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**Case Report-A learning from clinical experiential history**

# 세포교정영양요법(OCNT)을 이용한 수면장애 개선 사례 연구

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# A Case Study on the Improvement of Sleep Disorders Using Ortho-Cellular Nutrition Therapy (OCNT)

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**ABSTRACT**

**Objective:** A case report on the improvement of sleep disorders using Ortho-Cellular Nutrition Therapy (OCNT)

**Methods:** The study subject is a Korean woman in her 40s who is very sensitive to caffeine and suffers from sleep disorders.

**Results:** She no longer complained of discomfort due to sleep disorders after undergoing OCNT.

**Conclusion:** OCNT can be helpful in the treatment of patients with sleep disorders.

**Keywords:** Ortho-Cellular Nutrition Therapy (OCNT), Sleep Disorder, Caffeine Sensitivity

## Introduction

Sleep disorders include experiencing trouble falling asleep, waking up during the night, waking up earlier than the desired time in the morning, and excessive daytime sleepiness. Sleep disorders are twice as common in females as in males, and the number of women complaining of discomfort experienced due to sleep disorders increases in their 40s and 50s.[1] Sleep disorders significantly reduce one's quality of life.[2] Caffeine is also accepted as a temporary mild stimulant. It can be found in various products worldwide. Metabolic rate and tolerance to the effects of caffeine vary depending on each individual with the average half-life of caffeine at 3.7 hours and ranging from 2 to 10 hours depending on endogenous and exogenous factors of an individual.[3]

Caffeine is very harmful to sleep, and coffee consumed 6 hours prior to falling asleep has the side effect of reducing sleep time by more than 1 hour. [4]

The scales for common sleep disorders are shown in **Table 1**. Those with symptoms of sleep disorder on

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average of at least 3 days per week are at risk for a sleep disorder.[5] The patient is a female in her 40s and is sensitive to caffeine. If she drinks a cup of coffee during the day, she has trouble falling asleep at night and the quality of her sleep deteriorates. As a result, she has complained of symptoms such as decreased concentration and memory, dreaming during sleep, and tired eyes or dry eyes. This report proposes the progress of performing OCNT in a patient to reduce the discomfort in her daily life due to such experiences.

## Cases

### 1. Target

It targeted one patient with a sleep disorder.

1) Name: Noh, O O (F/41 years old)

2) Diagnosis: Sleep disorder

3) Date of Onset: Unknown

5) Chief Complaint: Sleep disorder, deteriorated concentration, and memory, excessive dreaming during sleep, fatigue, and dry eyes

6) Past History: None

7) Social History: One cup of coffee daily, non-smoking, exercise once a week, occasional drinking, moderate stress

8) Family History: None

9) Current medication: Taking nutritional supplements (lactic acid bacteria, vitamin D, vitamin C, and zinc)

### 2. Method

The OCNT was performed in accordance with the following method.

JUBAPLEX (001, once a day, 1 pack per administration)

Taken 2 hours prior to falling asleep.

