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Case Report

세포교정영양요법(OCNT)을 이용한 비소 중독 개선 사례

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A Case Report on the Improvement of Arsenic Poisoning Through Ortho-Cellular Nutrition Therapy (OCNT)

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ABSTRACT

Objective: Arsenic is the second most abundant element on Earth, and when ingested by humans, it can lead to acute or chronic illnesses. Accumulation of arsenic in the body results in a chronic or clinical poisoning condition known as arsenicosis, which is often caused by soil with a high arsenic content in certain regions. Clinically, the condition is characterized by symptoms such as melanosis and keratosis, and a definitive diagnosis can be made when elevated levels of arsenic are detected in the body.

Case Report: This case involves a woman in her 50s who was diagnosed with arsenic poisoning and underwent Ortho-Cellular Nutrition Therapy (OCNT). The patient reported suffering from chronic fatigue, depression, and pruritus (itching of the skin). Blood tests revealed that her arsenic levels were approximately three times higher than the normal range. To mitigate cellular damage caused by arsenic and improve her skin condition, a regimen of polyphenols, vitamins A, C, and E, curcumin, iodine, selenium, sodium, and calcium was prescribed. After three months of OCNT, the patient reported significant relief from pruritus, and her arsenic levels had decreased to within the normal range.

Conclusion: This case aimed to reduce cellular damage caused by arsenic and support its elimination through mineral supplementation. As a result, the patient's arsenic levels returned to the normal range, as confirmed by blood tests. This case involves a single patient, so large-scale follow-up studies are considered necessary for general application. However, the significant improvement in the patient's symptoms suggests that the outcome is noteworthy.

Keywords Ortho-Cellular Nutrition Therapy (OCNT), arsenic poisoning, pruritus, polyphenols, selenium

Introduction

Arsenic is the second most abundant element on Earth and is widely present in soil. It is odorless, colorless, and tasteless, and when ingested by humans, it can cause acute or chronic illnesses. Arsenic has a crystalline structure and is a brittle metal. In nature, it exists either as a metal in alloys or in various compound forms and is often found in sulfide form in rocks. It is also present in large quantities in metal ores such as gold, silver, copper, and lead. During the mining and smelting of these ores, arsenic is deposited into water, soil, and plants due to its sublimation property at 193°C, which causes it to be released in vapor form during the smelting process. As a result, arsenic enters rivers and drinking water, increasing the risk of arsenic poisoning when consumed.[1]

Arsenicosis refers to a chronic or clinical poisoning condition caused by the accumulation of arsenic in the body. It is primarily transmitted through drinking water containing arsenic, which originates from soil with high arsenic content in certain regions. Arsenicosis is classified into preclinical and clinical stages. In the preclinical stage, elevated levels of arsenic are detected in urine, hair, and skin keratin. In the clinical stage, symptoms associated with arsenic poisoning appear, with melanosis and keratosis being the most representative. Melanosis is one of the earliest symptoms of arsenic poisoning, characterized by black spots on the skin caused by malignant tumors in melanocytes. When both melanosis and keratosis are observed simultaneously in adults, the condition is considered arsenic dermatosis, and a definitive diagnosis can be made when high concentrations of arsenic are confirmed in body tissues.[2]

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Currently, there is no known effective treatment for arsenicosis, making prevention crucial. The World Health Organization (WHO) has outlined several measures to prevent arsenicosis. The first is controlling exposure to arsenic by avoiding the consumption of contaminated drinking water, which is the primary cause of the disease. The second is securing safe water sources through water purification systems, such as traditional wells, rainwater harvesting, and arsenic removal technologies. Lastly, the intake of specific nutrients can help reduce the manifestation of arsenicosis symptoms. Since arsenic induces toxicity through the generation of reactive oxygen species, the consumption of antioxidants like vitamins A, C, and E, as well as selenium, which aids in arsenic detoxification, and green or black tea, which may minimize DNA damage, has been reported to contribute to symptom alleviation.[3]

Meanwhile, when arsenicosis has already developed, supportive therapy becomes the primary treatment method. Arsenicosis affects the skin and nearly all organ systems, so the treatment approach varies depending on the affected area. Keratosis, the most common symptom of arsenicosis, is treated by topically applying a keratolytic ointment containing salicylic acid. However, surgical excision is performed if the lesions increase in size or if tumors are suspected. For gastrointestinal disorders caused by arsenic poisoning, both pharmacological treatment and procedures are used. Chronic arsenicosis often accompanies indigestion, for which prokinetic agents are utilized to improve symptoms. Additionally, treatments such as sclerotherapy or band ligation are employed in cases of gastrointestinal bleeding.[4]

The patient in this case report frequently complained of chronic fatigue, depression, and discomfort due to skin pruritus. Upon visiting the hospital, various tests revealed that her arsenic levels were elevated above normal. Therefore, Ortho-Cellular Nutrition Therapy (OCNT) was applied to improve her condition. This case report is presented with the patient's consent.

