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Case Report

세포교정영양요법(OCNT)을 이용한 류마티스 관절염 개선 사례

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A Case Report on the Improvement of Rheumatoid Arthritis Using Ortho-Cellular Nutrition Therapy (OCNT)

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ABSTRACT

Objective: Rheumatoid arthritis (RA) is a chronic autoimmune and inflammatory disease that affects the synovial tissues of the joints. It involves the proliferation of synovial tissue, known as pannus, and the production of various pro-inflammatory cytokines. Consequently, it leads to symptoms such as joint stiffness, swelling, pain, warmth, and loss of function. Although diagnostic criteria have been established and disease-modifying antirheumatic drugs (DMARDs) have been developed and administered to overcome RA, challenges remain due to the long duration of treatment, difficulty in achieving complete remission, and side effects associated with the medications.

Case Report: The patient in this case study is a Korean woman in her 30s who had been diagnosed with RA in her 20s and had undergone various treatments involving medications and injections. However, she was required to reduce or discontinue the use of these medications due to pregnancy. As a result, Ortho-Cellular Nutrition Therapy (OCNT) was applied to alleviate symptoms associated with RA, involving the administration of anthocyanins, omega-3 fatty acids, calcium, collagen, methylsulfonylmethane (MSM), and vitamins D and K.

Conclusion: Following the implementation of OCNT, the patient's RA inflammation markers returned to normal ranges, and symptoms such as pain and stiffness showed significant improvement. The patient also reported being able to carry out normal daily activities. Although this study is limited by its focus on a single patient, the findings suggest that OCNT may be a meaningful approach for alleviating symptoms associated with RA with minimal adverse effects.

Keywords Ortho-Cellular Nutrition Therapy (OCNT), rheumatoid arthritis, autoimmunity, inflammation

Introduction

Rheumatoid arthritis (RA) is a disease caused by inflammation of the synovial membrane, the synovial tissue that surrounds the joints. It is a relatively common condition, with a global prevalence of approximately 0.5–1%. The incidence of RA is influenced by various factors, including region, gender, and environment, with the disease being more prevalent in the Northern Hemisphere than in the Southern Hemisphere, in rural areas compared to urban areas, and in women compared to men.[1]

A study conducted on the Korean population showed that approximately 0.27–1.85% of the total population experiences RA, with the condition occurring most commonly in women aged 20 to 40.[2]

RA is a chronic autoimmune and inflammatory disease caused primarily by autoimmunity. The disease presents various symptoms, with a characteristic symptom being morning stiffness, which refers to joint stiffness lasting for more than one hour upon waking. Other common symptoms include polyarticular joint pain affecting multiple joints, swelling, warmth, and erythema. If these symptoms persist for a prolonged period, joint range of motion may become limited. In severe cases, joint deformity, cartilage and bone destruction, and loss of joint function may occur. Furthermore, RA can also affect the skin, respiratory system, cardiovascular system, nervous system, and eyes.[3]

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In the synovial membrane of joints affected by RA, two characteristic changes are observed: abnormal proliferation of the synovial intima and infiltration of adaptive immune cells into the synovial subintima. These two phenomena lead to the production of inflammatory cytokines within the joint, such as IL-1, IL-6, and TNF-α, and the formation of pannus, an organized mass of immune cells including macrophages, dendritic cells, and mast cells. This results in an active inflammatory response and a heightened immune reaction by T cells and B cells, which can lead to the destruction of adjacent cartilage and bone. Additionally, weakening of surrounding tendons and ligaments may also occur.[4]

RA can be diagnosed based on the symptoms described above, and various tests are conducted to confirm the diagnosis. One widely used method globally is the ACR/EULAR criteria established in 2010. This method comprehensively considers the number of painful joints, blood test results, including antibody and inflammation markers, as well as the duration of symptoms to make a diagnosis. In particular, since RA is an autoimmune disease, antibodies and inflammation markers, such as anti-citrullinated protein antibody (ACPA), C-reactive protein (CRP), and erythrocyte sedimentation rate (ESR), play a crucial role in diagnosis. Additionally, imaging techniques such as X-rays or ultrasound can be used to assess joint changes or detect the presence of inflammation.[3]

Treatment for RA has undergone gradual evolution. Initially, antirheumatic drugs such as nonsteroidal anti-inflammatory drugs (NSAIDs), steroids, and disease-modifying antirheumatic drugs (DMARDs), including penicillamine were used. While these could provide temporary symptom relief, long-term use has been associated with adverse effects such as toxicity and chronic damage. Subsequently, improved DMARDs including methotrexate, sulfasalazine, and hydroxychloroquine were developed and began to be used. Recently, treatments targeting immune and inflammatory responses have been developed. Although improvements in classification criteria, new drug development, and early treatment strategies have been achieved, complete remission remains uncommon, and continuous treatment is required.[5] Therefore, there is a continuing need to explore treatment methods that effectively alleviate symptoms while minimizing the physical burden on the patient.

