



Nutritional Management And Rehabilitation For SMA Thrombosis With High Ileostomy Output. Multidisciplinary Care- Case Report

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Abstract

Background

SMA syndrome is a rare case of upper GI obstruction rapid weight loss can be implicated in this syndrome timely intervention of nutritional support prevents malnutrition and its related problems. SMA is a surgical emergency during treatment most of the patients require nutritional Treatment with multidisciplinary team care. However, achieving the nutritional goal may be not always possible. So our study aimed to investigate the nutritional management of the patient who was operated on for an acute mesenteric artery. It maintains with non-specific syndromes like nausea, vomiting, anorexia, and epigastric pain and it if left untreated can result us significant imbalance and other mortalities associated with malnutrition.

Aim

To improve the survival rate and also to improve the quality of life through a customized medical nutrition therapy plan.

Materials and Methods

For patients who were diagnosed and hospitalized for acute mesenteric ischemia, the Nutritional management of patients was studied in terms of hospital length of stay, mortality rate, and achieving of nutritional goals. A 39-year-old female was admitted with a complaint of abdominal pain for the past 1 week with c/o of vomiting for 3*4 episodes per day for the past 2 days with food particles with a h/o of co-morbidity diabetic for the past 10 years on medication. On admission as evaluated for the present complaint with a CT abdomen which revealed a complaint of splenic superior mesenteric vessel thrombosis

Surgical Management

For which we underwent explanatory laparotomy with ileocecal resection splenectomy ileostomy, suprarenal aortic thrombectomy SMA embolectomy on time admission. The biochemical parameters revealed anemia (HB-7.6) and other parameters were clinically revealed normal.

Dietary Management

POD-1 initiated On TPN@40ml/hr followed by TPN is gradual to 50 ml by POD-5 ileostomy put was moderate which were able to meet around 68% of calorie to 68% of protein respectively. By POD 6 along with TPN enternal nutrition was indicated where she was started with semi elemental feeds@30ml/hr progressively increased by POD11 were able to meet around 70 % of calorie and protein respectively Continuously ileostomy output was increased to 900ml.1500ml respectively. By POD 13 to 39 she was on enteral nutrition and IV amino acids were given to meet the protein requirement. Prevent further management of hypoalbumin throughout POD 12 to 39 average of 2.5 liter of ileostomy output. To prevent electrolyte loss through ileostomy IV fluids were also given to maintain the +ve balance and electrolyte conversion was given simultaneously.

Conclusion

The management of nutritional treatment of acute mesenteric ischemia patients is challenging. Achieving the nutritional goals may not be possible in many patients.

Keywords: Mesenteric ischemia, short bowel syndrome, parenteral nutrition

Introduction

Acute mesenteric ischemia (AMI) is a multidisciplinary emergency, requiring the involvement of several different medical specialties [1,2]. Different forms of AMI are encountered and managed by different medical specialties (e.g., emergency care physicians, vascular surgeons, interventional radiologists, visceral surgeons, gastroenterologists, and intensivists) and different approaches for diagnostics and management exist.

The pathophysiology and clinical presentation of AMI depend on the type of AMI (arterial occlusion, mesenteric venous thrombosis, non-occlusive ischemia (NOMI)). AMI is a multistep time-dependent process involving vascular insufficiency, followed by ischemic damage to the bowel wall starting from the mucosal side and associated with bacterial translocation, and leading without treatment to intestinal necrosis, multiorgan failure and death. Attempting to improve patient care, the World Society of Emergency Surgery and the European Society for Vascular Surgery each released their first guidelines for the management of AMI in 2017 [3,4]. These guidelines disagree regarding the definition of AMI and whether to include or exclude large bowel ischemia but agree that early diagnosis and prompt revascularisation are essential to reduce mortality and bowel resection rates. Consensus exists that contrast-enhanced biphasic CT-Angiography with 1-mm slices is the first-line imaging modality to diagnose AMI [5]. Indeed, several large studies combine to show a sensitivity of 93% and specificity of close to 100%, with positive and negative predictive values of 94% and 100%, respectively [4–7]. There are few recommendations and no consensus regarding the use and timing of antibiotics, therapeutic anticoagulation, anti-aggregation, most appropriate nutrition, and best revascularisation strategies [3,4].

