CellMed
Orthocellular Medicine and Pharmaceutical Association

Case Report

세포교정영양요법(OCNT)을 이용한 척추 변형으로 인한 요추 통증 개선 사례

김숙현 약사
경기도 부천시 원미구 부일로571번길 54 우리성모약국

A Case Report of Alleviated Lumbar Pain Associated with Spinal Deformity Using Ortho-Cellular Nutrition Therapy (OCNT)

Pharmacist, Sook-hyun Kim
Woori St. Mary's Pharmacy, 54, Buil-ro 571beon-gil, Wonmi-gu, Bucheon-si, Gyeonggi-do, Republic of Korea

ABSTRACT

Objective: The adult spine is considered normal when it is straight in the coronal plane and maintains an appropriate physiological curvature in the sagittal plane. When spinal alignment deviates beyond a specific threshold or the degree of curvature is altered, a spinal deformity is diagnosed. Spinal deformity may result from various factors, including trauma, aging, and muscle weakness, and can adversely affect activities of daily living and overall quality of life. To manage this condition, a range of therapeutic modalities has been employed, including exercise therapy, bracing, pharmacological treatment, and surgical intervention. However, a definitive curative strategy has yet to be established, and there remains a continuing need for the development and evaluation of novel therapeutic approaches.

Case Report: This report presents the case of a Korean woman in her 70s who experienced lumbar pain associated with thoracic kyphosis. The patient reported persistent lumbar discomfort following a motor vehicle accident, with symptoms further aggravated by age-related degenerative changes and occupational stressors that contributed to the progression of kyphotic deformity. Consequently, Ortho-Cellular Nutrition Therapy (OCNT) was administered, incorporating vitamin C, vitamin E, selenium, anthocyanins, bamboo extract, and horsetail extract. Following the intervention, the patient reported substantial pain relief, increased vitality, and improved quality of life.

Conclusion: Because this report is based on a single patient, its findings are limited in generalizability and cannot be directly applied to all individuals with lumbar pain secondary to spinal deformity. Nevertheless, the case suggests that appropriately tailored OCNT may contribute to pain reduction and improvement in quality of life, which is considered clinically meaningful.

Keywords Ortho-Cellular Nutrition Therapy (OCNT), Lumbar Pain, Spinal Deformity, Antioxidants

Introduction

The adult spine is considered normal when it appears as a straight line along the midline of the body in the coronal plane and, in the sagittal plane, when the cervical and lumbar regions demonstrate anterior curvature, whereas the thoracic and sacral regions exhibit posterior curvature. When spinal alignment or the degree of curvature deviates beyond the normal range, a spinal deformity is typically diagnosed. Representative diagnostic examples include scoliosis, defined by the presence of a lateral curvature of at least 10 degrees accompanied by rotational deformity in the coronal plane, and sagittal deformities in which either the loss or the excessive development of lordosis or kyphosis is classified as abnormal lordosis or kyphosis, respectively.[1]

Spinal alignment influences pain, gait, fall risk, and overall quality of life. However, alignment may change in response to multiple factors, including aging, osteoporotic fractures, and sustained poor posture. These changes can disrupt global musculoskeletal alignment, thereby limiting mobility and reducing physical activity. In severe cases, additional functional impairments, including reduced pulmonary capacity, may occur and warrant careful clinical attention. Accordingly, spinal alignment should be assessed through standardized observation in both standing and supine positions, and the type and severity of deformity should be quantified by measuring relevant spinal angles and curvatures on thoracic spine radiographs.[2]

Spinal deformities may result from diverse etiologies. Representative contributors include physiological changes (e.g., muscle weakness, reduced mobility, and impaired sensory or balance function), soft tissue alterations, disease-related factors (e.g., vertebral fractures and degenerative disc disease), and other extrinsic influences. In older adults, progressive forward

*Correspondence: Sook-hyun Kim
E-mail: truelovetrue70@naver.com
Received Jan 28, 2026; **Revised** Jan 29, 2026; **Accepted** Jan 30, 2026; **Published** Jan 30, 2026
doi: http://dx.doi.org/10.5667/CellMed.spc.153

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

flexion of the lumbar spine and anterior translation of the trunk may occur with aging, even in the absence of prior trauma or surgery. In one study with a 10-year follow-up of older individuals without a history of trauma or surgery, lumbar lordosis and pelvic tilt angle decreased over time.[2,3]

When structural deformities develop in the spine, a broad spectrum of symptoms may ensue. Functional capacity may decline, manifested by reduced gait speed and impaired mobility. Postural imbalance may also shift the body's center of mass laterally, resulting in back or lumbar pain and increasing the risk of fractures and falls. In cases of severe kyphosis, pulmonary function may deteriorate because of mechanical restriction of the thoracic cage. Consistent evidence from multiple studies further indicates that mortality risk increases with fractures and functional impairment.[4]

