CellMed
Orthocellular Medicine and Pharmaceutical Association

Case Report

세포교정영양요법(OCNT)을 이용한 석회성 건염 개선 사례

이아영 약사
서울특별시 강북구 도봉로 242 365올리브약국

A Case Study on the Improvement of Calcific Tendinitis Using Ortho-Cellular Nutrition Therapy (OCNT)

Pharmacist, Ayoung Lee
365 Olive Pharmacy, 242, Dobong-ro, Gangbuk-gu, Seoul, Republic of Korea

ABSTRACT

Objective: Calcific tendinitis is a type of acute inflammation that occurs in the tendons, characterized by the deposition of calcium crystals within the tendon, leading to pain and swelling. This condition primarily affects individuals between their 30s and 60s and can occur at any tendon attachment site in the body. Early treatment of calcific tendinitis is crucial, and while various procedures and surgeries can be used when conservative treatments fail, they carry a high risk of complications.

Case Report: Case Report: The subject of this case study was a woman in her 30s diagnosed with calcific tendinitis who underwent Ortho-Cellular Nutrition Therapy (OCNT) for approximately two weeks. The patient experienced stiffness in her fingers due to pain and swelling. She was prescribed polyphenols, fructooligosaccharides, bromelain, linolenic acid, MSM, calcium, magnesium, and vitamins C, D, E, and K. As a result, the patient reported a visible improvement in the swelling and condition of her fingers, along with a reduction in pain.

Conclusion: This case study confirmed an improvement in the patient's calcific tendinitis symptoms. The findings suggest that prescribing OCNT tailored to the patient's condition and symptoms played a crucial role. However, as this study involves a single patient, its applicability to other tendinitis cases is limited. Therefore, further research is required to validate these results.

Keywords Ortho-Cellular Nutrition Therapy (OCNT), Calcific tendinitis, Finger pain, Joints, Anthocyanins

Introduction

Calcific tendinitis is a type of acute inflammation in the tendons, primarily characterized by the deposition of calcium crystals, which cause pain, swelling, and restricted joint movement. This condition most commonly affects the shoulder and wrist but rarely occurs in the distal interphalangeal joint of the fingers. The exact pathogenesis of calcific tendinitis remains unclear; however, it is reportedly caused by a complex interplay of factors related to chronic degeneration and metabolic processes. Additionally, hypoxic conditions in the tendon or trauma may induce calcification around the joint, triggering inflammation.[1]

Calcific tendinitis is characterized by the abnormal deposition of calcium hydroxyapatite crystals in the tendons, which triggers an aseptic inflammatory response.[2] This process is distinct from degenerative joint diseases, often presenting with acute joint pain, swelling, and limited range of motion in the affected area. Calcific tendinitis primarily occurs in individuals between their 30s and 60s, with a higher prevalence in women. Additionally, calcific tendinitis can affect areas beyond the initially affected site and has the potential to occur at any tendon attachment site in the body.

Calcific tendinitis exhibits distinct radiological and pathological features at each stage, with corresponding clinical symptoms. When calcium deposits swell and appear irregularly, it indicates the resorptive phase of calcific tendinitis. At this stage, patients may suspect infectious arthritis or fractures. However, correct diagnosis can be made through radiological findings, including aggressive bone changes, extensive soft tissue edema, and imaging techniques such as computed tomography (CT) and magnetic resonance imaging (MRI). These tests allow for the visualization of calcium deposits in the tendon, helping to distinguish calcific tendinitis from other conditions.[4]

*Correspondence: Ayoung Lee
E-mail: angela796@naver.com
Received Mar 28, 2025; **Revised** Mar 28, 2025; **Accepted** Mar 31, 2025; **Published** Mar 31, 2025
doi: http://dx.doi.org/10.5667/CellMed.spc.117

† This report has been translated and edited by the CellMed editor-in-chief, Prof. Beom-Jin Lee.

