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Case Report

세포교정영양요법(OCNT)을 이용한 근감소증 개선 사례

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A Case Report of Sarcopenia Improvement Using Ortho-Cellular Nutrition Therapy (OCNT)

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ABSTRACT

Objective: Aging is a natural degenerative process that occurs with advancing age; however, when this process is abnormally exacerbated, it may progress to frailty. This process may be accompanied by a decline in muscle mass, and when this decline becomes severe, sarcopenia may be diagnosed. Sarcopenia is a multifactorial condition that increases the risk of reduced physical activity and disease development, and these risks may, in turn, further accelerate sarcopenia, creating a self-reinforcing vicious cycle. Nevertheless, symptoms can be improved through appropriate nutritional and exercise interventions in the early stages, highlighting the importance of timely and appropriate therapeutic management.

Case Report: This case report describes a Korean patient in their 80s who was suspected of sarcopenia during hospitalization. The patient presented with rapid weight loss and decreased appetite, for which Ortho-Cellular Nutrition Therapy (OCNT) was administered. The prescribed regimen included protein, bromelain, zinc, vitamin D, minerals, and fructooligosaccharides. As a result, the extent of weight loss was reduced, appetite was restored, and overall physical vitality was observed to improve.

Conclusion: As the present case was limited to a single patient, its findings have limited generalizability to all patients with sarcopenia. Nevertheless, this case is considered meaningful in that it provides a preliminary basis suggesting that appropriately tailored OCNT, informed by the patient's clinical circumstances, may contribute to the improvement of aging-related sarcopenia and its associated symptoms.

Keywords Ortho-Cellular Nutrition Therapy (OCNT), Sarcopenia, Aging, Muscle function, Protein

Introduction

As humans age, their capacity to maintain structural integrity and physiological function progressively declines, and their ability to respond to external stressors naturally diminishes. This process is referred to as aging and is associated with an increased risk of injury, disease, and ultimately mortality. When this deterioration becomes severe enough to result in abnormal deterioration and substantially impair activities of daily living, it may be classified as frailty. Older adults with frailty have been reported to have higher risks of disease and injury, as well as higher rates of hospitalization and mortality, than older adults without frailty.[1]

As aging and frailty progress, a reduction in muscle mass may occur as part of functional decline. When this loss is severe enough to impair muscle strength, sarcopenia may be diagnosed. Although the association between sarcopenia and aging is well established, other contributing factors, including disease, reduced physical activity, and nutritional deficiency, may also contribute in combination. Furthermore, as symptoms worsen, the progression of physical aging may be affected, ultimately leading to a self-reinforcing vicious cycle that further accelerates sarcopenia.[2]

Sarcopenia has also been shown to be associated with immune dysfunction and accelerated inflammatory responses. As muscle function deteriorates, the expression of various myokines produced and secreted by skeletal muscle is reduced. This process is thought to involve diminished immune-regulatory signaling and reduced immune cell activity, thereby increasing inflammatory responses. Moreover, certain immune cells play an important role in regulating inflammation and supporting muscle regeneration following muscle injury. This function may also be adversely affected, ultimately promoting muscle loss.[3,4]

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Although aging, frailty, and sarcopenia are closely interrelated, improvement has been reported to be possible through appropriate intervention in the early stages. Based on current evidence, a multimodal intervention that combines nutritional strategies, including protein supplementation, with physical activity centered on resistance-based exercise is recommended as the most effective approach for improving physical function and mobility in frail older adults. In particular, in cases accompanied by weight loss or malnutrition, adequate nutritional supplementation plays a key role in slowing the progression of decline in physical function and establishing the physiological foundation for muscle recovery.[5]

This case report describes the application of Ortho-Cellular Nutrition Therapy (OCNT) in a patient who presented with rapid weight loss and symptoms suggestive of sarcopenia. Following hospitalization, the patient exhibited marked weight loss and symptoms suggestive of sarcopenia, prompting the initiation of OCNT as an intervention to address these symptoms. As the patient subsequently demonstrated improvement in appetite and improvement in symptoms suggestive of sarcopenia, this case is reported with the patient's informed consent.

Case Study

1. Subject

One case of a patient with suspected sarcopenia was included.

1) Name: O OO (89 years / M)
2) Diagnosis: Suspected sarcopenia
3) Date of onset: April 2026
4) Treatment period: April 2026, one month duration
5) Chief complaint: Generalized weakness, weight loss, decreased appetite
6) Past medical history: Myalgia following statin use
7) Social history: None
8) Family history: None
9) Present illness and current medications: Inpatient treatment for pneumonia; currently taking relevant medications for dry skin and pruritus

2. Methods

The following products were prescribed throughout the OCNT intervention period.

- Sarcoplex
- Viva Senior Power Liquid
- Sugar Fiber
- Saltea Aqua Lemon

Each of the above OCNT products was administered as one sachet per dose, dissolved in 100 mL of water, once daily.