Accordingly, a range of therapeutic strategies may be applied to alleviate symptoms and improve functional limitations associated with spinal deformity. First, appropriate exercise therapy and physical rehabilitation may be implemented to alleviate pain and strengthen the lumbar musculature. In addition, supportive interventions using braces or taping may help facilitate daily activities. If symptoms are severe or the response to the aforementioned treatments is insufficient, invasive options such as injection therapy or surgical procedures, including vertebroplasty, may also be considered. However, no established method currently exists to completely treat spinal deformity, particularly age-related kyphosis in older adults, and the demand for novel therapeutic and supportive approaches continues to increase.[2]

This case report involves a patient with chronically forward-flexed posture who had persistent lumbar pain associated with spinal curvature. Ortho-Cellular Nutrition Therapy (OCNT) was administered, and the patient subsequently demonstrated clinically meaningful symptom improvement and enhanced quality of life. With the patient's informed consent, this case is presented to document these clinical outcomes.

Case Study

1. Subject
A single case of a patient presenting with lumbar pain secondary to spinal deformity was included.

1) Name: Lee OO (75 years old / F)
2) Diagnosis: Kyphosis
3) Estimated onset: Approximately 1995
4) Treatment period: August 2025 – present
5) Chief complaint: Lumbar pain
6) Past medical history: A motor vehicle accident
7) Social history: Prolonged forward-bent posture due to occupational demands
8) Family history: None
9) Present illness and current medications:
(1) Unspecified intracerebral hemorrhage and brain dysfunction – Atobamiv tablets, Stoga tablets, Buspa tablets, Gliatilin soft capsules, Ginexin-F tablets
(2) Atherosclerotic heart disease – Aspirin 100 mg, Concor tablets 2.5 mg, Canarb tablets 60 mg

2. Methods
The following OCNT was prescribed.

- Quantumplex capsule 101 (twice daily, 2 capsules per dose)

Results

Approximately 6 months after the initiation of OCNT, the patient reported a substantial reduction in low back pain and an improved ability to maintain an upright standing posture for prolonged periods. In addition, clinical observation indicated a marked reduction in the degree of spinal flexion while standing. The patient also gained approximately 3 kg of body weight, exhibited improved facial complexion, and reported increased vitality during physical activity.

Discussion

The patient was a Korean woman in her 70s who typically ambulated with a forward-flexed posture, resulting in lumbar pain and discomfort. A subsequent medical interview confirmed that she had sustained a back injury in a motor vehicle accident approximately 30 years earlier. She reported persistent lumbar discomfort since the accident, and her occupational history indicated prolonged standing and frequent forward bending. Accordingly, OCNT was prescribed to improve her symptoms, with an emphasis on ingredients intended to alleviate lumbar pain and support antioxidant and anti-inflammatory activity, thereby improving her overall physical condition.

The nutrients used to enhance the patient's antioxidant and anti-inflammatory functions included vitamin C, vitamin E, selenium, anthocyanins, and fucoidan. Vitamin C and vitamin E are known to possess strong antioxidant activity among vitamins. Both vitamins have been shown to reduce oxidative stress in the body, thereby helping to lower inflammatory markers. To assess these effects, a meta-analysis was conducted by synthesizing randomized controlled trials that examined oxidative stress and inflammation for each component. The results indicated that vitamin C yielded consistent findings in most trials regarding reductions in oxidative stress and attenuation of inflammation, whereas vitamin E was found to significantly reduce C-reactive protein, an inflammatory marker.[5,6]

Selenium is an essential trace element and mineral that supports antioxidant defenses through its incorporation into selenoproteins. Selenoproteins have been reported to promote antioxidant activity by reducing free radical generation and increasing total antioxidant capacity, and to exert additional anti-inflammatory and antiviral effects.[7] Anthocyanins are flavonoid pigments found in foods such as berries and purple vegetables. They are reported to enhance antioxidant capacity and to improve inflammatory responses by lowering inflammatory markers such as IL-6 and TNF-α.[8] Fucoidan is a polysaccharide derived from brown algae, including sea mustard and kelp, as well as from sea cucumbers, and has been shown in animal and clinical studies to support anti-inflammatory and immunomodulatory functions.[9] Collectively, these components may have contributed to alleviating the patient's lumbar pain by enhancing overall antioxidant activity, reducing inflammation, and modulating immune responses.