Accounting for less than 0.1% of hospital admissions AMI is a rare medical condition [8]. The incidence of AMI increases exponentially with age and comorbidities [9–11] making it more common in the elderly. Most available studies are retrospective and single-center. The outcome of AMI has not drastically improved over the last decades [12] despite the wide availability of CT scanning and major developments in endovascular revascularisation techniques. Different underlying pathophysiological mechanisms leading to AMI and the lack of sensitive and specific clinical and laboratory parameters to predict the presence of AMI result in delayed diagnosis and hamper improvement in clinical care such as has been seen in acute coronary care. A delay in diagnosis is associated with mortality and severe morbidity [13]. A widespread historical belief that acute mesenteric ischemia is a deadly condition, together with difficulties in prospectively studying this multifaceted and uncommon disease, has further inhibited research and progress in this field. Still, some preliminary evidence suggests that a multidisciplinary approach implemented in a special unit can achieve high survival rates and lower morbidity [2,15]. However, a uniform algorithm for diagnosis and management of AMI is currently not available, and awareness of the clinical entity of AMI among different specialists as well as the availability of specific treatment modalities and special units in different institutions seems to be highly variable. No studies are available to describe these differences in clinical practice and treatment of AMI, and the current survey is a first step in attempting to fill this gap.

Method

A 39-year-old female was admitted with a complaint of abdominal pain for the past 1 week with c/o of vomiting for 3*4 episodes per day for the past 2 days with food particles with a h/o of co-morbidity diabetic for the past 10 years on medication.

On admission as evaluated for the present complaint with CT abdomen which revealed a complaint of splenic superior mesenteric vessel thrombosis for which we underwent explanatory laparotomy with ileocecal resection splenectomy ileostomy, suprarenal aortic thrombectomy SMA eubectomy on time admission. The biochemical parameters revealed anemia (HB-7.6) and other parameters were clinically revealed normal. Postoperatively there was wild elevation in renal function test and liver function test. After surgery, she was revealed with hypo albumin serum albumin (A1-1.58) and anemia(7.7) for which PRBC transfusion was given for correction. IV amino acid and albumin were given hypo albumin correction. Immediate post-operative the ileostomy output was less than one by POD-1 initiated. On TPN@40ml/hr followed by TPN gradually to 50 ml by POD-5 ileostomy put was moderate in which were able to meet around 90% of calorie to 68% of protein respectively. By POD 6 along with TPN enteral nutrition was indicated where she was started with semi-elemental feeds@30ml/hr progressively increased by POD11 and were able to meet around 90 % of calorie and 70 % protein respectively. Continually, ileostomy output was increased to 900ml to 1500ml respectively. Patient got discharged on POD 11 and due to financial reason to

a govement hospital and got readmiited by POD 20 . again she assessed for her nutrition status and the medical nutritional intervention done from POD 20 to 39 she was on enteral nutrition and IV amino acids were given to meet the protein requirement.

