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Case Report

세포교정영양요법(OCNT)을 이용한 삼중음성 유방암 장기 관해 및 증상 개선 사례

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Ortho-Cellular Nutrition Therapy (OCNT)-Assisted Long-Term Remission and Symptom Improvement in Triple-Negative Breast Cancer: A Case Report

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ABSTRACT

Objective: Breast cancer is one of the most common malignant tumors affecting women worldwide. In clinical practice, breast cancer is diagnosed, and its subtype is determined using imaging studies and histopathologic examinations. When tumor cells are negative for estrogen receptor (ER), progesterone receptor (PR), and human epidermal growth factor receptor 2 (HER2) protein expression, the disease is diagnosed as triple-negative breast cancer (TNBC). TNBC is the most heterogeneous subtype of breast cancer, has markedly limited treatment options, and is associated with a poor prognosis. Therefore, although novel therapeutic approaches are being introduced to address this unmet need, the long-term evidence base remains insufficient, and continued investigation of new treatment strategies is warranted.

Case Report: This case involved a Korean woman in her 40s who was diagnosed with TNBC. After the diagnosis, she underwent chemotherapy and radiotherapy and continued to report treatment-related fatigue, lymphedema, and pain. Following the completion of anticancer therapy, Ortho-Cellular Nutrition Therapy (OCNT) was administered to promote overall symptom improvement using omega-3 fatty acids, bromelain, chlorella, minerals, anthocyanins, fucoidan, beta-glucan, vitamin D, heme iron, and *Ginkgo biloba* leaf extract. Consequently, the patient's symptoms showed a clinically meaningful improvement, and approximately 3 years and 10 months after initiation of OCNT, she was evaluated by the treating clinicians as having achieved complete remission.

Conclusion: Because this report describes a single patient, it is limited in its ability to support applying the same OCNT regimen to all patients with TNBC. Nevertheless, the present case is noteworthy in that an OCNT prescription tailored to the patient's clinical condition was associated with improvement in cancer treatment–related symptoms and achievement of complete remission.

Keywords Ortho-Cellular Nutrition Therapy (OCNT), Triple-negative breast cancer, prognosis, cancer-related fatigue syndrome, remission

Introduction

Breast cancer is one of the most common malignant tumors among women worldwide. According to 2022 estimates released by the International Agency for Research on Cancer (IARC), approximately 2.3 million new cases were diagnosed globally, accounting for about 23.8% of all cancer diagnoses among women. In Korea, 34,628 individuals were diagnosed with breast cancer in 2021, corresponding to an incidence of 134.5 per 100,000 population. Notably, both the number of newly diagnosed cases and the incidence per 100,000 population have been increasing each year.[1]

Breast cancer may be detected at an early stage as a painless mass and can be accompanied by changes in its shape or size, overlying skin changes, and mastalgia. When malignancy is suspected, the diagnosis is established through history taking and clinical breast examination, imaging evaluation using ultrasonography or mammography, and biopsy of the suspected lesion. In this process, the breast cancer subtype and risk stratification are determined based on multiple clinicopathologic

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factors, including axillary lymph node involvement, tumor size, histologic grade, and the expression status of estrogen receptor (ER), progesterone receptor (PR), human epidermal growth factor receptor 2 (HER2), and Ki-67 protein.[2,3]

When the expression of ER, PR, and HER2 is negative, the tumor is diagnosed as triple-negative breast cancer (TNBC). This subtype accounts for approximately 15 to 20 percent of all breast cancers and has several distinct clinical characteristics compared with other subtypes. First, TNBC shows minimal responsiveness to these receptors and HER2. Accordingly, TNBC is biologically highly heterogeneous and is often high-grade, typically grade 3 or higher. Second, TNBC tends to occur at a relatively younger age, particularly among premenopausal women in their 40s. Finally, because endocrine and HER2-targeted therapies are not applicable, treatment options are markedly limited. Owing to these characteristics, TNBC has a poor prognosis, with frequent metastasis and recurrence, as well as increased 5-year mortality and risk of death.[4]

