CellMed
Orthocellular Medicine and Pharmaceutical Association

Case Report

세포교정영양요법(OCNT)을 이용한 욕창 개선 사례

이아영 약사
서울특별시 강북구 도봉로 242 365올리브약국

A Case Study on Improving Pressure Ulcers Using Ortho-Cellular Nutrition Therapy (OCNT)

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

ABSTRACT

Objective: Case report on improving pressure ulcers through Ortho-Cellular Nutrition Therapy (OCNT).
Methods: OCNT was applied to a Korean female in her 80s who experienced discomfort due to pressure ulcers that developed during hospitalization.
Results: After implementing OCNT, the discharge, edema, and erythema associated with her pressure ulcers showed significant improvement, and the medical team confirmed her progress.
Conclusion: OCNT may help alleviate symptoms in patients suffering from pressure ulcers.

Keywords: Ortho-Cellular Nutrition Therapy (OCNT), Pressure Ulcers, Pressure, Discharge

Introduction

Pressure ulcers, also known as pressure sores, are localized ischemic lesions caused by prolonged pressure, shear, or friction. Commonly arising in patients who remain bedridden for extended periods, they are often referred to as “Pressure Sore” or “Bedsore.” However, because pressure ulcers may occur if a localized area is subjected to continuous pressure, they do not occur solely in patients confined to bed.[1]

The causes of pressure ulcers can broadly be categorized into external factors and internal factors, including underlying health conditions and age. The external factors fall under the subcategories of pressure, friction and shear, and moisture. Because the human body is not static, prolonged pressure on a specific area can deform the tissue and reduce blood flow. If this pressure exceeds the normal capillary range of 16–33 mmHg, the blood vessels may be occluded, leading to a hypoxic state. This results in microcirculation blockage and ischemia, and can ultimately cause soft tissue necrosis, manifesting as pressure ulcers. Friction and shear can damage the skin, making it vulnerable to infection and thus increasing the risk of pressure ulcers. Excessive moisture from secretions such as sweat, urine, or feces can penetrate the skin surface, leading to damage and potential blister formation.[2]

With regard to internal factors, various underlying health issues can influence the development of pressure ulcers. Individuals with limited mobility, such as those experiencing paralysis, may be unable to regularly change their position, allowing pressure to persist at specific points and making it difficult to relieve ischemic conditions. Furthermore, chronic illnesses like diabetes or anemia can affect blood flow and hinder the delivery of oxygen and nutrients to tissues, potentially contributing to pressure ulcer formation. Age can also be a determinant of pressure ulcer incidence; as people age, the dermis becomes thinner, and decreased overall muscle mass reduces mobility. Additionally, diminished oxygen saturation and perfusion in dermal blood vessels further reduce the supply of oxygen and nutrients.[2] A combination of these internal and external factors can culminate in the onset of pressure ulcers.

Pressure ulcers are graded based on the symptoms and extent of tissue damage at the affected site, thereby indicating their severity. The extent of severity can be categorized into four distinct stages in total, and the criteria for these categories are determined as shown in Table 1. However, if necrotic tissue is present, determining the exact stage may be difficult.

*Correspondence: Ayoung Lee
E-mail: angela796@naver.com
Received Dec 31, 2024; **Accepted** Dec 31, 2024; **Published** Dec 31, 2024
doi: http://dx.doi.org/10.5667/CellMed.spc.109

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

Table 1. Four-stage classification of pressure ulcers according to affected site symptoms and severity.[3]

1st Stage	- The affected area becomes firm, exhibits redness, and may feel slightly warm. - Even after the removal of the causative factor (e.g., pressure), the condition does not immediately improve. - It may resolve naturally over a short period of time.
2nd Stage	- Damage to the epidermis or dermis may appear as abrasions, blisters, and edema. - If the damage extends to the fatty tissue, pain may accompany it. - Approximately one to two weeks are required for recovery after removing the causative factor (e.g., pressure).
3rd Stage	- Necrosis or similar damage occurs throughout the skin, affecting subcutaneous tissue. - Necrotic tissue is visible upon inspection, and severe edema with foul-smelling exudate may be present. - Several months of recovery are typically required after debridement of necrotic tissue.
4th Stage	- The area of necrosis extends deeper than in the previous stage and may affect muscles, bones, and supporting tissues. - If this stage persists, it can become life-threatening.