Results

Following the initiation of OCNT, improvement in appetite was confirmed through reports from the patient's caregiver. In particular, the patient had exhibited marked weight loss accompanied by decreased appetite during hospitalization; however, after OCNT, appetite improved and oral intake gradually increased. Accordingly, the trajectory of weight loss that had persisted prior to hospitalization was reported to have stabilized. Approximately one month after the commencement of OCNT, partial improvement in physical activity and muscle function was observed, and restoration of body weight to the pre-illness level was confirmed.

Discussion

The present case involved a Korean male patient in his 80s who was receiving inpatient treatment for pneumonia. Shortly after admission, the patient experienced rapid weight loss of approximately 3 kg, and the caregiver reported observing generalized physical weakness and decreased appetite. The caregiver subsequently visited a pharmacy seeking to improve these symptoms, and OCNT was prescribed based on the patient's clinical condition. The therapeutic objectives were threefold: to support muscle synthesis and function, to slow weight loss and improve the patient's overall nutritional status, and to promote appetite.

To achieve the aforementioned OCNT objectives, Sarcoplex, Saltea Aqua Lemon, Viva Senior Power Liquid, and Sugar Fiber were prescribed. Each of these OCNT products has a distinct nutrient composition, and the expected symptomatic improvements differ depending on the nutrients. The primary constituents of Sarcoplex include various amino acids and proteolytic enzymes, including papain. Amino acids are essential for muscle formation and the development of muscular strength, and supplementation with leucine, isoleucine, and valine, collectively referred to as BCAAs, is particularly recognized as important. Leucine supplementation is considered particularly important for muscle formation because leucine plays a key role in activating the mTOR pathway, which regulates muscle protein synthesis.[6] Additionally, for ingested protein to exert its functional effects, it must be broken down through digestion and absorbed into the body. Sarcoplex contains papain and bromelain, enzymatic components derived from papaya and pineapple, respectively, both of which are known to assist in protein digestion.[6,7] Through this formulation, the aim was to supply the patient with high-quality protein while supporting its absorption.

Saltea Aqua Lemon is an OCNT formulated primarily with minerals that are ionized in the body and function as electrolytes, including calcium, magnesium, sodium, and potassium. Among these, magnesium and calcium are known to contribute to the improvement of physical and muscle function. Regarding magnesium, a randomized controlled trial has shown that appropriate magnesium supplementation can improve overall physical performance, while calcium supplementation in individuals with calcium deficiency has been found to support muscle and physical function by regulating muscle fiber contraction and maintaining neuromuscular activity.[8] Sodium and potassium, in turn, are components required for maintaining the body's fluid and electrolyte balance and supporting water absorption and retention. Given that adequate hydration and electrolyte balance are necessary for maintaining muscle function and physical activity, electrolyte supplementation through Saltea Aqua Lemon was considered necessary for this patient.[9]

Viva Senior Power Liquid was prescribed to provide the patient with comprehensive nutritional supplementation, with zinc and vitamin D as its key constituents. Zinc is essential for the formation of normal immune responses through its contribution to both innate and adaptive immunity and is recognized as a nutrient that helps reduce the burden of

inflammatory responses.[10] In addition, zinc deficiency has been shown to cause loss of appetite, and appropriate supplementation may have a positive effect on appetite by increasing appetite-stimulating signals and decreasing appetite-suppressing signals.[11] Vitamin D is known to promote intestinal calcium absorption, thereby supporting bone formation and skeletal development. However, myopathy has been reported in patients with vitamin D deficiency, and vitamin D receptors have been identified in muscle tissue. Through these receptors, vitamin D is understood to participate in muscle formation by regulating calcium uptake in muscle cells and modulating cell growth signaling.[12] Accordingly, supplementation with zinc and vitamin D may have played a meaningful role in improving the symptoms observed in this patient.

Finally, fructooligosaccharides were included with the objective of helping improve the patient's nutrient absorption. This component is a type of nondigestible plant-derived carbohydrate that can be converted into short-chain fatty acids (SCFAs) through fermentation by intestinal microorganisms in the large intestine. SCFAs improve the intestinal environment by promoting the growth of beneficial bacteria and suppressing harmful bacteria, and through this mechanism may positively influence the absorption of minerals, including calcium, magnesium, and zinc.[13] Therefore, it is considered that the patient in this case may have benefited from improved nutrient absorption through the intake of fructooligosaccharides.

In the present case, the patient demonstrated stabilization of weight loss, restoration of appetite, and an overall improvement in physical vitality following OCNT. However, given that this case was limited to a single patient, limitations exist in generalizing the findings to all older adults with sarcopenia or sarcopenia-related symptoms. Nevertheless, this case is considered to have clinical significance in that it suggests that an individualized OCNT approach tailored to the patient's condition may contribute to an improvement in the patient's quality of life. This case is reported with the patient's informed consent.

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