

세포교정영양요법(OCNT)을 이용한 소장세균과증식증(SIBO) 개선 사례

이보라

전북특별자치도 전주시 완산구 온고을로 22 토마토종합약국

A Case of Improvement in Small Intestinal Bacterial Overgrowth (SIBO) Using Ortho-Cellular Nutrition Therapy (OCNT)

Bora Lee

Tomato Pharmacy, 22, Ongoeul-ro, Wansan-gu, Jeonju-si, Jeonbuk-do, Republic of Korea

ABSTRACT

Objective: Small intestinal bacterial overgrowth (SIBO) is a syndrome characterized by excessive bacterial proliferation in the small intestine that causes clinical symptoms. In SIBO, the excessive growth of microorganisms alters the intestinal environment, resulting in symptoms such as abdominal bloating, abdominal pain, and diarrhea, and may also lead to more severe manifestations, including steatorrhea, anemia, weight loss, and nutrient deficiencies. However, its pathogenesis has not yet been clearly elucidated. A representative treatment approach involves the use of non-absorbable antibiotics to improve symptoms. However, complete resolution of symptoms is difficult to achieve with this treatment alone. Accordingly, adjunctive therapies aimed at maintaining symptom relief, preventing recurrence, and further improving symptoms have recently attracted attention.

Case Report: This case describes a Korean male patient who developed symptoms of SIBO after undergoing total gastrectomy for gastric cancer. Following surgery, the patient experienced persistent diarrhea and remained underweight, which caused him considerable stress. Ortho-Cellular Nutrition Therapy (OCNT) using polyphenols and organic acids was therefore applied. Following OCNT, his diarrhea improved, his body weight increased, and his overall complexion also improved.

Conclusion: Although this case involved only a single patient, limiting the applicability of the same OCNT approach to all patients with SIBO, the observed improvements in symptoms and quality of life following the provision of appropriate nutrients were considered meaningful.

Keywords Ortho-Cellular Nutrition Therapy (OCNT), Small intestinal bacterial overgrowth, Diarrhea, Organic acids

Introduction

Small intestinal bacterial overgrowth (SIBO) is defined as a clinical syndrome in which bacteria normally found in the large intestine proliferate excessively in the small intestine and cause gastrointestinal symptoms. Under normal conditions, the small intestine maintains a lower microbial density than the large intestine. However, in SIBO, this balance is altered, and microbial overgrowth leads to the production of gases that affect

the intestinal environment and cause gastrointestinal discomfort.¹

The main symptoms of SIBO include abdominal bloating and abdominal pain caused by gas production, as well as alternating occurrences of diarrhea and abdominal pain. However, some patients may be asymptomatic, while severe cases may present with symptoms associated with nutrient deficiencies and malabsorption, including steatorrhea, anemia, and weight loss. Because these symptoms overlap with those of functional gastrointestinal disorders such as irritable bowel syndrome (IBS), additional tests may be used to diagnose SIBO. These include breath tests to detect gases produced in the gastrointestinal tract and quantitative culture of aspirates obtained from the duodenum or jejunum to determine bacterial counts.²

Although the causes of SIBO have not yet been clearly established, several gastrointestinal mechanisms are thought to be involved. Among these, reduced gastric acid activity and

*Correspondence: Bora Lee
E-mail: 2bo2ra2@naver.com

Received Sep 29, 2026; Revised Sep 29, 2026; Accepted Sep 30, 2026; Published Sep 30, 2026

doi: <http://dx.doi.org/10.5667/OCNT.spc.185>

©2026 by Orthocellular Medicine Pharmaceutical Association

This is an open access article under the CC BY-NC license.