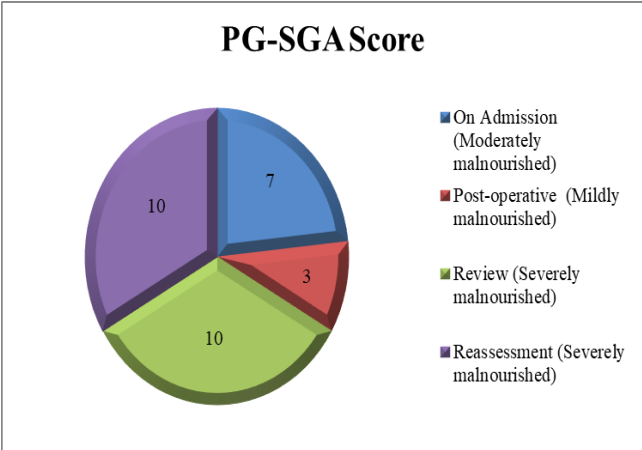


Figure 1: Diagrammatic representation of PG-SGA Score on Assessment categories

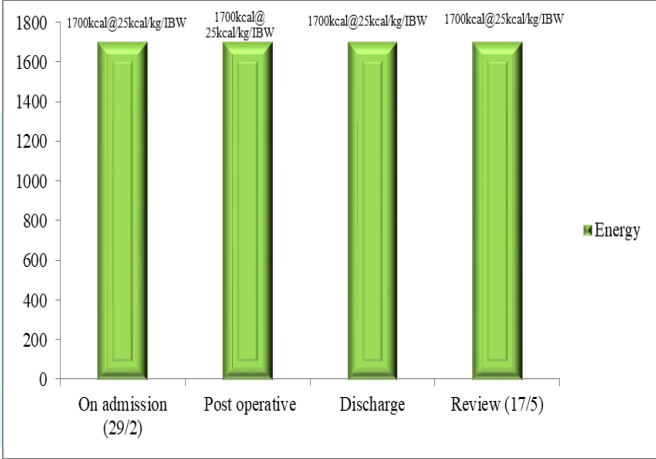


Figure 2: Diagrammatic representation of nutrition requirements (Energy) on Assessment categories

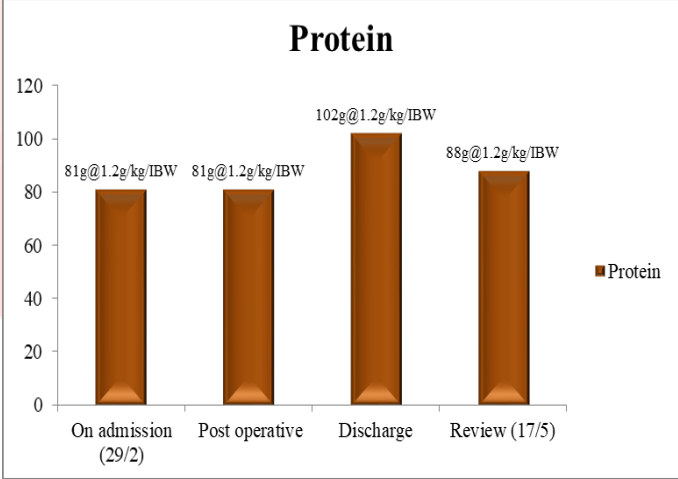


Figure 3: Diagrammatic representation of nutrition requirements (Protein) on Assessment categories

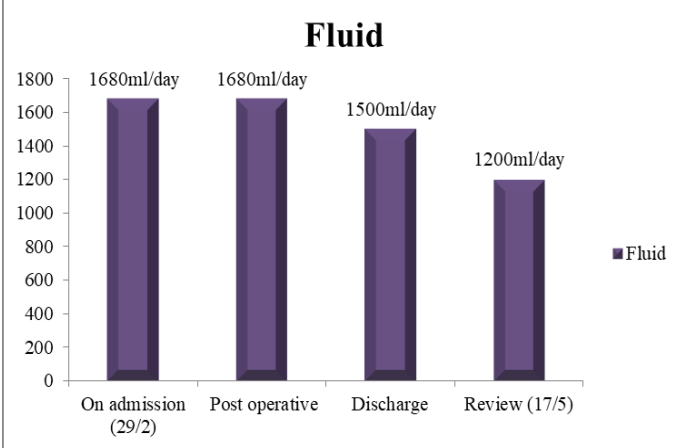


Figure 4: Diagrammatic representation of nutrition requirements (Fluid) on Assessment categories