**Table 1. General Sleep Disorder Scale[5]**

| No. | Details | Frequency (per week) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | I have difficulty falling asleep. | 0 days | 1 day | 2 days | 3 days | 4 days | 5 days | 6 days | 7 days |
| 2 | I wake up during my sleep. | 0 days | 1 day | 2 days | 3 days | 4 days | 5 days | 6 days | 7 days |
| 3 | I wake up early. | 0 days | 1 day | 2 days | 3 days | 4 days | 5 days | 6 days | 7 days |
| 4 | I feel secure when I wake up from my sleep. | 0 days | 1 day | 2 days | 3 days | 4 days | 5 days | 6 days | 7 days |
| 5 | I need more sleep. | 0 days | 1 day | 2 days | 3 days | 4 days | 5 days | 6 days | 7 days |
| 6 | I feel sleepy during the day. | 0 days | 1 day | 2 days | 3 days | 4 days | 5 days | 6 days | 7 days |
| 7 | I have to make efforts to stay awake during the day. | 0 days | 1 day | 2 days | 3 days | 4 days | 5 days | 6 days | 7 days |
| 8 | I am sensitive during the day. | 0 days | 1 day | 2 days | 3 days | 4 days | 5 days | 6 days | 7 days |
| 9 | I feel tired during the day. | 0 days | 1 day | 2 days | 3 days | 4 days | 5 days | 6 days | 7 days |
| 10 | I am satisfied with the quality of sleep. | 0 days | 1 day | 2 days | 3 days | 4 days | 5 days | 6 days | 7 days |
| 11 | I feel energetic during the day. | 0 days | 1 day | 2 days | 3 days | 4 days | 5 days | 6 days | 7 days |
| 12 | I slept too much. | 0 days | 1 day | 2 days | 3 days | 4 days | 5 days | 6 days | 7 days |
| 13 | I didn’t sleep enough. | 0 days | 1 day | 2 days | 3 days | 4 days | 5 days | 6 days | 7 days |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 14 | I take a nap even if there is a scheduled plan. | 0 days | 1 day | 2 days | 3 days | 4 days | 5 days | 6 days | 7 days |
| 15 | I fall asleep if there are no plans. | 0 days | 1 day | 2 days | 3 days | 4 days | 5 days | 6 days | 7 days |
| 16 | I consume alcohol to fall asleep. | 0 days | 1 day | 2 days | 3 days | 4 days | 5 days | 6 days | 7 days |
| 17 | I smoke to fall asleep. | 0 days | 1 day | 2 days | 3 days | 4 days | 5 days | 6 days | 7 days |
| 18 | I used herbs (plants) to fall asleep. | 0 days | 1 day | 2 days | 3 days | 4 days | 5 days | 6 days | 7 days |
| 19 | I took an over-the-counter sleeping pill. | 0 days | 1 day | 2 days | 3 days | 4 days | 5 days | 6 days | 7 days |
| 20 | I took a sleeping pill that requires a prescription to fall asleep. | 0 days | 1 day | 2 days | 3 days | 4 days | 5 days | 6 days | 7 days |
| 21 | I took an aspirin or painkiller to sleep. | 0 days | 1 day | 2 days | 3 days | 4 days | 5 days | 6 days | 7 days |

**Result**

The patient introduced in this case complained of difficulty falling asleep when consuming caffeine. She took a substance to overcome symptoms of sleepiness during the day, but she was suffering from a sleep disorder as a result of it. The patient overcame the sleep disorder caused by caffeine after undergoing OCNT. Although she experienced some discomfort when waking up in the morning, she did not experience symptoms of daytime fatigue, indicating a very positive effect (**Table 2**).

**Table 2. JUBAPLEX Administration Log Prepared by the Patient**

| Date and Time of Administration | Time of Administration | Dosage | Time Taken to Fall Asleep | Quality of Sleep |
|---|---|---|---|---|
| Jun. 04 | 8 pm | 1 sachet | 11 pm | Fell asleep easily and slept soundly, but it was a bit difficult waking up in the morning |
| Jun. 07 | 7:30 pm | 1 sachet | 10 pm | Had a lot of dreams, and waking up in the morning was a bit difficult, but maintained good conditions during the day |
| Jun. 08 | 7:30 pm | 3/4 sachet | 11 pm | Had two cups of coffee during the day, but seemed to have slept soundly, can't even remember the dreams, and maintained good conditions during the day |
| Jun. 12 | 8 pm | 3/4 sachet | 11 pm | It feels like I slept soundly until 8:00 am, not feeling tired during the day, and still feel okay with increased activities |
| Jun. 13 | 8:30pm | 1 sachet | 11 pm | Drank a strong cup of coffee during the day and my dreams were vivid. Waking up in the morning was difficult, but maintained good conditions throughout the day |
| Jun. 16 | 7:30 pm | 3/4 sachet | 10:45 pm | Slept soundly and woke up at 7:00 am, I can feel that I sleep more soundly on the days when I don't drink coffee. |
| Jun. 17 | 9pm | 1 sachet | 12 am | Drank a strong cup of latte during the day, my dreams were vivid, and waking up was a bit difficult, but maintained good conditions throughout the day |