(<http://creativecommons.org/licenses/by-nc/3.0/>)

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

impaired migrating motor complex (MMC) function in the small intestine are considered the most plausible mechanisms. Gastric acid serves as a primary defense mechanism by suppressing the proliferation of bacteria entering through the oral cavity. When gastric acid activity is reduced due to gastrectomy, hypochlorhydria, or other conditions, the likelihood of bacteria reaching the small intestine increases. Even if bacteria enter the small intestine, the migrating motor complex (MMC) normally moves intestinal contents distally, thereby helping to remove bacteria and residual contents. However, when this function is impaired and intestinal contents remain in the small intestine for prolonged periods, an environment favorable for bacterial proliferation is created, thereby increasing the likelihood of developing SIBO.³

SIBO can cause discomfort in daily life due to the symptoms themselves, but if the condition persists for a prolonged period, it may also affect intestinal nutrient absorption. The small intestine plays an important role in absorbing approximately 90% of nutrients from digested food, and impairment of this function may lead to weight loss and steatorrhea. In addition, a general decline in physical function, manifested as fatigue, weakness, and numbness, may occur, making symptom improvement and treatment particularly important. A representative treatment approach is antibiotic therapy, including rifaximin. This treatment is primarily used to improve symptoms by controlling intestinal bacteria, and approximately 50% of patients have been reported to experience symptom resolution after two weeks of treatment. However, antibiotic administration may contribute to gastric acid suppression, and antibiotic therapy alone has limitations in achieving complete resolution of SIBO. Therefore, recent attention has focused on adjunctive therapies aimed at maintaining symptom relief, preventing recurrence, and promoting further symptom improvement following initial symptom relief with antibiotics.⁴

This case report describes the use of Ortho-Cellular Nutrition Therapy (OCNT) as an adjunctive therapy in a patient who had experienced prolonged discomfort due to SIBO despite long-term antibiotic treatment. The patient developed SIBO following gastrectomy for gastric cancer, and his symptoms did not improve despite long-term antibiotic therapy. OCNT was therefore prescribed, after which notable improvements in symptoms and body weight were observed. This case is reported with the patient's consent.

Case Study

1. Subject

One patient with SIBO was included in this case report.

- 1) Name: Joo OO (74 years / M)
- 2) Diagnosis: SIBO
- 3) Date of onset: November 2011
- 4) Treatment period: September 2025 – September 2026
- 5) Chief complaints: Abdominal pain, diarrhea, weight loss
- 6) Past medical history: Stage 0–I gastric cancer. Total gastrectomy performed in December 2011
- 7) Social history: One cup of coffee per day. No history of smoking or alcohol consumption
- 8) Family history: Sibling with early-stage gastric cancer
- 9) Present illness and current medications: Loratadine once daily for allergic rhinitis

2. Methods

The following OCNT was prescribed.

- Heartberry Black (1 sachet per dose, 1–3 times daily)

The patient was instructed to take the aforementioned OCNT undiluted with meals, without diluting it in water. In addition, in the absence of diarrhea, he was instructed to discontinue Normix tablets, the antibiotic he had been taking, and was advised to chew his food more thoroughly before swallowing.

Results

After initiation of OCNT, the patient reported a marked decrease in the frequency of diarrhea and has remained free of diarrhea for more than 10 months even after discontinuing Normix tablets. In addition, compared with the period before OCNT, during which there had been little change in body weight, the patient gained approximately 1.6 kg, and an overall improvement in complexion was observed. Changes in the patient-reported severity of discomfort during OCNT and changes in body weight are shown in Fig. 1 and Table 1.

Discussion

The patient in this case was a Korean man in his 70s who experienced frequent diarrhea. He was diagnosed with stage 0–I gastric cancer in 2011, and because the tumor was located in the upper part of the stomach, he underwent total gastrectomy in December of the same year. He reported that he received no further radiotherapy after surgery. Following surgery, SIBO developed as a postoperative complication, and he was prescribed Normix tablets (rifaximin) 200 mg three times daily at the hospital. The patient had taken this medication for

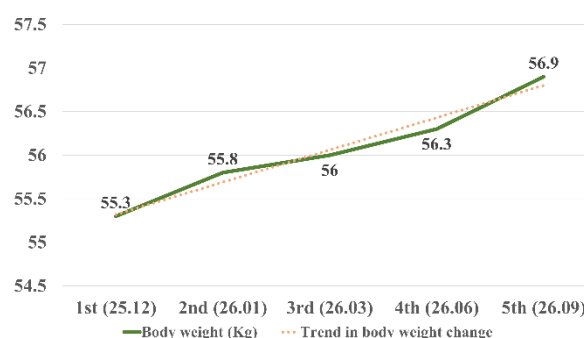


Fig. 1. Changes in the patient's body weight during the OCNT period. An increasing trend in body weight was observed during OCNT.