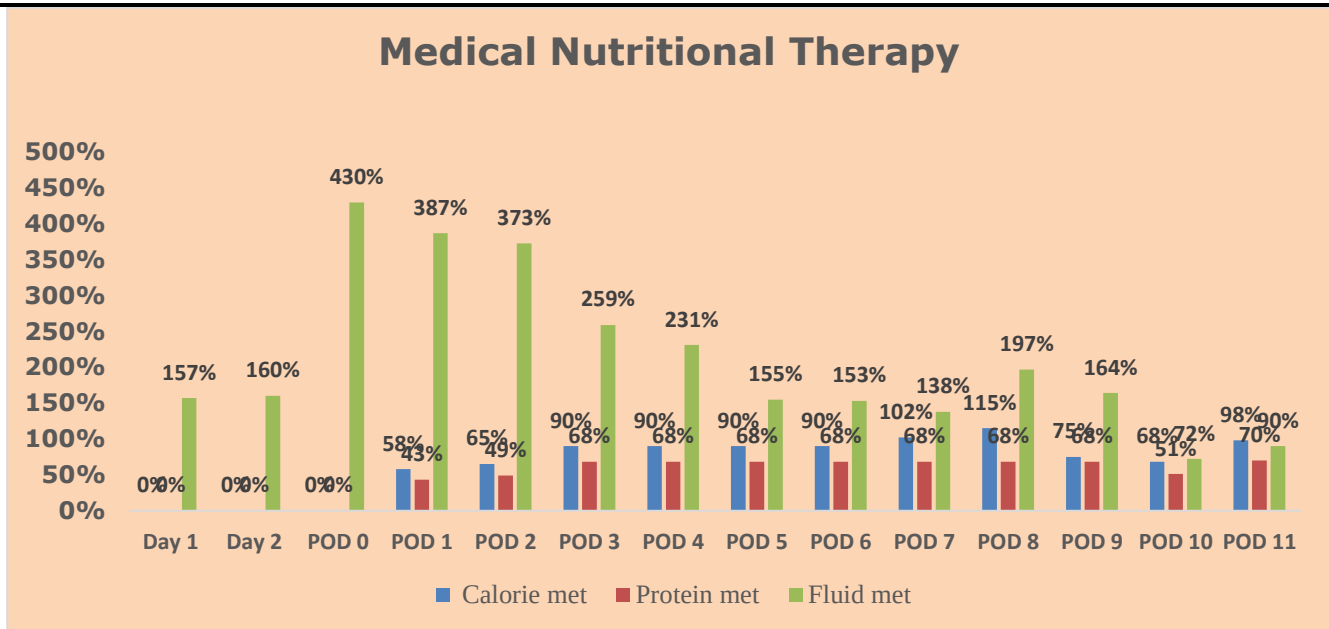


Figure 5: Diagrammatic representation of medical nutrition therapy

Prevent further management of hypoalbumin throughout POD 12 to 39 average of 2.5 liter of ileostomy output. To prevent electrolyte loss through ileostomy IV fluids were also given to maintain the +ve balance and electrolyte conversion was given simultaneously. The next important nutrient is micronutrients were it was replaced by IV multivitamins and minerals daily to prevent further loss of micronutrients.