Next, natural products were used to support the patient by promoting pain relief and improving bone matrix–related parameters. For this purpose, bamboo extract and horsetail extract powder were selected. Plant-derived medicines have long been widely used in traditional medicine due to their diverse biological activities, and recent research has actively investigated their applications because they have been shown to

have lower toxicity than synthetic pharmaceuticals. Bamboo has been used to alleviate a variety of symptoms involving the gastrointestinal, respiratory, dermatologic, and nervous systems, and it is known to contain components with antioxidant, immunomodulatory, and anti-inflammatory activities, including polyphenols, polysaccharides, and phytosterols. Based on these properties, it has been widely used to relieve joint pain and joint-related symptoms.[10]

Horsetail is a perennial pteridophyte that is reported to support hepatoprotective, diuretic, antibacterial, and anti-inflammatory effects. It has also been traditionally regarded as beneficial for bone and cartilage formation and for strengthening bone, and it is listed in the European Pharmacopoeia. Cell-based and animal studies using horsetail have shown reductions in muscle cell damage and support for myofiber synthesis, along with effects that may help maintain bone strength. In addition, horsetail has been reported to exert anti-inflammatory effects by downregulating the expression of inflammatory mediators such as IL-1β, IL-6, TNF-α, and IFN-γ.[11] Collectively, these natural components may have contributed to improving the patient's low back pain and supporting muscle and bone health.

Following the OCNT described above, the patient reported improvement in low back pain and an overall increase in vitality. She also reported spending more time maintaining an upright posture during daily activities and work, which was associated with an improved quality of life. The patient expressed a desire to continue OCNT, and further clinical changes will be evaluated during ongoing follow-up. However, because this report describes a single case, the findings have limited generalizability, and this OCNT regimen cannot be assumed to be applicable to all patients with low back pain and discomfort secondary to spinal deformity. Nonetheless, it is clinically meaningful that a simple OCNT-based approach was associated with symptom improvement and a significant enhancement in the patient's quality of life. This case is therefore reported with the patient's informed consent.

References

1. Kim HJ, Yang JH, Chang DG, Suk SI, Suh SW, Song KS, et al. Adult Spinal Deformity: Current Concepts and Decision-Making Strategies for Management. Asian Spine J. 2020;14(6):886-97.

2. Katzman WB, Wanek L, Shepherd JA, Sellmeyer DE. Age-related hyperkyphosis: its causes, consequences, and management. J Orthop Sports Phys Ther. 2010;40(6):352-60.

3. Takeda N, Kobayashi T, Atsuta Y, Matsuno T, Shirado O, Minami A. Changes in the sagittal spinal alignment of the elderly without vertebral fractures: a minimum 10-year longitudinal study. J Orthop Sci. 2009;14(6):748-53.

4. Koelé MC, Lems WF, Willems HC. The Clinical Relevance of Hyperkyphosis: A Narrative Review. Front Endocrinol (Lausanne). 2020;11:5.

5. Righi NC, Schuch FB, De Nardi AT, Pippi CM, de Almeida Righi G, Puntel GO, et al. Effects of vitamin C on oxidative stress, inflammation, muscle soreness, and strength following acute exercise: meta-analyses of randomized clinical trials. Eur J Nutr. 2020;59(7):2827-39.

6. Asbaghi O, Sadeghian M, Nazarian B, Sarreshtedari M, Mozaffari-Khosravi H, Maleki V, et al. The effect of vitamin E supplementation on selected inflammatory biomarkers in adults: a systematic review and meta-analysis of randomized clinical trials. Sci Rep. 2020;10(1):17234.

7. Zakeri N, Asbaghi O, Naeini F, Afsharfar M, Mirzadeh E, kasra Naserizadeh S. Selenium supplementation and oxidative stress: A review. PharmaNutrition. 2021;17:100263.

8. Fragoso-Medina JA, López Vaquera SR, Domínguez-Uscanga A, Luna-Vital D, García N. Single anthocyanins effectiveness modulating inflammation markers in obesity: Dosage and matrix composition analysis. Frontiers in Nutrition. 2023;10:1255518.

9. McFadden BA, Vincenty CS, Chandler AJ, Cintineo HP, Lints BS, Mastrofini GF, et al. Effects of fucoidan supplementation on inflammatory and immune response after high-intensity exercise. J Int Soc Sports Nutr. 2023;20(1):2224751.

10. Chongtham N, Indira A, Joshi B, Santosh O. Therapeutic potential of bamboo: Exploring ethnomedicinal traditions, phytochemical composition and immunomodulatory effects with emphasis on anti-inflammatory and prebiotic properties. Advances in Bamboo Science. 2025:100206.

11. Salvadori L, Paiella M, Castiglioni B, Belladonna ML, Manenti T, Ercolani C, et al. Equisetum arvense standardized dried extract hinders age-related osteosarcopenia. Biomed Pharmacother. 2024;174:116517.