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Successful Nutritional Therapy for Superior Mesenteric Artery Syndrome: A One-Year Follow-Up

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Abstract

Background: Superior Mesenteric Artery (SMA) syndrome is a rare and potentially life-threatening condition caused by compression of the third part of the duodenum between the aorta and the superior mesenteric artery, leading to duodenal obstruction. It typically presents with nonspecific gastrointestinal symptoms such as nausea, vomiting, anorexia, and epigastric pain, and is often associated with severe malnutrition. We present the case of a 19-year-old male with a history of SMA syndrome and severe undernutrition who was successfully managed with structured nutritional therapy and surgical intervention.

CaseReport: The patient was admitted with symptoms of abdominal pain, vomiting, and distension, and had a long-standing history of poor nutritional status. On admission, his weight was 22 kg (BMI 8.9 kg/m²). He had a pre-existing feeding jejunostomy but was not being fed. Nutritional intervention was initiated with Total Parenteral Nutrition (TPN), followed by carefully monitored enteral nutrition via jejunostomy, considering the risk of refeeding syndrome. The patient developed dyselectrolytemia within the initial days, which was managed appropriately. Nutritional support led to gradual weight gain, improved metabolic parameters, and stabilization. He subsequently underwent exploratory laparotomy with duodenojejunostomy. Post-operatively, oral feeds were reintroduced and gradually advanced. At discharge, he weighed 26 kg and was tolerating oral nutrition well. Over a one-year follow-up period, his weight increased to 50 kg and BMI improved to 20.3 kg/m², with calorie intake ranging from 820–2,127 kcal/day and protein intake from 22–100 g/day.

Conclusion: This case highlights the critical role of individualized and closely monitored nutritional therapy in the management and recovery of patients with SMA syndrome. Early nutritional intervention, careful electrolyte monitoring, and gradual progression of feeding play a vital role in achieving positive outcomes, both pre- and post-operatively.

Keywords: Superior Mesenteric Artery Syndrome, Malnutrition, Nutritional Therapy, TPN, Jejunostomy, Duodenojejunostomy, Refeeding Syndrome