Table 1. Severity of symptoms experienced by the patient during the course of OCNT. Higher scores indicate greater symptomatic discomfort, with scores ranging from 0 to 5.

Session	1st (25.12)	2nd (26.01)	3rd (26.03)	4th (26.06)	5th (26.09)
Symptom					
Diarrhea	5	3	2	2	1
Complexion	5	3	2	1	1

0: No symptoms and no impact on daily activities; 1: Mild symptoms with minimal impact on daily activities; 2: Noticeable symptoms requiring minor adjustments in daily activities; 3: Symptoms significantly affect daily activities, making some tasks difficult; 4: Major difficulty performing tasks during daily activities; 5: Symptoms severely interfere with daily activities, causing substantial distress

approximately 10 days each month for 10 years. He experienced temporary improvement only while taking the medication, with no overall improvement in symptoms.

The patient reported considerable discomfort due to indigestion, abdominal bloating, abdominal pain, and frequent diarrhea and was underweight, with a height of 168 cm and a weight of approximately 55.3 kg. He also reported that people around him often commented that he looked frail because of his low body weight, which caused him severe stress. Therefore, OCNT was prescribed to alleviate frequent diarrhea and improve his other associated symptoms.

Gastrectomy performed for gastric cancer or other diseases can substantially alter the intestinal environment. Because part or all of the stomach is removed, gastric acid secretion decreases, leading to an increase in gastric pH and impairment of the gastric bactericidal barrier. This may increase the entry of potentially harmful bacteria and other harmful factors from external sources. Consequently, the gut microbiota may be altered, which may contribute to the formation of an intestinal environment associated with increased intestinal inflammation and the development of SIBO.⁵ Therefore, in this OCNT approach, Heartberry Black was used to supply polyphenols and organic acids with the aim of supporting overall physiological function.

Organic acids may help regulate the digestive environment in the stomach and duodenum, promote the secretion of digestive juices and the digestion of food, and improve intestinal motility. In particular, because impaired digestive function is an inevitable consequence of gastrectomy, supporting residual digestive function may play an important role in improving the intestinal environment.

When gastric acid production is impaired due to gastrectomy or other conditions, hypochlorhydria may develop, which can increase susceptibility to bacterial invasion. In such cases, supplementation with acidic substances such as organic acids may help compensate for the reduced bactericidal capacity. Organic acids may also promote the secretion of secretin in the duodenal region. Secretin helps regulate gastric acid secretion and stimulates pancreatic juice secretion, thereby promoting bicarbonate secretion from the pancreas. This may contribute to the regulation of gastrointestinal pH. In addition, organic acids may be associated with the activity of pepsin, a proteolytic enzyme in the body, and may thereby help promote overall protein digestion.^{5,6} Through these mechanisms, this approach was intended to support a favorable intestinal environment for digestion.

In addition, the following mechanisms may have contributed to the improvement in digestive function observed in this case. Cholecystokinin (CCK) is a hormone secreted in the human body. CCK is known to regulate pancreatic and gallbladder function after meals by stimulating the secretion of digestive enzymes from the pancreas and inducing gallbladder contraction, thereby promoting bile secretion. Similar to CCK, organic acids may induce gallbladder contraction and stimulate the secretion of digestive enzymes from the pancreas, thereby exerting a positive effect on overall digestive function.⁷ In addition, when digestive function is impaired, certain nutrients, including proteins, may remain in the intestine for prolonged periods, leading to abnormal fermentation and excessive gas production. Organic acids may help promote digestion and thereby reduce abnormal fermentation.⁸ They may also support overall intestinal motility

by promoting contraction of intestinal smooth muscle and may thereby contribute to improved digestive function.⁹