The initial treatment for calcific tendinitis typically involves conservative methods such as nonsteroidal anti-inflammatory drugs (NSAIDs) and steroid injections, which are effective in symptom relief. However, these treatments may only provide temporary relief, and additional complications may arise. If conservative treatment fails, other treatment options such as ultrasound-guided procedures, surgery, acetic acid iontophoresis, shockwave lithotripsy, and percutaneous aspiration of deposits can be considered. However, invasive treatments are associated with a higher likelihood of side effects and are not widely used due to the lack of standardized protocols.[5]

The patient in this case study reported experiencing pain and stiffness in the finger joints in January 2025. Additionally, patient's fingers swelled to the extent that their thickness visibly changed, leading to discomfort in daily activities. The patient visited the hospital and was diagnosed with calcific tendinitis. As a result, Ortho-Cellular Nutrition Therapy (OCNT) was administered to improve the calcific tendinitis, and significant results were observed.

Case Study

1. Subject

The case study involved a single patient diagnosed with calcific tendinitis.

1) Name: Lee OO (30 years old/F)
2) Diagnosis: Tenosynovitis, calcific tendinitis
3) Date of onset: January 28, 2025
4) Treatment period: January 28, 2025 - present
5) Chief complaints: Decreased function of the right thumb, swelling and pain, difficulty in daily activities
6) Medical history: Surgery for fibroadenoma in 2022
7) Social history: None
8) Family history: None
9) Present illness and medications: None

2. Methods

The following OCNT was applied:

First OCNT (January 28, 2025 - January 30, 2025)
- Cyaplex X powder (222, three times a day, two sachets per dose)
- Bioplex F (222, three times a day, two sachets per dose)
- Vivarol capsules (003, once a day, three capsules per dose)
- Sulfoplex PK tablets (003, once a day, three tablets per dose)
- Heartberry HAEDAM (200, once a day, two sachets per dose)
- Saltea Aqua Lemon (100, once a day, one sachet per dose)

(Heartberry HAEDAM and Saltea Aqua Lemon were mixed with water and taken together)

Second OCNT (February 4, 2025 – February 13, 2025)
- Diverol capsules (002, once a day, two capsules per dose)
- Vivarol capsules (303, twice a day, three capsules per dose)
- Calmaplex capsules (202, twice a day, two capsules per dose)
- Sulfoplex PK tablets (404, twice a day, four tablets per dose)
- Cyaplex X powder (101, twice a day, one sachet per dose)
- Cyaplex F powder (001, once a day, one sachet per dose, administered at two-day intervals)
- Viva C granules (001, once a day, one sachet per dose, administered at two-day intervals)
- Heartberry HAEDAM (two sachets per dose, as needed)
- Saltea Aqua Lemon (one sachet per dose, as needed)

(Heartberry HAEDAM and Saltea Aqua Lemon were mixed with water and taken together)

Along with the OCNT, lifestyle improvement prescriptions were also combined:
- The patient maintained a regular diet and was instructed to avoid snacks, foods made with flour and fried foods.
- The patient was advised to maintain sleep duration of at least 7 hours per night.

Results

The patient visited the hospital after experiencing swelling and pain in the fingers, where she was diagnosed with calcific tendinitis. Therefore, OCNT was prescribed to improve the swelling and pain caused by the patient's calcific tendinitis and to alleviate the symptoms.

After the first OCNT, the patient reported significant improvement in finger swelling and pain. The function, including finger movement, also improved. However, additional rounds of OCNT were administered to address the finger joint stiffness. Following these treatments, the patient reported a significant reduction in finger pain and swelling, with most of the discomfort resolved. Photographs of the affected area showing changes during the OCNT period are presented in Fig. 1, and the symptoms reported by the patient are summarized in Table 1.

Discussion

The patient in this case study is a woman in her 30s who reported feeling unwell starting on January 27, 2025, with diarrhea symptoms that were not accompanied by abdominal pain. The following day, pain and swelling in her fingers were noted, and she was diagnosed with calcific tendinitis at the hospital. After interviewing the patient at the pharmacy, it was determined that the tendinitis likely resulted from immune suppression caused by stress and fatigue, along with high levels of inflammation in her body. Therefore, OCNT was initiated to minimize oxidative stress and inflammation while promoting blood circulation to reduce swelling and pain, ultimately improving the patient's quality of life.