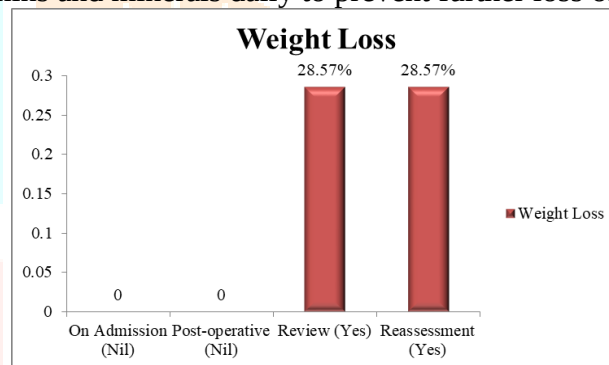


Figure 6: Diagrammatic representation of Weight Loss on Assessment categories

At the time of discharge we were able to meet only 100 % requirements patient was reassessment at the time of discharge where the PGSGA score was 3 which indicated the patient was mildly malnourished. The patient was discharged on 29/3/24 the patient was advised to follow the below to achieve or prevent further weight loss. The patient was discharged with the suggestion to give 200ml every day. It is suggested to deliver 100 mL of electrolyte solution if ileostomy output is observed to avert electrolyte depletion.

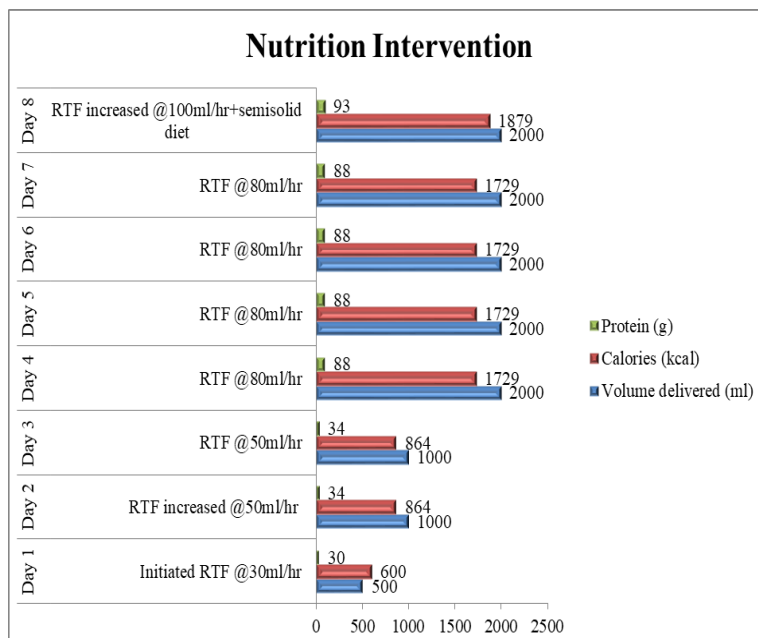


Figure 7: Diagrammatic representation of progression of Nutrition Intervention

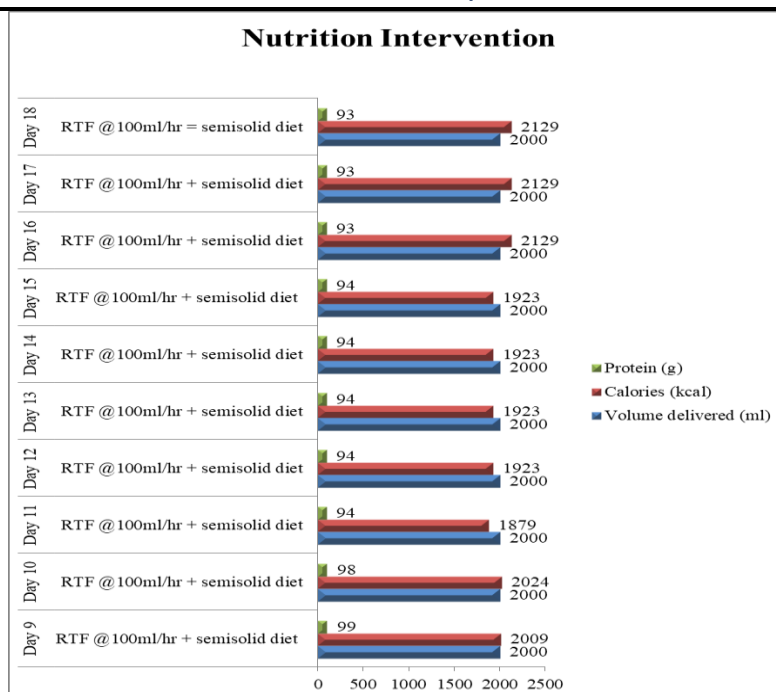


Figure 8: Diagrammatic representation of progression of Nutrition Intervention

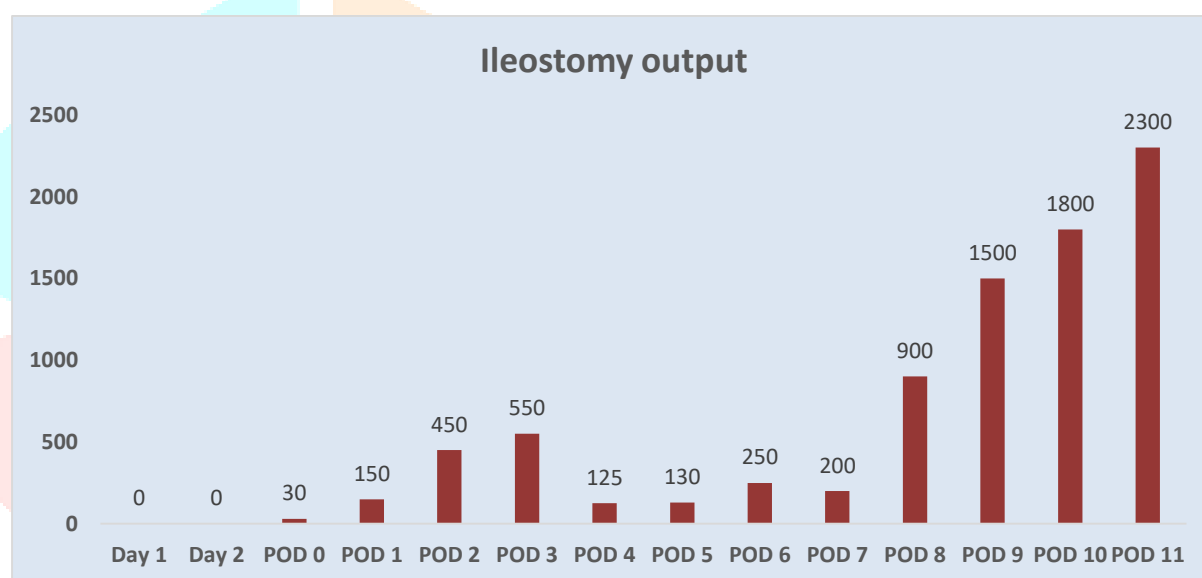


Figure 9 Diagrammatic representation of progression of ileostomy output

DISCUSSION

Acute mesenteric ischemia is a surgical emergency with high mortality rates. To date, no laboratory test can accurately diagnose bowel ischemia or necrosis [5,6]. A high index of suspicion, early diagnosis, and prompt treatment are key factors for improved survival rates. The main causes of AMI include arterial emboli, thrombosis, venous infarction, and non-occlusive ischemia [7]. Contributing factors include cardiac arrhythmia, endocarditis, vasculitis, cardiac failure, malignancies, and hypercoagulability. Most patients have at least one co-morbidity as a risk factor for the development of bowel ischemia. Assessment of bowel viability by laparotomy or laparoscopy is indicated when overt peritoneal irritation signs are present. The main goals of surgery are reestablishment of vascular flow, resection of nonviable intestine, and preserving viable bowel [8]. Unfortunately, most patients in our series required bowel resection due to bowel necrosis and endovascular or open surgical revascularization techniques were not possible. Late admission and delay in diagnosis are the main causes of this condition.

CONCLUSION

The management of acute mesenteric ischemia patients is challenging and nutritional treatment is the critical component of care. Achieving the nutritional goals may not be possible in many patients but individualized and meticulous nutrition treatment may help to improve patient outcomes.

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