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Case report

Severe protein malnutrition in a morbidly obese patient after bariatric surgery

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ABSTRACT

The aim of this study was to describe the clinical course of a morbidly obese patient who underwent Roux-en-Y gastric bypass (RYGB) surgery and, in the late postoperative period, presented the expected loss of weight, but also presented severe protein malnutrition (PM). A patient with morbid obesity, who in March 2012, presented PM (serum albumin = 2.4 g/dL) 2 y after the completion of RYGB surgery (loss of 52.7% of usual body weight). During the hospitalization, the patient received partial volumes of commercial semi-elemental, high-protein, low-fat diet by tube feeding with gastric positioning, associated with an oral low-fat, low-sodium, and bland-consistency diet. The patient presented a temporary clinical improvement, however, outpatient monitoring identified the need for subsequent hospitalizations due to the recurrence of severe hypoalbuminemia (e.g., 1.39 g/dL), anasarca (increase of 15 kg in 79 d), and normocytic and normochromic anemia (e.g., hemoglobin 9.2 g/dL). In July 2013 the RYGB partial reversal technique was performed with a reduction of 100 cm in the Roux-en-Y arm. Seventy days after surgery, the patient was asymptomatic (albumin 3.7 g/dL), however, she presented rapid and progressive recovery of the body weight (increase of 10.3 kg in 60 d, without edema). The effective treatment of morbid obesity is still a major challenge in clinical practice. Restrictive, malabsorptive bariatric techniques are associated with nutritional deficiencies. Severe PM is rarely reported as a late postoperative complication of RYGB, however, due to the serious consequences associated with this, it requires early diagnosis and treatment.

Introduction

Obesity is a chronic, multifactorial disease with an increasing incidence and is difficult control [1]. The primary therapeutic approaches for the treatment of obesity include the adoption of a healthier lifestyle in relation to diet and physical activity, as well as pharmacologic and/or psychological treatments [2]. However, morbidly obese patients, guided toward the primary therapeutic measures, often present unsatisfactory weight loss or the quick recovery of the body weight lost [3].

The progressive increase in the number of morbidly obese individuals, as well as the low adherence to and low efficacy of the usual therapeutic measures, have intensified the indication for surgical treatments that provide a greater and more rapid loss of body weight [3]. Several investigators have shown that patients undergoing bariatric surgery, with a major loss of weight, may concomitantly show improvement

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or remission in the comorbidities associated with obesity [4–6].

The restrictive, malabsorptive surgical technique of Roux-en-Y gastric bypass (RYGB) is currently considered one of the most effective treatments for weight loss [6]. This surgical technique consists of making a small stomach pouch (capacity 20–30 mL) connected to the jejunum, excluding a large part of the stomach and proximal small intestine. The surgical technique intentionally causes a decreased intestinal absorptive surface and reduces the contact of the bolus with the digestive substances [4].

The aim of present study was to report the clinical course of a morbidly obese patient who underwent RYGB surgery and, in the late postoperative period, presented the expected weight loss, which was, however, associated with severe protein malnutrition (PM). The study was approved by the Human Research Ethics Committee of the Federal University of Uberlândia, Minas Gerais, Brazil (Protocol: CEP/UFU 176 417) and the patient signed the Terms of Free Prior Informed Consent.

Case report

The patient were a 47 y old woman, with morbid obesity (usual body weight [BW] 120 kg; body mass index [BMI] 52.9 kg/m^2) [7] and hypertension, who underwent RYGB surgery in March 2010. An oral multivitamin supplementation was indicated during the postoperative period.

Two y after the surgery, the patient was admitted to the Clinical Hospital of the Federal University of Uberlândia for the investigation of lower limb edema and hypoalbuminemia (2.4 g/dL), beginning 4 mo before the hospitalization (Fig. 1).