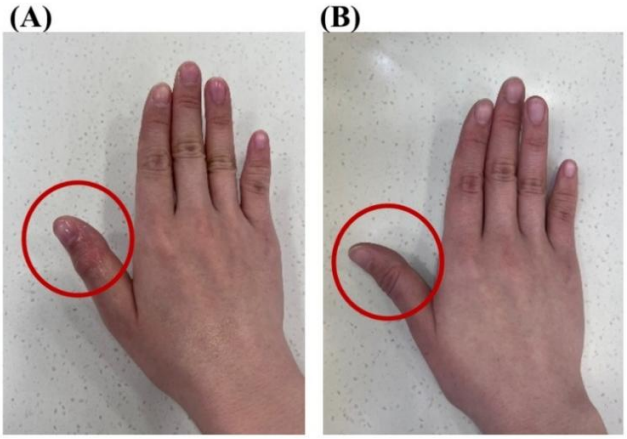

Fig. 1. Photographs of the affected finger after OCNT treatment. The photos are taken on January 29 and February 18 from left to right. It shows a visible improvement in finger swelling and exudate as the OCNT progressed.

Table 1. Symptoms experienced by the patient during OCNT. The discomfort increases from 0 to 5 on the scale.

Symptoms \ Rounds	1st Round (Jan 28, 2025)	2nd Round (Jan 29, 2025)	3rd Round (Jan 30, 2025)	4th Round (Feb 04, 2025)	5th Round (Feb 12, 2025)
Pain	3	3	1	1	0
Stiffness	3	5	2	2	1
Finger circumference (Normal finger circumference: 5.5 cm)	6cm	7.2cm	6cm	6.2cm	6cm

0: No symptoms, no impact on daily life; 1: Mild symptoms, with little impact on daily life; 2: Symptoms are more noticeable, requiring slight adjustments in daily activities; 3: Symptoms significantly impact daily life, making some activities difficult, 4: Major difficulty in performing daily activities; 5: Significant discomfort in daily life, with serious stress due to symptoms

Cyaplex X and Cyaplex F, prescribed to alleviate the patient's inflammation, contain anthocyanins extracted from aronia and polyphenols, which are natural plant-based compounds. Various studies have shown that polyphenols play a role in inflammation by regulating NF-κB and other transcription factors. NF-κB is a key inflammatory transcription factor known as nuclear factor-kappa B. It becomes activated alongside other inflammatory signaling pathways, triggered by factors such as cytokines, endotoxins, and physical or chemical stress, leading to inflammation. In this process, polyphenols have been shown to modulate the NF-kB signaling pathway, thus improving inflammation.[6] Polyphenols also exhibit tissue-protective and regenerative effects. They regulate inflammatory pathways to a physiological state and promote tissue regeneration through an anabolic process, supporting bodily recovery.[7] Therefore, the polyphenols in the Cyaplex prescription are likely to have contributed to the improvement of the inflammatory response and tissue condition in the patient.

Bioplex F contains various dietary fibers and fructooligosaccharides. Fructooligosaccharides are oligosaccharides in plants such as onions, garlic, asparagus, and bananas. When consumed, they are not hydrolyzed by enzymes in the small intestine and reach the colon without structural modification as soluble dietary fibers. In the colon, gut microbiota ferment fructooligosaccharides, stimulating metabolic activity and alleviating constipation. These compounds selectively promote the growth of beneficial gut bacteria rather than harmful microbes, thereby improving the intestinal environment. In this case, the patient reported experiencing diarrhea without abdominal pain, followed by finger pain. It was suspected that an unstable gut environment led to excessive inflammatory responses, resulting in diarrhea and finger joint inflammation.[8] Therefore, Bioplex F was prescribed to stabilize the gut environment and mitigate inflammation, ultimately improving the patient's overall health.

