

Patient with Short Bowel Syndrome Discharged Home with Full Oral Intake by Utilizing Medium-Chain Fatty Acids: A Case Report



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Introduction

Short bowel syndrome (SBS) requires the persisting use of nutritional therapy for malabsorption associated with extensive small bowel resection. Medium-chain triglycerides (MCTs) are a favorable energy source because of their rapid digestion and absorption than that of long-chain fatty acids and absorption through the large intestine.

Herein, we describe the case of a patient with SBS who was discharged on a complete oral intake of MCTs and additional foods.

Case Description

Patient: 78-year-old woman
 Chief complaint: Diarrhea/abdominal pain
 Previous medical history: Colorectal cancer surgery

History of the present illness:
 She underwent extensive small bowel resection for intestinal necrosis caused by a thrombus of the superior mesenteric artery.
 Remaining small intestine: Jejunum from the Treitz ligament measuring approximately 110 cm
 Ileocecal part: no residue

Nutrition care plan

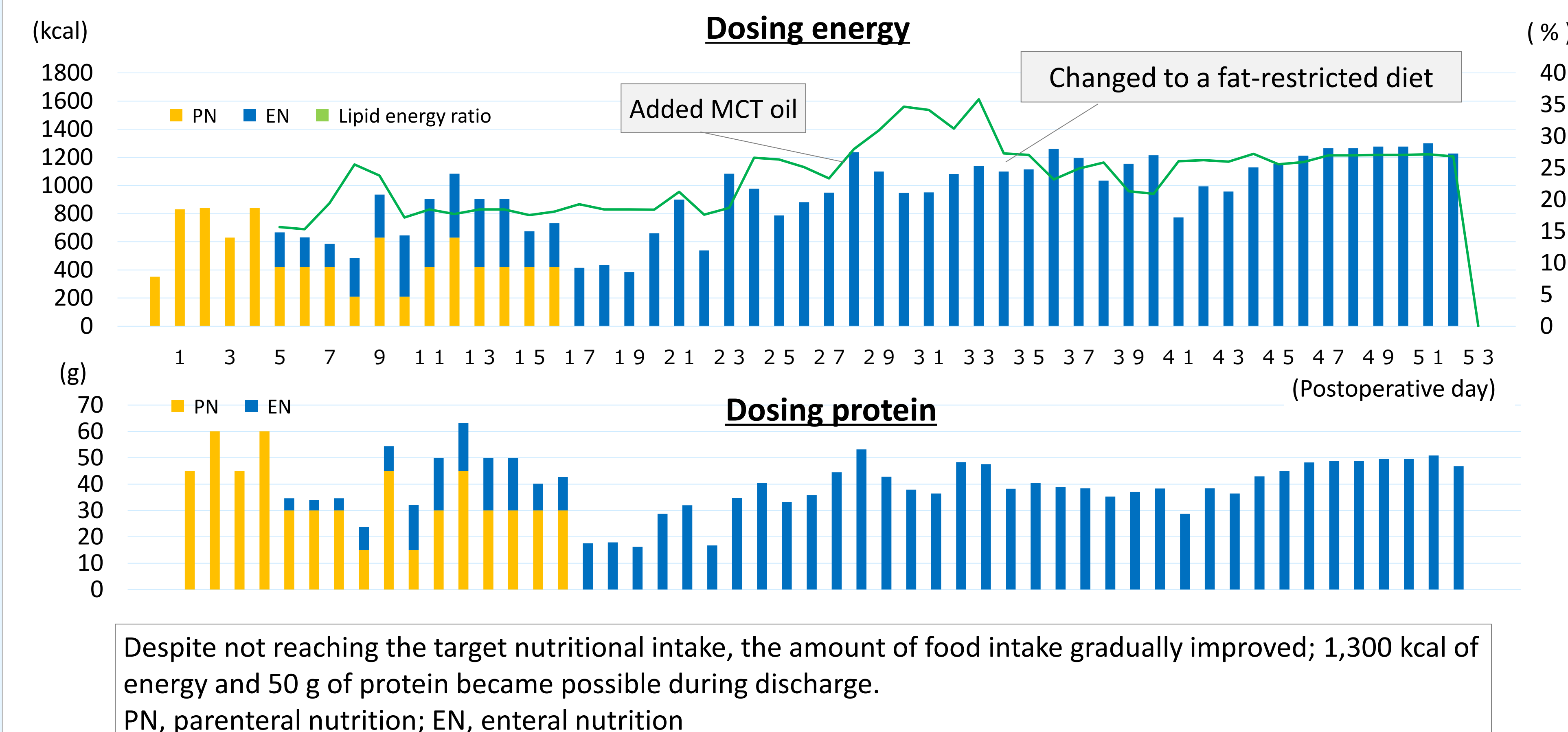
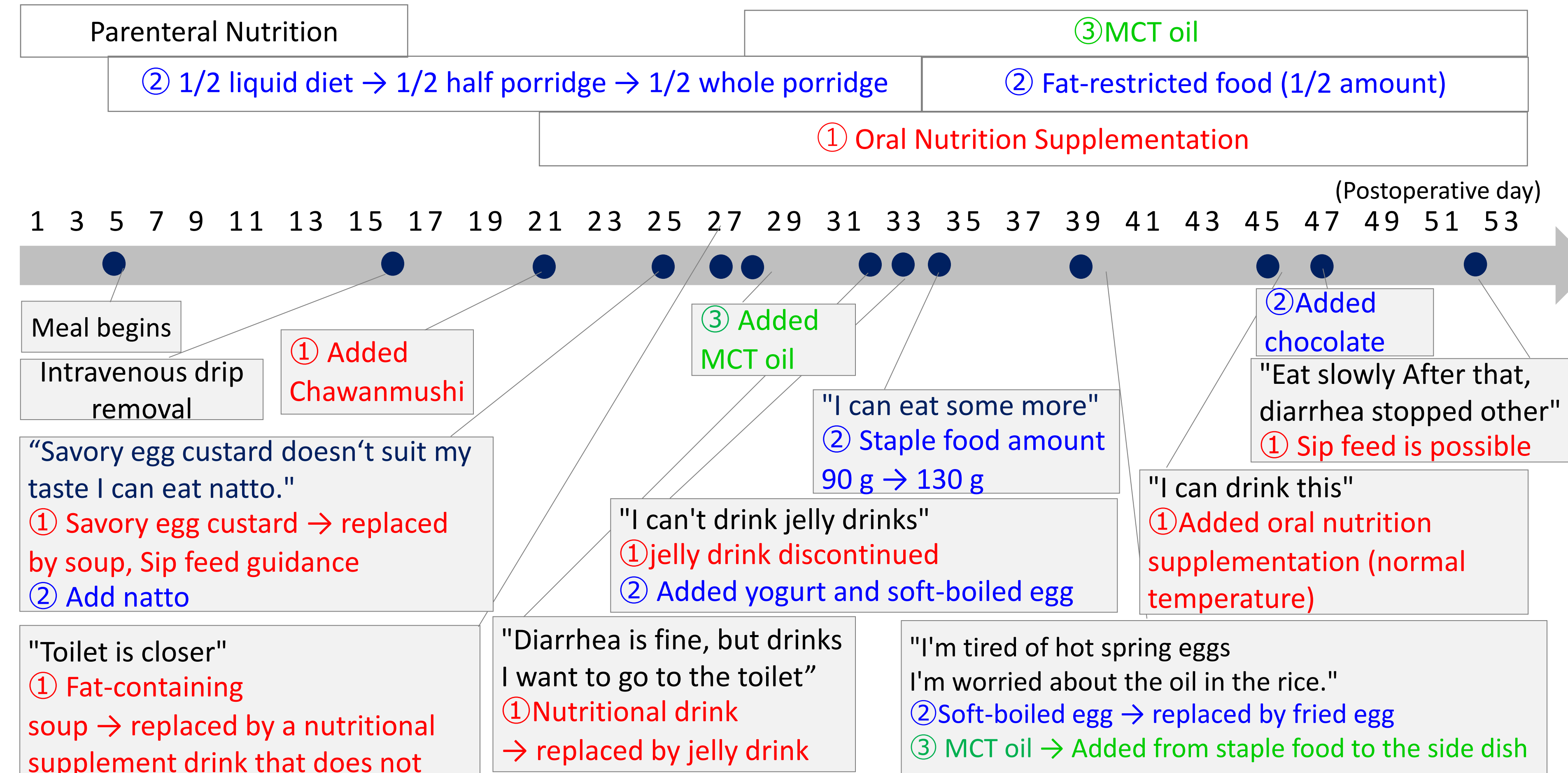
Height: 150 cm
 Weight: 59.0 kg
 Target energy: 1,755 kcal
 Target protein: 70 g

Problems:
 Severe diarrhea
 Decreased nutritional status owing to digestive and malabsorption disorders