As shown above, the symptoms and prognosis of pressure ulcers vary according to the stage, and treatment methods also differ. These include removing exudates from the wound using wet gauze or negative-pressure therapy, protecting the lesion with dressings, and surgically removing the damaged area followed by skin grafting. Antibiotics or topical ointments may be used to treat infection at the lesion site. Additionally, to prevent or alleviate pressure ulcers, cushions or other aids can help distribute pressure, and both patients and caregivers can receive instruction on changing positions and relieving pressure. Moreover, because nutritional deficiencies can delay ulcer healing, an adequate supply of quality nutrients is essential alongside treatment.[3]

The patient in this case suffered from pressure ulcers that developed during her hospital stay. However, no specific treatment was being implemented at the hospital. Therefore, we sought to improve her symptoms using OCNT, and the outcome proved to be significant. The patient's consent has been obtained to report this case.

Case Study

1. Subject

Case study conducted on one single patient with a pressure ulcer.

1) Name: Lee OO (89 years old / F)
2) Diagnosis: Pressure ulcer, Stage 2
3) Date of onset: December 11, 2024
4) Treatment duration: December 11, 2024 – Present
5) Primary symptoms: Redness, erythema, skin tissue damage, discharge
6) Medical history: Type 2 diabetes, hyperlipidemia, Alzheimer's disease, pyelonephritis
7) Social history: None
8) Family history: None
9) Medications and Treatments Applied: - Hyperlipidemia: Livaro Tablet 2 mg, once a day, - Alzheimer's disease: Ebixa Tablet 10 mg, twice a day; Exelon Patch 10, once a day, - Diabetes: Lantus Injection

2. Methods

- Prescription
  Cyaplex balm
  Eufaplex alpha

- Application Method

During the first three days, the patient was instructed to apply a sufficient amount of Cyaplex balm to the pressure ulcer area and then dress it with a foam-type moist dressing. Afterward, one sachet of Eufaplex alpha was to be applied first to the affected area, followed by a sufficient application of Cyaplex balm. The same dressing technique was continued as before. OCNT was applied two to three times per day, and the moist dressing was replaced daily.

Because the patient could not consume solid foods and was on a liquid diet, no oral medications were separately prescribed.

Results

On December 11, 2024, the patient was found to have developed a pressure ulcer for the first time. The wound area showed burst blisters, discharge, and erythema. In addition, the entire area of the wound presented with warmth and swelling, and skin damage was observed around the anus. OCNT was applied to improve these symptoms.

After three days of application, more than 40% of the affected area, excluding the part where the hip bone makes direct contact, showed reduced redness, and there was no more discharge. Furthermore, the anal region, which had shown the most severe symptoms, showed decreased swelling and redness, with partial regeneration of skin tissue. The patient's attending physician examined the wound and commented favorably on the prognosis.

On the sixth day of application, December 17, visual inspection revealed that skin tissue damage had improved in more than 80% of the wound area, with warmth and edema completely resolved. In particular, the overall skin around the anus displayed newly forming, lighter-colored tissue. Subsequently, the medical staff diagnosed that the pressure ulcer had fully recovered, and the patient reported a high level of satisfaction.

Fig. 1 shows the condition of the patient's wound site during the OCNT application period, and Table 2 presents the degree of discomfort the patient experienced.

Discussion

The patient in this case is a woman in her 80s, who was hospitalized in August 2024 for high fever and coma caused by pyelonephritis. She had also experienced frequent recurrences of pyelonephritis and urinary tract infections in the past, resulting in multiple admissions to a tertiary general hospital and records of antibiotic therapy. Furthermore, a diagnosis of high blood sugar made about two to three years earlier led to the use of insulin injections to manage her condition, as indicated by her medical history.