TNBC is currently managed using standard strategies that include surgical tumor resection, cytotoxic chemotherapy, and radiotherapy. However, a substantial proportion of patients present after the optimal window for treatment, and the rapid evolution of TNBC limits the prognostic benefit of conventional approaches. Recently, emerging therapies such as immune checkpoint inhibitors (ICIs), cell cycle inhibitors, and signaling pathway inhibitors have been introduced. Combination regimens that integrate multiple modalities are also being adopted as alternative therapeutic strategies. Nevertheless, the optimal treatment varies across patients, and evidence supporting long-term recovery and survival outcomes remains limited. Therefore, the need for continued development and evaluation of new therapeutic approaches persists.[5]

This case report describes a patient with TNBC who underwent surgery, chemotherapy, and radiotherapy and subsequently received Ortho-Cellular Nutrition Therapy (OCNT). After completion of anticancer treatment, the patient maintained remission for 4 years and 6 months while receiving OCNT. This clinical course is considered rare in TNBC, which is generally associated with an unfavorable prognosis. With the patient's consent, I report this case.

Case report

1. Patient

One patient with TNBC was included.

1) Name: Choi OO (47 years old / F)
2) Diagnosis: TNBC, Stage IIB. Detailed findings at diagnosis are presented in Table 1.
3) Onset: February 2021
4) Treatment period: November 2021 to present
5) Chief complaints: post-chemotherapy fatigue (persistent fatigue, lethargy, and dizziness) upper extremity lymphedema, dryness and pruritus, axillary pain, and numbness and tingling in the hands and feet
6) Past medical history: none
7) Social history: employed in manufacturing of mechanical products
8) Family history: six of seven paternal siblings were diagnosed with cancer and died during treatment. A sister died of TNBC in 2014.
9) Present illness and current medications: breast-conserving surgery, approximately 5 cm, chemotherapy, AC regimen using doxorubicin and cyclophosphamide, radiotherapy for 7 weeks with a total of 29 sessions, Nolvadex D tablet, tamoxifen, and Synthroid 0.1 mg, levothyroxine.

2. Methods

The OCNT regimen prescribed is presented in detail in Table 2. In addition, a whole-food diet was recommended as a concurrent dietary intervention.

Results

Approximately 8 months after the completion of anticancer treatment, OCNT was started as an adjuvant supportive therapy. At approximately 3 months after OCNT was started, fatigue related to anticancer treatment began to improve. Subsequently, dizziness and sensory symptoms, including upper extremity and axillary pain, numbness, and tingling in the hands and feet, gradually improved.

The patient continued OCNT. In August 2025, blood testing showed normal levels of tumor biomarkers, including AFP, CA125, CA15-3, CA19-9, and CEA (Fig. 1). Imaging evaluation also indicated a stable status with no evidence of intramammary recurrence or metastasis, bone metastasis, or lung metastasis. Based on an overall assessment incorporating these findings, complete remission (CR) was determined.

Conclusions

The patient was in her 40s at the time of breast cancer diagnosis, and a mass in the left breast was detected on an examination in March 2021. Subsequent biopsy and immunohistochemical analysis led to a diagnosis of TNBC. After the diagnosis, breast-conserving surgery and standard chemotherapy were administered, followed by radiotherapy. However, after completion of standard treatment, the patient reported persistent systemic fatigue, upper extremity pain involving the shoulder and arm, and numbness and tingling in

Table 1. Detailed findings at patient diagnosis.

Category	Details
Pathologic findings	Left breast cancer
Diagnosis	Invasive ductal carcinoma (IDC)
Tumor size	12×8 mm
Stage assessment (TNM stage)	T1c, N1a, M0 → Stage ⅡB
Histologic grade assessment (Elston-Bloom-Richardson grade)	Architectural score 3. Nuclear score 3. Mitotic score 3. Total score 9. → Grade Ⅲ, high grade
Ductal carcinoma in situ (DCIS) assessment	< 25%
Immunohistochemistry (IHC)	ER, PR, HER2 All Negative → Triple-negative status Ki-67 50%, P53 Positive, EFGR Positive
Lymph node metastasis	Metastasis was identified in 2 of 18 examined lymph nodes, involving two sentinel lymph nodes. The largest metastatic focus measured up to 1.3 cm, and extracapsular extension was present.
General opinion	TNBC, Stage IIB