Polyphenols are known to contribute to overall intestinal health by modulating the functions of the gut microbiota and immune system. These compounds may help regulate both innate and adaptive immunity by activating endogenous defense pathways, increasing the expression of antimicrobial peptides, and enhancing the activity of certain immune cells. Through these effects, polyphenols may help maintain immune tolerance and homeostasis in the intestinal mucosa. In addition, as the concept of prebiotics that support the gut microbiota has recently expanded from conventional carbohydrate-based substances to include non-carbohydrate substances, polyphenols have increasingly been considered within this category. Polyphenols are metabolized by gut microorganisms such as *Bifidobacterium* and *Lactobacillus* and are known to exert beneficial effects on the gut microbial community.¹⁰ Through these mechanisms, this approach was intended to improve the intestinal environment and ultimately help alleviate the patient's symptoms.

In this case, the patient experienced improvement in diarrhea, which had been his most bothersome symptom, following OCNT, along with weight gain, and reported an improvement in quality of life. However, because this case involved only a single patient, there are limitations to generalizing these findings to all patients with SIBO. Nevertheless, this case is considered meaningful because appropriate OCNT was associated with marked improvement in a patient who had experienced prolonged discomfort due to SIBO following total gastrectomy. Accordingly, this case is reported with the patient's consent.

References

1. Pimentel M, Saad RJ, Long MD, Rao SSC. ACG Clinical Guideline: Small Intestinal Bacterial Overgrowth. *Am J Gastroenterol.* 2020;115(2):165-78.
2. Ghoshal UC, Sachdeva S, Ghoshal U, Misra A, Puri AS, Pratap N, et al. Asian-Pacific consensus on small intestinal bacterial overgrowth in gastrointestinal disorders: An initiative of the Indian Neurogastroenterology and Motility Association. *Indian J Gastroenterol.* 2022;41(5):483-507.
3. Bushyhead D, Quigley EMM. Small Intestinal Bacterial Overgrowth-Pathophysiology and Its Implications for Definition and Management. *Gastroenterology.* 2022;163(3):593-607.
4. Sharabi E, Rezaie A. Small intestinal bacterial overgrowth. *Current Infectious Disease Reports.* 2024;26(11):227-33.
5. Horvath A, Bausys A, Sabaliauskaite R, Stratilatovas E, Jarmalaite S, Schuetz B, et al. Distal Gastrectomy with Billroth II Reconstruction is Associated with Oralization of Gut Microbiome and Intestinal Inflammation: A Proof-of-Concept Study. *Ann Surg Oncol.* 2021;28(2):1198-208.
6. Gomez Cifuentes JD, Sparkman J, Graham DY. Management of upper gastrointestinal symptoms in patients with autoimmune gastritis. *Curr Opin Gastroenterol.* 2022;38(6):600-6.

7. Kerstens PJ, Lamers CB, Jansen JB, de Jong AJ, Hessels M, Hafkenschied JC. Physiological plasma concentrations of cholecystokinin stimulate pancreatic enzyme secretion and gallbladder contraction in man. *Life Sci.* 1985;36(6):565-9.
8. Upadhaya SD, Lee KY, Kim IH. Protected organic Acid blends as an alternative to antibiotics in finishing pigs. *Asian-Australas J Anim Sci.* 2014;27(11):1600-7.
9. Shimamura H, Hirota M, Miyazawa M, Kinjo N, Mineshita S. Contractile and extensile effects of red and white wine on rat and Mongolian gerbil gastrointestinal smooth muscle. *J Oleo Sci.* 2010;59(3):143-50.
10. Ferreira C, Vieira P, Figueirinha A, Salgueiro L, Pintado MM, Malva J, et al. Polyphenols as next-generation prebiotics targeting intestinal mucosal tolerance. *Biomed Pharmacother.* 2026;200:119592.