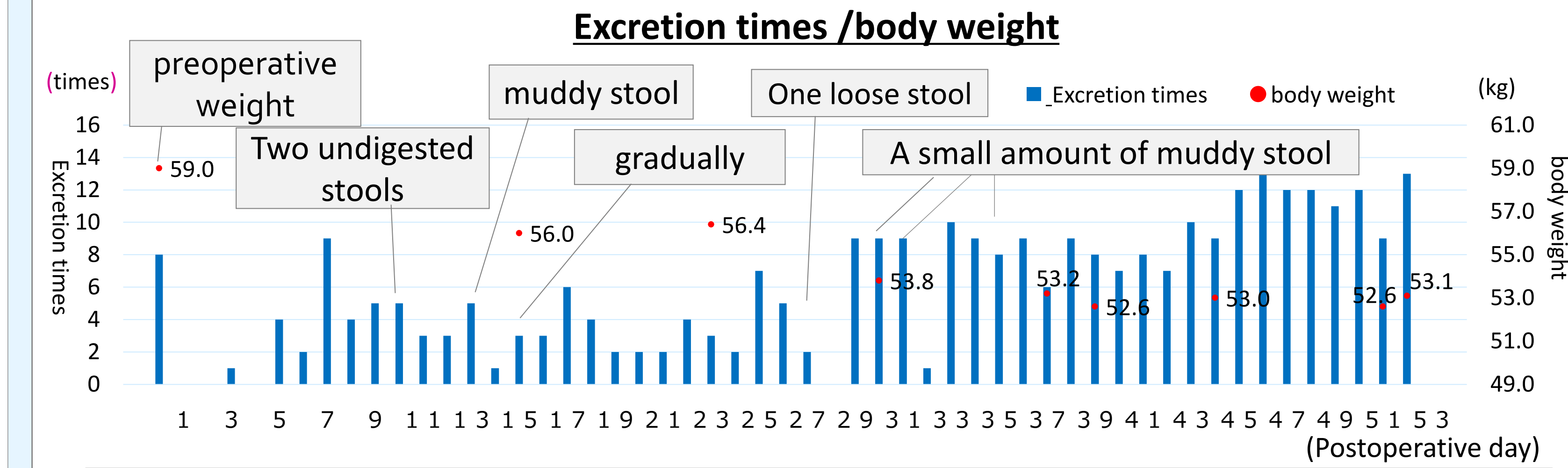
Progress 1

Stages of nutritional therapy

- ① Identifying healthy sip feed and other nutritional supplements
- ② Adding principally familiar foods, such as natto, eggs, and yogurt
- ③ Ensuring efficient energy intake by adding an MCT oil
 (Lipid energy ratio: $\leq 30\%$, comprising 30-40% of the MCT oil-derived ratio)



Progress 2



The frequency of excretion per day increased with the amount of administered nutrients. Regarding the increase in the frequency of defecation, the patient was concerned about defecation; however, the stool quality gradually improved. Subsequently, the stools changed to a soft texture, and the amount of excretion decreased by one.

		Blood collection data/InBody							
Postoperative day		0	1	7	24	38	39	46	54
Alb	(g/dL)	4.3	2.4	1.9	2.2	2.9		2.7	2.7
ChE	(U/L)	266	132	108	158	163			
Cr	(mg/dL)	1.06	1.64	0.88	1.02	1.45		1.21	1.17
CRP	(mg/dL)	0.61	27.61	19.03	3.1	0.8		0.48	0.31
WBC	(/μL)	12,000	12,100	13,400	3,700	4,300		4,000	4,900
TLC	(/μL)	636	1,392	938	1,343	1,514			
Hb	(g/dL)	13.2	8.4	6.5	9.1	9.0		8.0	7.8
Skeletal muscle mass	(kg)						15.6		16.8

Alb 2.4g/dL → 2.7g/dL, skeletal muscle mass 15.6 kg → 16.8 kg, displaying an improvement trend. Alb, albumin; ChE, cholinesterase; Cr, creatinine; CRP, C-reactive protein; WBC, white blood cells; TLC, thin layer chromatography; and Hb, hemoglobin

Discussion

In the nutritional management of SBS, the length of the remaining small intestine, the location of the resected small intestine, and the presence of an ileocecal area are important. In this case, the upper small intestine, a high-absorption site, persisted, and the patient could consume relatively high-quality protein. Therefore, the use of MCTs, which have a high utilization efficiency, increased the protein utilization efficiency. Moreover, MCT oil, an effective energy source, supposedly contributed to the improvement of the nutritional status.