Table 2. OCNT prescribed for the case

OCNT course	Prescription period	Prescription regimen and dosage	
Course 1	2021.11.01 – 2022.10.22 (approximately 1 year)	• Cyaplex F granules (101) • Eufaplex alpha stick (101) • Betaplex F granules (101) • Enzaplex F granules (101)	• Nutaplex granules (101) • Sulfoplex F powder (101) • Selenplex capsules (101)
Course 2	2022.10.23 – 2023.10.13 (approximately 1 year)	• Cyaplex F granules (101) • Eufaplex alpha stick (101) • Betaplex F granules (101) • Enzaplex F granules (101) • Nutaplex granules (101) • Sulfoplex F powder (101)	• Selenplex capsules (101) • Viva circu capsules (101) • Aqua SAC pure (1 sachet daily)* • Cyaplex mineral bamboo salt (1 sachet daily)* • Heartberry black (1 sachet daily)*
Course 3	2023.10.14 – 2024.09.27 (approximately 1 year)	• Cyaplex F capsules (303) • Selenplex capsules (101)	• Hemoplex capsules (202)
Course 4	2024.09.28 – 2025.01.18 (approximately 4 months)	• Cyaplex F granules (101) • Selenplex capsules (202) • Hemoplex capsules (202)	• Viva circu capsules (101) • Diverol capsules (101)
Course 5	2025.01.19 – 2025.09.21 (approximately 8 months)	• Cyaplex F capsules (303) • Selenplex capsules (202) • Hemoplex capsules (202)	• Viva circu capsules (101) • Diverol capsules (101)
Course 6	2025.09.22 – present	• Cyaplex F tablet (300) • Selenplex capsules (200)	• Diverol capsules (100)

* instructed to dilute in 500 mL of water before ingestion.
** 100: once per day, 1 sachet/tablet/capsule per dose in the morning, 200: once per day, 2 sachets/tablets/capsules per dose in the morning, 300: once per day, 3 sachets/tablets/capsules per dose in the morning, 101: twice per day, 1 sachet/tablet/capsule per dose in the morning, in the evening, 202: twice per day, 2 sachets/tablets/capsules per dose in the morning, in the evening, 303: twice per day, 3 sachets/tablets/capsules per dose in the morning, in the evening

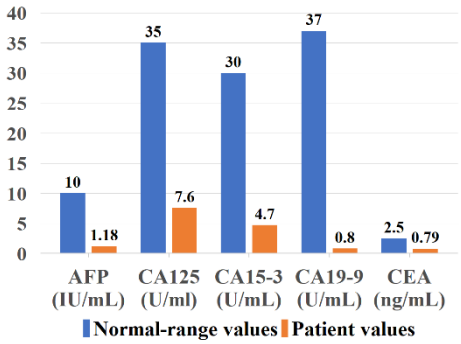

Fig. 1. Cancer-related biomarker levels in the patient as of August 20, 2025. Overall biomarker levels were observed to be within the normal range.

the arm and hand. These symptoms substantially impaired quality of daily life and reduced treatment adherence.

A strong contribution of family history was considered likely, given that 6 of 7 paternal siblings had been diagnosed with cancer and that a sister died after a diagnosis of TNBC. In addition, the diagnostic findings suggested an unfavorable prognosis because the tumor was classified as high grade and lymph node metastasis was identified. The Ki-67 index, which is used as a proliferation marker, was also high, and markers associated with tumor risk, including P53 and EGFR, were positive. Therefore, additional supportive options beyond standard treatment were considered necessary.

Therefore, OCNT was applied as a supportive therapy to alleviate fatigue and other symptoms that developed during the anticancer treatment course and to improve overall physical condition. In this process, the OCNT prescription focused on restoring nutritional balance, enhancing antioxidant capacity, strengthening immune function, and improving the patient's discomfort.