**Consideration**

Caffeine is a substance with a maximum daily allowance. In moderate amounts, it can have positive effects, but in excess, it can have negative effects. Common side effects include insomnia, anxiety, increased heart rate, nausea, hyperacidity, etc. Because sensitivity to caffeine varies among individuals, caution should be taken when consuming it. In this case, the patient was sensitive to caffeine and wanted to solve the problem of not falling asleep easily after drinking coffee.

JUBAPLEX contains Rice Soybean Extract (15% GABA), and studies revealed that GABA (γ-aminobutyric acid) offsets caffeine-induced sleep disturbances such as delayed sleep initiation and reduced sleep.[6]

In the case of Sanjoin, patients who consumed Sanjointang Tab. had an increase in sleep time, a decrease in the time taken to fall asleep.

and the number of night awakenings, indicating an overall change in sleep quality. The score distribution in accordance with the sleep measurement tool increased significantly in the female group after the administration of *Sanjointang* Tab.[7]

Dieckol, a polyphenol isolated from Ecklonia cava, prevents neurodegenerative diseases such as Parkinson's disease, but also functions to improve sleep disorders. In addition, phlorotannin from Ecklonia cava improves depression as well as sleep disorders by regulating the benzodiazepine binding site of the gamma-aminobutyric acid type A ($GABA_A$) receptor.[8] Passion flower improves various symptoms in addition to sleep disorders, and[9] *dong quai* has an impact on the 5-Hydroxytryptamine receptors (5-HT receptor) and GABA receptors, which can affect REM sleep regulation by affecting the serotonergic system and GABAergic systems.[10]

*Baekbongnyeong* confirmed its positive effect on treating sleep disorders due to the wakefulness effect of caffeine, and[11] Rehmannia glutinosa and Valerian exhibited a shortening of subjective sleep latency and a high tendency for the correlation coefficient between subjective sleep latency and objective sleep latency after multiple administrations. In addition, the number of side effects was extremely low.[12]

Although it was a short-term administration, it quickly improved the quality of sleep of patients who had severe sleep disorders. However, in the case of this patient, she continues to feel fatigued when waking up even though she wakes up from a sound sleep. This is sleep inertia, which refers to a state in which cognitive and motor abilities rapidly deteriorate after waking up, lasting from 1 minute to 4 hours for an average person (sleeping patterns appear on EEG even after waking up). There have been several proposals about sleep inertia so far, but it is known that even if sufficient sleep time is given, sleep inertia occurs more severely when there is a sleep disturbance than the shallow sleeping state, which places less significance on the effect of sleep time and the surrounding environment.[13] Since sleep inertia still continues to be studied, it is considered important to fall asleep by minimizing sleep disturbance in case of suffering from severe sleep inertia. As such, daytime sleepiness may appear regardless of the amount of sleep during the night. If one experiences excessive sleepiness during the day even after getting enough sleep during the night, it could be a symptom of hypocretin or orexin deficiency. Activity and sleep in the human life cycle are regulated by complex interactions of various neurotransmitters. Serotonin regulates REM sleep at night, but it can also activate the sympathetic nervous system during the day, just like hypocretin, which helps to overcome daytime sleepiness.[14]

The patient's JUBAPLEX granules intake diary showed that the patient was able to drink up to two cups of coffee during the day and still get enough sleep compared to before the OCNT. Not only that, but the patient no

longer suffered from the daily inconveniences of sleep disorders, such as poor concentration and memory, dry eyes, etc. Although this is a single case, we believe it showed how the therapy helped a patient who loves coffee but is sensitive to caffeine and suffers from sleep disturbances. We are reporting this with the patient's consent.

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