Bromelain is a proteolytic enzyme found in pineapples that, when consumed, positively affects cardiovascular diseases, vascular disorders, infectious diseases, and inflammation-related conditions.[9] Additionally, studies have suggested that bromelain can be used as a therapeutic agent to reduce pain and swelling associated with muscle injuries. In one study, oral administration of bromelain for 14 days in mice with tendon injuries significantly increased tendon cell proliferation. This indicates that bromelain stimulates tendon cell growth and contributes to tissue repair following tendon injuries.[10] This component is contained in Heartberry HAEDAM, which may have contributed to reducing inflammation in the patient's tendinitis-affected area and positively influenced tendon cell regeneration.

Saltea Aqua Lemon and Viva C granules contain vitamin C, an essential nutrient for collagen synthesis that plays a crucial role in forming and maintaining connective tissues. Studies have also indicated that vitamin C may influence tendon healing. In one study, mice given vitamin C for approximately one month exhibited the formation of new blood vessels and collagen at the wound site, suggesting its role in restoring normal connective tissue structure.[11] Therefore, the prescribed treatment likely played a role in minimizing the inflammatory response in tendinitis and promoting tendon recovery.

Unsaturated fatty acids help activate the skin barrier function and contribute to skin protection. α-linolenic acid and linoleic acid, a component of unsaturated fatty acids, improve skin barrier function by reducing the absorption of testosterone hormones when consumed. Additionally, supplementation with these two types of unsaturated fatty acids has been shown to increase the levels of eicosapentaenoic acid (EPA) and docosapentaenoic acid (DPA) in epidermal phospholipids by 15 and 3 times, respectively. These two compounds, omega-3 polyunsaturated fatty acids, have been shown to alleviate inflammation, prevent skin aging, and strengthen the skin barrier.[12] Vivarol, prescribed to the patient, contains plant-based essential omega-3 fatty acids, providing a variety of unsaturated fatty acids. Therefore, this supplementation likely significantly helped reduce the inflammation associated with the patient's tendinitis.

Calmaplex powder contains a rich supply of calcium and magnesium. Ninety-nine percent of calcium in the body is stored in the bones, and the dietary requirements for calcium vary at different stages of life. The need for calcium increases during childhood, adolescence, pregnancy, childbirth, and aging. Insufficient calcium intake during childhood and adolescence can lead to developmental bone disorders, while in adults, it can accelerate bone loss and contribute to osteoporosis. Therefore, adequate calcium intake may help prevent bone diseases and improve bone health.[13] Magnesium is a crucial mineral that determines the aging and lifespan of cells in the human body. Research has shown that supplementing magnesium can alleviate apoptosis in chondrocytes and promote the proliferation and differentiation of cartilage cells. Conversely, magnesium deficiency or insufficiency has been reported to induce fibroblast aging. Therefore, supplementing magnesium can contribute to improving osteoarthritis.[14] In this case, the combination of calcium and magnesium supplementation likely enhanced the patient's bone and muscle health, positively impacting their overall condition.

Sulfoplex PK tablets contain methylsulfonylmethane (MSM), which positively impacts joint and cartilage health improvement. MSM is a sulfur-based dietary nutrient with anti-inflammatory properties and is known to reduce pain associated with osteoarthritis. One study reported that MSM supplementation also helped reduce muscle pain in individuals who engage in physical exercise.[15] Additionally, Diverol prescribed to the patient contains vitamins D, E, and K. Vitamin D, which is synthesized through sunlight exposure or obtained from the diet, helps in the absorption and utilization of calcium and phosphorus, playing a crucial role in bone formation and maintenance.[16] Vitamin E has anti-inflammatory and antioxidant properties, which help reduce oxidative stress in the body, while vitamin K is essential for bone formation and metabolism.[17,18] These nutrients are believed to improve the condition of patient's finger bones, which tendinitis may affect. Therefore, OCNT was prescribed to improve the patient's condition by incorporating these components into their supplementation.