After being hospitalized, she spent more time confined to bed and changed positions less frequently, leading to a diagnosis of Stage 2–3 pressure ulcers by the third month of her hospital stay. However, apart from moist dressing, no other significant measures were taken, and the patient independently applied a powdered wound-healing product. Despite these efforts, no notable improvement was seen; blisters continued to form and burst, causing ongoing discharge. Subsequently, the patient's caregiver and family member visited a pharmacy, where they decided to try OCNT to address these symptoms.

Table 1. Degree of discomfort perceived by the patient during OCNT. The discomfort experienced by the patient increases from 0 to 5.

Duration / Symptoms	1st time (Dec 11, 2024)	2nd time (Dec 14, 2024)	3rd time (Dec 17, 2024)
Redness, Erythema	5	3	1
Edema	5	2	1
Discharge	5	2	1
Skin Necrosis	3	1	1

0: No symptoms and no impact on daily life, 1: Mild symptoms with almost no impact on daily life, 2: Clearer symptoms requiring some adaptation in daily activities, 3: Symptoms significantly impacting daily life and causing difficulty in performing some activities, 4: Symptoms causing major difficulties in daily activities, 5: Discomfort causing severe stress in daily life.

Cyanidin is a type of phenolic compound known for its strong antioxidant properties. Recent research has shown that cyanidin inhibits 15-lipoxygenase and xanthine oxidase, enzymes that generate reactive oxygen species with damaging effects on vascular cells. It has also been reported to exert inhibitory activity against potentially harmful microorganisms such as *Streptococcus pyogenes*, *Staphylococcus aureus*, and influenza viruses. Moreover, cyanidin can contribute to managing inflammation by regulating NF-κB, a key factor in the body's inflammatory response.[4] This component, one of the main ingredients in Cyaplex balm, likely helped reduce infectious reactions such as the discharge observed in the patient's lesion site.

Enhancing antioxidant and anti-inflammatory activity in the area where a skin lesion has developed is crucial, but it is also necessary to protect the skin itself and improve its overall condition. Lanolin is a naturally occurring oil secreted by sheep's skin. When applied to human skin, it forms a protective film that prevents moisture loss and helps protect the skin. One study found that lanolin has a composition similar to the vernix caseosa observed on fetuses and newborns. Further in vivo tests showed that lanolin surpassed other substances in preventing transepidermal water loss and promoting skin barrier recovery.[5]

Cyaplex balm contains various plant-derived oils such as olive oil, sunflower seed oil, rosehip fruit oil, and shea butter. Multiple studies have indicated that these ingredients benefit skin health in a variety of ways. Both olive oil and rosehip oil aid wound healing and have been associated with anti-aging properties, as well as providing anti-inflammatory and antioxidant effects. Sunflower seed oil is known to help strengthen the skin barrier, and shea butter has been shown through research to have moisturizing, anti-inflammatory, and antioxidant properties. Consequently, these ingredients likely

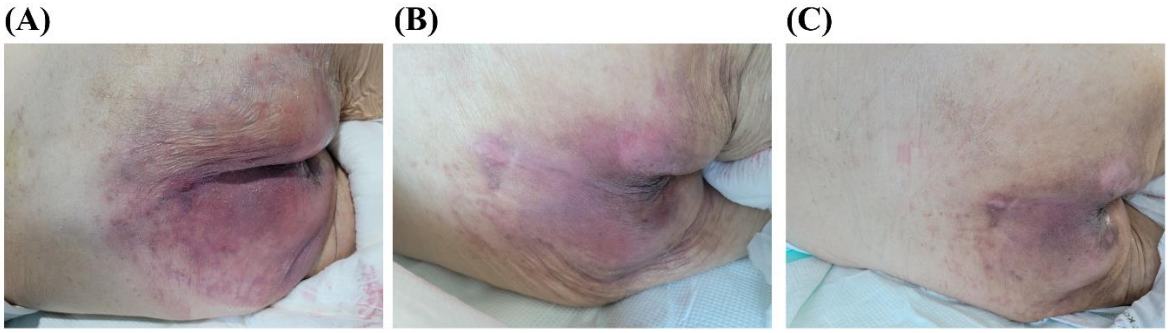

Fig. 1. Photographs of the patient's pressure ulcer area during OCNT administration. (A) December 11, 2024, (B) December 14, 2024, (C) December 17, 2024. As OCNT progressed, an overall reduction in discharge and erythema was observed, along with noticeable improvements in skin damage.