This case study, with the patient's consent, reports on a 38-year-old woman with RA symptoms who showed improvement following Ortho-Cellular Nutrition Therapy (OCNT).

Case Study

1. Subject

This case study involves a patient with rheumatoid arthritis.

1) Name: Ahn OO (38 years old / F)
2) Diagnosis: Rheumatoid arthritis
3) Date of onset: 2012
4) Treatment period: October 2023 – December 2024
5) Chief complaints: Pain in fingers and toes, finger stiffness, general fatigue
6) Medical history, Current illness and medications: Hypothyroidism, infertility treatment, long-term use of anti-inflammatory analgesics, steroid agents, methotrexate (MTX), and Humira injection related to rheumatoid arthritis
7) Social history: Excessive stress (teacher)
8) Family medical history: None

2. Methods

The OCNT prescribed to the patient is detailed in Table 1.

Table 1. OCNT applied to the patient

Types \ Months	1	2	3 – 8	9 – 12
Cyaplex X Granules	101	101	101	101
Eufaplex Alpha Stick	101	101	101	101
Calmaplex Granules	101	101	101	101
Collaplex Granules	101	101	101	101
Sulfoplex PK Tablets	202	202	202	202 – 404
Diverol Capsules	010	010	010	010
K-Plex Granules	100	100	–	–
Sulfoplex Cream	Applied to the affected area 2–3 times daily			

*100: Once daily, 1 sachet/tablet/capsule taken in the morning; 010: Once daily, 1 sachet/tablet/capsule taken at lunch; 101: Twice daily, 1 sachet/tablet/capsule taken in the morning and evening; 202: Twice daily, 2 sachets/tablets/capsules taken in the morning and evening; 404: Twice daily, 4 tablets/capsules taken in the morning and evening

Results

The patient in this case study discontinued RA-related medications due to pregnancy and underwent OCNT. Although some products from the OCNT were taken during pregnancy, complete OCNT treatment began after the birth of the second child. After four months, rheumatoid inflammation markers (CRP, ESR) returned to normal ranges, and the patient reported a significant reduction in discomfort during daily activities such as childcare. The severity of symptoms experienced by the patient during OCNT is detailed in Table 2.

Discussion

The patient in this case study is a 38-year-old woman who was diagnosed with RA at the age of 25. Since then, she has managed her symptoms with long-term use of anti-inflammatory analgesics, steroid agents, methotrexate (MTX), and Humira injections. During this period, she successfully became pregnant through in vitro fertilization, leading to the complete discontinuation of injectable medications and minimal use of oral medications. Furthermore, six months after giving birth to her first child, she conceived naturally and subsequently stopped all RA-related medications.

The relationship between RA and pregnancy has been revealed through numerous studies. Women of childbearing age with RA generally take longer to conceive compared to the general population, with 40% of patients reportedly requiring

Table 2. The severity of symptoms experienced by the patient according to the progress of OCNT. The scale ranges from 0 to 5, with higher numbers indicating greater discomfort felt by the patient.

Months / Symptoms	1	2	3 – 8	9 – 12
Pain in fingers	3	2	1	0
Morning finger stiffness	3	2	1	0
General fatigue	3	2	2	1
Pain in toes	3	1	0	0

0: No symptoms and no impact on daily life; 1: Mild symptoms with little impact on daily life; 2: More noticeable symptoms requiring some adaptation in daily life; 3: Symptoms significantly affect daily life, causing difficulty in performing some activities; 4: Significant difficulty performing activities during daily life; 5: Severe discomfort in daily life causing serious stress

more than one year to become pregnant. During pregnancy, immune cell activity in the body changes, which can temporarily alleviate the disease; however, recent research has found that symptoms persist during pregnancy in more than 50% of patients. After childbirth, as the immune system returns to its original state, arthritis symptoms often relapse. During breastfeeding, the increase of the peptide hormone prolactin stimulates the immune system, which can worsen symptoms. This is particularly significant because drug use is restricted during the breastfeeding period, making symptom exacerbation more likely.[6]

The patient previously underwent OCNT to improve infertility, during which she also reduced RA-related medications and managed her symptoms through OCNT. Especially during her second pregnancy, all arthritis-related medications were discontinued, making an alternative method necessary. Therefore, OCNT was applied to intensively manage and improve RA throughout the pre-pregnancy, pregnancy, and postpartum periods. The focus was on regulating excessive immune and inflammatory responses, enhancing antioxidant capacity, and supplying nutrients that could help improve arthritis symptoms.