Case Study

1. Subject
The case study involves one patient with arsenicosis.

1) Name: OOO (50 years old/F)
2) Diagnosis: Arsenicosis
3) Date of onset: October 2023
4) Treatment period: October 2023 – January 2024
5) Chief complaints: Chronic fatigue, depression, skin pruritus
6) Medical history: Chronic atrophic gastritis
7) Social history: None
8) Family history: Father with stomach cancer
9) Current illness and medications: Proton pump inhibitors

The patient had been taking proton pump inhibitors, which were discontinued during the OCNT period.

2. Methods
The following OCNT regimen was applied:

Cyaplex X Granules (101, twice a day, one sachet per dose)
Thyroplex Capsule (101, twice a day, one capsule per dose)
Selenplex Capsule (101, twice a day, one capsule per dose)
Curculpex Capsule (202, twice a day, two capsules per dose)
Cyaplex mineral rock salt (111, three times a day, one sachet per dose)
Aqua SAC Pure (111, three times a day, one sachet per dose)
Heartberry Haedam (111, three times a day, one sachet per dose)

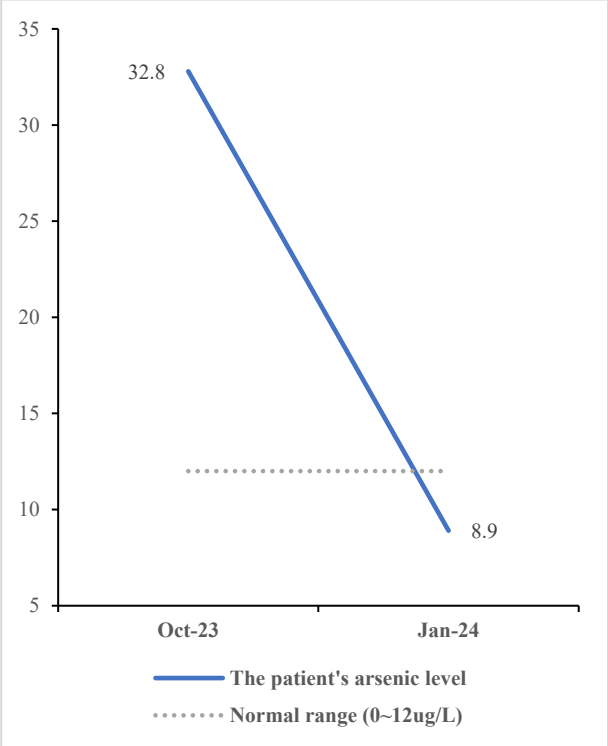
The patient consumed Cyaplex mineral rock salt, Aqua SAC Pure, and Heartberry Haedam mixed with 500cc of bottled water in three bottles per day.

Results

The patient had been experiencing chronic fatigue, depression, and discomfort due to skin pruritus. Upon undergoing tests at the hospital, her arsenic level was found to be approximately three times higher than normal. However, as no specific medication was prescribed, she visited a pharmacy. Consequently, OCNT was applied to reduce the arsenic level and alleviate her discomfort.

After three months of OCNT, the patient's skin pruritus significantly improved. In addition, blood tests conducted at the hospital confirmed that her arsenic levels had returned to normal. The changes in the patient's arsenic levels following OCNT are detailed in Fig. 1.

Fig. 1. Changes in the patient's arsenic levels before and after OCNT. Her arsenic levels returned to normal range after OCNT.



Discussion

The patient involved in this case study was a Korean woman in her 50s who presented with discomfort caused by skin pruritus associated with arsenic poisoning. She had been experiencing chronic fatigue and depression. A blood test performed at a functional medicine clinic revealed an

abnormally elevated arsenic concentration. The attending physician advised her to reduce her seafood intake but did not prescribe any specific medication, which led the patient to visit a pharmacy. Consequently, OCNT was administered to eliminate the accumulated arsenic and improve her clinical condition. In addition, nutritional supplements with antioxidant properties were prescribed to suppress reactive oxygen species generated by arsenic exposure, thereby alleviating skin symptoms related to arsenic toxicity.

First, the regimen aimed to prevent arsenic-induced cellular damage. Arsenic is known to cause various disorders in the human body, including arsenicosis, hyperkeratosis, gastrointestinal disturbances, and hepatic fibrosis. These conditions are closely associated with excessive reactive oxygen species (ROS) production and the resulting DNA damage. Therefore, polyphenols—well-known antioxidants—were prescribed to minimize DNA damage. According to one study, polyphenols effectively reduced arsenic-induced DNA damage in normal lymphocytes and removed excess ROS. In addition, they activated antioxidant enzymes such as catalase, superoxide dismutase (SOD), and glutathione peroxidase, thereby suppressing cellular damage and facilitating the repair of ROS-induced DNA injury. As a result, polyphenols contributed to the mitigation of arsenic-induced genotoxicity.[5] The anthocyanins contained in Cyaplex X are a type of polyphenol found in various fruits and vegetables. Therefore, Cyaplex X was prescribed to reduce arsenic-induced cellular damage and regulate reactive oxygen.