contributed to improving the skin's condition and promoting healthy skin.[6,7]

In addition to the plant-based oils found in Cyaplex balm, Eufaplex alpha contains abundant alpha-linolenic acid and linoleic acid, both of which are types of fatty acids. These two components play a significant role in improving skin barrier function by influencing lipid mediators on the skin surface, as demonstrated in skin model experiments.[8] Numerous studies have reported improvements in skin conditions through internal or external application of unsaturated fatty acids like omega-3. For example, in one study, mice with dermatitis experienced a roughly 30% increase in skin moisture content and a marked reduction in scratching behavior after consuming fish oil containing omega-3.[9] In another study, mice with skin wounds showed significantly better healing than the untreated control group when omega-3–containing oil was periodically applied to the skin.[10] Thus, these nutrients likely helped improve the patient's skin symptoms.

By using the aforementioned nutrients, the patient's discharge, redness, and edema associated with the pressure ulcer noticeably improved. This progress was visually confirmed, and a favorable prognosis was also observed by the medical team, indicating a meaningful result. The patient herself reported an enhanced quality of life, and her caregiver also expressed high satisfaction.

Because this case report involves only a single patient, its universal applicability to all patients with pressure ulcers may be limited. Nevertheless, it appears noteworthy that a relatively simple application of OCNT led to improvements in both the pressure ulcer symptoms and the patient's quality of life. Accordingly, this case is reported with the patient's consent.

References

1. Mervis JS, Phillips TJ. Pressure ulcers: Pathophysiology, epidemiology, risk factors, and presentation. *J Am Acad Dermatol*. Oct 2019;81(4):881-890.
2. Nancy GA, Kalpana R, Nandhini S. A Study on Pressure Ulcer: Influencing Factors and Diagnostic Techniques. *Int J Low Extrem Wounds*. Sep 2022;21(3):254-263.
3. Bhattacharya S, Mishra R. Pressure ulcers: current understanding and newer modalities of treatment. *Indian Journal of plastic surgery*. 2015;48(01):004-016.
4. Ren Y, Frank T, Meyer G, et al. Potential Benefits of Black Chokeberry (Aronia melanocarpa) Fruits and Their Constituents in Improving Human Health. *Molecules*. Nov 13 2022;27(22)
5. Rissmann R, Oudshoorn MH, Kocks E, Hennink WE, Ponec M, Bouwstra JA. Lanolin-derived lipid mixtures mimic closely the lipid composition and organization of vernix caseosa lipids. *Biochim Biophys Acta*. Oct 2008;1778(10):2350-60.
6. Vaughn AR, Clark AK, Sivamani RK, Shi VY. Natural Oils for Skin-Barrier Repair: Ancient Compounds Now Backed by Modern Science. *Am J Clin Dermatol*. Feb 2018;19(1):103-117.
7. Lin TK, Zhong L, Santiago JL. Anti-Inflammatory and Skin Barrier Repair Effects of Topical Application of Some Plant Oils. *Int J Mol Sci*. Dec 27 2017;19(1)
8. 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 Biomater*. Mar 1 2022;140:261-274.
9. Huang TH, Wang PW, Yang SC, Chou WL, Fang JY. Cosmetic and Therapeutic Applications of Fish Oil's Fatty Acids on the Skin. *Mar Drugs*. Jul 30 2018;16(8)
10. Ishak WMW, Katas H, Yuen NP, Abdullah MA, Zulfakar MH. Topical application of omega-3-, omega-6-, and omega-9-rich oil emulsions for cutaneous wound healing in rats. *Drug delivery and translational research*. 2019;9:418-433.