The patient underwent intensive OCNT for approximately two weeks, from January 28, 2025. During the OCNT treatment, the patient visited the hospital and was diagnosed with calcific tendinitis. She was prescribed Afenac Tab. 100 mg, K Pery Tab. 50 mg, and Lafuton Tab. 10 mg, but she chose not to take the prescribed medication and continued with OCNT. As a result, the patient showed improvements in finger movement and function, and the swelling and inflammation were significantly reduced. However, the patient reported that stiffness remained when bending her fingers, which will be managed through ongoing OCNT treatment. Since this study involves a single patient, its applicability to other tendinitis cases is limited. Furthermore, additional follow-up studies need to be designed to provide objective evidence. Nevertheless, considering the significant improvements in pain relief and visible symptoms, this case is considered meaningful and is reported with the patient's consent.

References

1. Kim JH, Lee JH, Park JU, Kwon ST. Acute calcific tendinitis in the distal interphalangeal joint. *Archives of plastic surgery*. 2016;43(03):301-303.
2. Raggio BS, Ficenec SC, Pou J, Moore B. Acute calcific tendonitis of the longus colli. *Ochsner Journal*. 2018;18(1):98-100.
3. Tendinitis C. Calcific Tendinitis: A Pictorial Review. *Canadian Association of Radiologists Journal*. 2009;60:2637272.
4. Uhthoff HK, Loehr JW. Calcific tendinopathy of the rotator cuff: pathogenesis, diagnosis, and management. *JAAOS-Journal of the American Academy of Orthopaedic Surgeons*. 1997;5(4):183-191.
5. del Cura JL, Torre I, Zabala R, Legórburu A. Sonographically guided percutaneous needle lavage in calcific tendinitis of the shoulder: short-and long-term results. *American Journal of Roentgenology*. 2007;189(3):W128-W134.
6. Mueller A-L, Brockmueller A, Kunnumakkara AB, Shakibaei M. Modulation of inflammation by plant-derived nutraceuticals in tendinitis. *Nutrients*. 2022;14(10):2030.
7. Mueller A-L, Brockmueller A, Kunnumakkara AB, Shakibaei M. Calebin A, a compound of turmeric, down-regulates inflammation in tenocytes by NF-κB/scleraxis signaling. *International Journal of Molecular Sciences*. 2022;23(3):1695.
8. Sabater-Molina M, Larqué E, Torrella F, Zamora S. Dietary fructooligosaccharides and potential benefits on health. *Journal of physiology and biochemistry*. 2009;65:315-328.
9. Hikisz P, Bernasinska-Slomczewska J. Beneficial properties of bromelain. *Nutrients*. 2021;13(12):4313.
10. Aiyegbusi A, Duru F, Anunobi C, Noronha C, Okanlawon A. Bromelain in the early phase of healing in acute crush Achilles tendon injury. *Phytotherapy research*. 2011;25(1):49-52.
11. Ömeroğlu S, Peker T, Türközkan N, Ömeroğlu H. High-dose vitamin C supplementation accelerates the Achilles tendon healing in healthy rats. *Archives of orthopaedic and trauma surgery*. 2009;129:281-286.
12. Simard M, Tremblay A, Morin S, et al. α-Linolenic acid and linoleic acid modulate the lipidome and the skin barrier of a tissue-engineered skin model. *Acta biomaterialia*. 2022;140:261-274.
13. Flynn A. The role of dietary calcium in bone health. *Proceedings of the Nutrition Society*. 2003;62(4):851-858.
14. Kuang X, Chiou J, Lo K, Chunyi W. Magnesium in joint health and osteoarthritis. *Nutrition Research*. 2021;90:24-35.
15. Withee ED, Tippens KM, Dehen R, Hanes D. Effects of msm on exercise-induced muscle and joint pain: A pilot study. *Journal of the International Society of Sports Nutrition*. 2015;12:1-2.
16. Holick MF. Vitamin D deficiency. *New England journal of medicine*. 2007;357(3):266-281.
17. Singh U, Devaraj S, Jialal I. Vitamin E, oxidative stress, and inflammation. *Annu Rev Nutr*. 2005;25(1):151-174.
18. Bügel S. Vitamin K and bone health. *Proceedings of the Nutrition Society*. 2003;62(4):839-843.