First, to restore nutritional balance, Eufaplex alpha, Nutaplex, Enzaplex, Cyaplex mineral bamboo salt, and Aqua SAC pure were prescribed. In patients with cancer, nutritional imbalance can develop readily due to the disease itself and anticancer treatment, and the risk of weight loss is relatively high. One study synthesized randomized controlled trials that evaluated the effect of oral omega-3 supplementation on body weight in patients with cancer. The analysis showed that body weight and body mass index increased significantly in groups receiving omega-3 fatty acids.[6] Accordingly, Eufaplex alpha was prescribed to provide omega-3 components. In addition, Enzaplex contains plant-derived enzymes, including bromelain and papain, and may help increase proteolytic activity. When these enzymes were administered to experimental mice, an increase in small intestinal mucosal thickness was observed, suggesting a potential increase in protein absorption.[7]

Nutaplex contains chlorella as a primary component, which is a type of green freshwater microalga. It is reported to contain a wide range of nutrients, including essential amino acids, polyunsaturated fatty acids such as alpha-linolenic acid and linoleic acid, vitamins B, C, D, E, and K, carotenoids, and dietary fiber.[8] Therefore, supplementation with this component was intended to help restore overall nutritional balance. In addition, mineral supplementation was used to improve the efficiency of water absorption. In multiple randomized studies, groups that developed dehydration after exercise consumed electrolyte-containing solutions, including minerals. In these studies, overall urine output decreased. Blood analyses also showed increased serum osmolality, which was considered to support a physiologic environment conducive to fluid retention.[9] Consequently, Cyaplex mineral bamboo salt and Aqua SAC pure were used to provide high-quality mineral components.

Strengthening antioxidant and immune functions was considered beneficial for improving cancer treatment related fatigue and supporting recovery. Therefore, OCNT was prescribed for this purpose. Cyaplex F contains anthocyanins extracted from berries and fucoidan extracted from kelp. Anthocyanins are reported to inhibit factors that generate

reactive oxygen species and to contribute to anti-inflammatory and immune regulatory effects through suppression of proinflammatory cytokines.[10] Fucoidan is reported to influence the activity of immune cells such as natural killer (NK) cells and macrophages. It has also been reported to support anticancer activity by attenuating tumor related inflammation and by exerting cell cycle inhibitory and antiangiogenic effects.[11]

Beta-glucan is a polysaccharide present in the cell walls of fungi such as bacteria and mushrooms. This component is reported to enhance innate immune activity induced by proinflammatory cytokines and to support the function of immune cells with tumoricidal activity, including neutrophils and NK cells.[12] Vitamin D is generally known to contribute to skeletal development and maintenance, but it has also been studied for its role in innate immunity. When inflammatory stimulation is sensed in response to factors such as lipopolysaccharide (LPS) and interferon gamma (IFN-γ), this nutrient is converted in the body to the active form 1,25-dihydroxyvitamin D. This form may enhance immune cell activity and thereby support immune responses.[13] These two components were provided using Betaplex F and Diverol, respectively.

The patient reported persistent discomfort related to lymphedema and numbness and tingling in the hands and feet after anticancer treatment. Therefore, an OCNT regimen was prescribed to address these symptoms. Improvement in blood and lymphatic circulation was considered important, and Hemoplex and Viva circu were prescribed. Hemoplex contains heme iron, which supports efficient iron supplementation and is reported to be associated with fewer gastrointestinal adverse effects than non-heme iron, which may contribute to better adherence. Iron is a key component of hemoglobin in red blood cells and plays an essential role in oxygen transport. Therefore, it was considered one of the necessary components for improving systemic circulation.[14] Viva circu contains *Ginkgo biloba* leaf extract as a primary component, which has been reported to have potential benefits in various cardiovascular conditions. In one clinical trial that evaluated changes in blood flow after administration of *Ginkgo biloba* leaf extract, a significant increase in blood flow was observed compared with a placebo control group.[15] Therefore, these components were used to support improvement in circulation.

With this OCNT regimen, fatigue, which had been the most burdensome symptom after anticancer treatment, was alleviated. Dizziness, pain, and numbness and tingling in the hands and feet were also reported to improve gradually. Functional capacity for daily activities and overall activity levels also improved. Approximately 4 years and 6 months after initiation of hospital treatment and 3 years and 10 months after OCNT was added, imaging studies and clinical assessment indicated complete remission. No recurrence has been observed to date, and a stable quality of life has been maintained. However, because this is a single patient case, there are limitations in applying the same OCNT regimen to all patients with TNBC. Nevertheless, OCNT administered in parallel with anticancer treatment appeared to help reduce treatment related adverse effects and may have contributed to the achievement of complete remission. With the patient's consent, this case is reported.

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