Similarly, vitamins A, C, and E help reduce reactive oxygen species generated by arsenic and minimize DNA damage. A large-scale study conducted in arsenic-contaminated regions of Bangladesh investigated improvements in arsenicosis patients who consumed drinking water together with vitamins A, C, and E. The group that regularly took the vitamins showed improvements in skin hyperpigmentation, and some patients also experienced relief from keratosis. These findings suggest that vitamins A, C, and E have a beneficial effect on arsenic poisoning.[6] Meanwhile, an in vivo study using arsenic-exposed rats demonstrated that vitamins C and E reduced TNF-α levels and inactivated caspase responses. These findings confirmed that vitamins C and E selectively alleviate DNA damage caused by free radicals, thereby mitigating arsenicosis. The study also suggested that these vitamins may offer a protective effect in populations at risk of arsenic exposure.[7] Heartberry Haedam, containing vitamins A, C, and E, with various polyphenolic compounds, was prescribed to exert a beneficial effect on DNA damage induced by arsenic exposure.

Another nutrient known to exert antioxidant effects against arsenic-induced toxicity is curcumin. Curcumin, an alkaloid compound and key ingredient in turmeric and ginger, suppresses the generation of reactive oxygen species triggered by arsenic and activates antioxidant enzymes. It has been shown to mitigate various arsenic-induced toxicities, including genotoxicity, nephrotoxicity, hepatotoxicity, reproductive toxicity, neurotoxicity, and immunotoxicity. Furthermore, curcumin demonstrated a synergistic effect when used in conjunction with chelating agents commonly employed to treat arsenic toxicity.[8] Curculpex Capsule, rich in curcumin, was prescribed to improve the patient's symptoms induced by arsenic.

Arsenic also affects hormones. Continuous exposure to arsenic impacts the expression of genes related to thyroid hormone receptors (TR), leading to a decrease in thyroid hormone secretion. Therefore, arsenic, which affects the homeostasis of thyroid hormones, is considered an endocrine-disrupting chemical. Additionally, a study involving animal experiments showed that arsenic-exposed rats exhibited changes in TR response element expression and the expression of endogenous TR-regulated deiodinase enzymes in pituitary tumor cells, ultimately affecting thyroid hormone levels.[9] Therefore, thyroid hormones show an inverse relationship with arsenic exposure, leading to a decrease in thyroid hormone levels. This decrease is expected to result in reduced metabolic activity in the patient. Iodine is an essential trace element involved in the biosynthesis of thyroid hormones.[10] Therefore, Thyroplex Capsule, which contains a high amount of iodine, was prescribed to aid in synthesizing thyroid hormones. This prescription was intended to help maintain the patient's thyroid hormone homeostasis and improve metabolic activity.

However, even though the damage caused by arsenic was reduced, the symptoms could not improve without the fundamental elimination of arsenic from the body. Therefore, Selenplex Capsule, which contains selenium, was prescribed. Selenium is an essential mineral and trace element in the human body, playing a crucial role in antioxidant activity and hormone metabolism. According to a study, selenium interacts with arsenic to form detoxification complexes, which are then excreted through bile, reducing toxins

. This metabolic process occurs similarly in the case of arsenic, and thus, it has been demonstrated that these two elements promote each other's bile excretion synergistically.[11] Accordingly, the OCNT regimen included prescribing selenium to have a positive effect on reducing the patient's arsenic levels.

Mineral elements have often been utilized in arsenic-containing soils as they help reduce arsenic levels by absorbing arsenic. According to a study conducted in an arsenic-contaminated area in Australia, sodium and calcium were found to lower arsenic levels on the soil surface due to their charged properties. This phenomenon occurs due to ion exchange with arsenic, and the study showed that arsenic absorption increased in soils rich in sodium.[12] Cyaplex mineral rock salt and Aqua SAC Pure contain significant amounts of sodium and calcium. They were prescribed to ensure the patient received adequate minerals, which would help reduce arsenic levels.

This case study involved the application of OCNT for approximately three months, starting in October 2023. As a result, the patient's fatigue and pruritus were alleviated, and blood tests confirmed that arsenic levels had returned to normal. However, this OCNT regimen involves a single patient; thus, it may not universally apply to all arsenicosis patients. Therefore, large-scale follow-up studies involving broader populations are necessary for generalizability. Nonetheless, the results are meaningful, considering the significant improvement in the patient's symptoms and arsenic levels throughout the three-month OCNT regimen. This case report is presented with the patient's consent.

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