer, she still felt it difficult to keep awake during meetings.

Methods

All of the cases had no sign of physical disease or any psychiatric disorders such as depression and schizophrenia, which could also induce excessive daytime sleepiness (EDS). Therefore polysomnography (PSG) and multiple sleep latency test (MSLT) were performed for detect of insufficient sleep syndrome (ISS).

Results

PSG was performed at night, and MSLT was performed five times two-hourly from 9:30 in the next day. Four cases except for case 2 and 4 had PSG test. These cases instructed to sleep for more than 9-10 hours at home in the day before the night of the PSG test. In the night of PSG test, patients were allowed to sleep for at least 10 hours until their natural awaking next morning. In all of the four cases examined by PSG, sleep efficiencies were higher than 95%, and the sleep structures were also normal. There was no sleep

Table 1. Clinical feature of 6 cases who suspected insufficient sleep syndrome (ISS).

case	sleep efficiency by polysomnography	usual sleeping time (hour)	MSLT after 8 hr of nocturnal sleep (min)	MSLT after 9-10 hr of nocturnal sleep (min)	final diagnosis
1	97%	7	na	10.3	ISS
2	na	6-8	na	9.6	ISS
3	99%	8 with shift work	10	19	ISS
4	na	5-6	<u>5.7</u>	8.3	ISS
5	95%	8-10	<u>2.8</u>	<u>6.3</u>	IHS
6	99%	9	<u>6.3</u>	<u>6.9</u>	IHS

na : not available, ISS : insufficient sleep syndrome, IHS : idiopathic hypersomnia, MSLT : multiple sleep latency test
The under line emphasizes that the mean sleep latency less than 8 min. This is considered to be objective excessive daytime sleepiness, and strongly suggests IHS by International Classification of Sleep Disorders.

apnea or periodic leg movement syndrome. Sleep-onset REM periods never appeared during both nocturnal PSG and MSLT in these patients. After the PSG test, all the cases didn't feel drowsiness. As for cases 2 and 4, they were also instructed to sleep for more than 9-10 hours at home in the two days before the MSLT test. The mean sleep latencies of the case 1-4 measured by MSLT became longer than 8 min after they took sufficient time to sleep. Following to International Classification of Sleep Disorders (ICSD)¹⁾, we diagnosed them as ISS. Since the mean sleep latency less than 8 min is considered to be objective EDS.

In case 5 and 6, even after they slept for 10 hours, their average sleep latencies were less than 8 min. In the diagnosis criteria¹⁾, mean sleep latency was less than 8 min without sleep onset REM periods indicates idiopathic hypersomnia (IHS), so we diagnosed them as IHS (Table 1).

Discussion

In the case 1 to 4, EDS and related symptoms were restored to normal condition and their sleep latencies were normalized after the cases were instructed to sleep for 9-10 hours. This reveals that the symptoms in these patients were caused by ISS. With the exception of the case 3, who was working in shifts, the other 3 cases were instructed to sleep for 9 hours or more every day. This caused the EDS to disappear as previously reported^{2,3)}. The cases 1 to 4 do not fulfill all of the criteria for a long sleeper, which is one of the proposed sleep disorders in ICSD¹⁾. However, the subjects who need longer sleep for normal functioning would possibly fall into ISS in the modern 24-hour active society. More study is needed to elucidate the relationship between ISS and long sleepers. For the case 5 and 6, EDS and the related symp-

toms did not improve even after their sleep has been extended to over 10 hours and their sleep latencies also remained shorter than 8 min. We thought that their EDS were not caused by ISS. IHS should be a more adequate diagnosis in the cases.

In the 24-hour active society in which we are living, there is a tendency among young people to shorten their nocturnal sleep. If a patient have EDS, for instance, asleep while riding on a bicycle and fell (case 1), asleep during walking (case 5), we usually supposition intrinsic sleep disorders or special cause in extrinsic sleep disorders. But, there are cases where ISS cause these symptoms. When those, who are long sleepers, try to follow the habit of short sleeping times, extreme adjustment disorder in social life may occur as seen in some of these cases⁴⁾. It would be necessary to advertise and give consideration to the fact that there are extreme individual differences in the sleeping time required for each person.

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