First, anthocyanins and omega-3 were used to regulate the excessive immune and inflammatory responses occurring in the patient and to enhance antioxidant capacity. Anthocyanins are polyphenolic compounds abundantly found in blue-colored berries such as aronia, bilberry, and blueberry. Specifically, anthocyanins contained in aronia exhibited high antioxidant capacity values in tests, including the 2,2-diphenyl-1-picrylhydrazyl (DPPH) radical scavenging assay and oxygen radical absorbance capacity analysis. When anthocyanins were applied to inflammation-induced RAW264.7 cells, levels of inflammatory cytokines TNF-α and IL-1β significantly decreased. Furthermore, evaluation of cell toxicity in the same cell line treated with anthocyanins showed no significant difference in cell viability compared to the untreated control group. Based on these results, anthocyanins can aid antioxidant activity and significantly regulate inflammatory responses without placing a heavy burden on the body.[7]

Omega-3 fatty acids are a type of unsaturated fatty acid that the body cannot efficiently synthesize, making dietary intake essential. This nutrient is known to play a positive role in regulating chronic inflammatory and immune responses. Similar to anthocyanins, omega-3 fatty acids suppress the expression of inflammatory cytokines such as IL-1, IL-6, and TNF-α and induce the production of lipid mediators that regulate inflammation, including resolvins, protectins, and maresins. Additionally, omega-3 helps control excessive immune responses by activating phagocytosis in macrophages and neutrophils, regulating the expression of T cells and B cells, and modulating the expression and activity of various immune cells, such as natural killer (NK) cells and mast cells. In a clinical trial, high-dose omega-3 supplementation in patients with RA resulted in improved arthritis symptoms and decreased disease activity.[8, 9] In this case study, the patient consumed anthocyanins through Cyaplex X and an adequate amount of omega-3 through Eufaplex Alpha, which is believed to have had a positive effect on the patient's RA symptoms.

Next, various nutrients were prescribed to support the function of bones and joints. Calcium is one of the main components that make up bones and teeth, and the amount consumed is closely related to bone strength. It plays a key role in maintaining bone health throughout life and in reducing the risk of osteoporosis and fractures. In addition, recent studies have shown that vitamins D and K act as cofactors that aid calcium absorption. Vitamin D increases calcium absorption in the intestines and promotes the expression of the osteocalcin protein gene in osteoblasts, which helps fix calcium in the bones. Vitamin K acts as an activator of osteocalcin, which is activated by vitamin D, effectively helping calcium accumulate in the bones and preventing calcium from calcifying in blood vessels.[10, 11] These nutrients were supplied through Calmaplex, Diverol, and K-Plex, aiming to strengthen bone structure and support the improvement of arthritis.

Collagen is one of the components of joint tissue, forming fibrous tissue that functions to resist mechanical stress. A deficiency or structural changes in collagen within this tissue have been associated with an increased risk of osteoarthritis.[12] Therefore, numerous studies have been conducted observing improvements in joint function through collagen supplementation. These studies reported that groups taking collagen showed significantly reduced joint pain compared to control groups, increased pain-free activity time, and considerably improved joint range of motion. This improvement in joint function was confirmed to result from increased synthesis of type I and type II collagen in the joint area due to collagen supplementation.[13] Accordingly, Collaplex was used to supply high-quality collagen.

Lastly, methylsulfonylmethane (MSM) was supplemented through Sulfoplex PK Tablets and Sulfoplex Cream. MSM is an organic sulfur-containing compound used to improve joint function and support anti-inflammatory effects. It helps regulate inflammation-related transcription factor pathways, such as NF-κB and suppresses the secretion of inflammatory cytokines, including IL-1β and TNF-α. Clinical trials in which MSM was administered have demonstrated reductions in joint pain and improvements in joint function in patients with arthritis. Additionally, MSM has been granted GRAS (Generally Recognized as Safe) status by the U.S. Food and Drug Administration (FDA), and toxicity studies have found no significant harmful effects on the body.[14] Therefore, MSM is believed to have contributed to the improvement of the patient's osteoarthritis.

Based on the nutrients provided through OCNT, the patient reported improvement in pain and discomfort caused by osteoarthritis and was able to carry out daily activities without problems. Notably, despite having suffered from RA for a long time and experiencing two childbirths, the patient improved symptoms through continuous OCNT without causing significant adverse effects or burden to the body, which is considered meaningful. However, since this case study involved only a single patient, there are limitations to universally applying these findings to all RA patients. Nevertheless, the ability to improve symptoms through OCNT while reducing or discontinuing medication is considered significant, and therefore, this report is made with the patient's consent.

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