On admission, the patient reported a considerable loss of body weight (BMI 25.4 kg/m^2, BW 57.0 kg, percentage of weight loss [%WL] 52.7% over the previous 2 y), although the physical examination indicated anasarca. The patient reported that after the RYGB surgery she began performing selective feeding (due to, e.g., an aversion to meat and rice) and induced vomiting (feeling of "fullness"). Renal and hepatic functions were normal. The patient did not show any infection or symptoms of other diseases. After the clinical and laboratory investigation, a diagnosis of PM, was established, as well as normocytic and normochromic anemia (hemoglobin 10 g/dL). The patient also presented marked alopecia.

Immediately after the PM diagnosis, the placement of a gastric feeding tube was performed for the administration of a commercial semi-elemental, high-protein, low-fat diet (SE diet, 60% of the daily energy requirement [DER]), via infusion pump. Concomitantly, the patient received a diet via the oral route (OR; 40% DER) with a bland-consistency, low-sodium, and low-fat content (nutritional planning of 1.5 g protein•kg•d^{-1}). After 27 d of hospitalization, the patient was discharged with advice to return to the outpatient clinic and a prescription for the oral diet supplemented with commercial polymeric formula (360 mL/d).

During attendance at a multidisciplinary outpatient clinic (April to October 2012), the commercial diet supplementation was maintained, and nutritional education was performed with the patient. In general, the patient was encouraged to consume a balanced diet with regular intervals (6 meals/d), with an emphasis on protein foods. Additionally, guidelines were given for proper chewing to grind the food and not drinking liquids immediately before or after, as well as during the meals. The patient was also counseled about the risks of self-induced vomiting (e.g., aspiration). During the outpatient follow-up, the patient was seen by the same psychologist on a weekly basis.

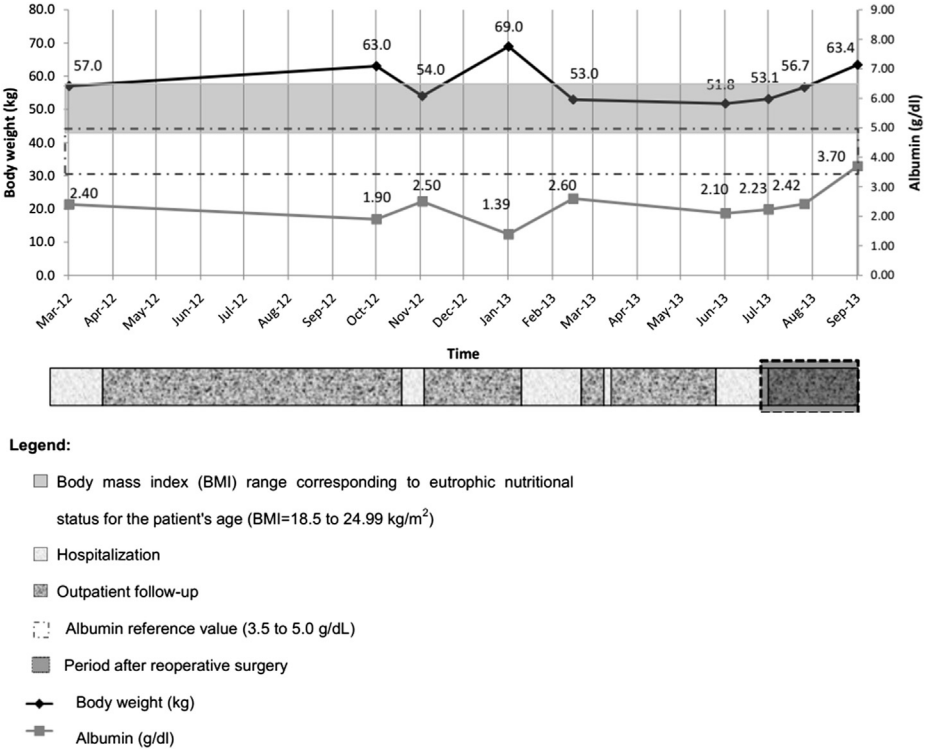

Fig. 1. Relationship of body weight (kg) to serum albumin levels (g/dL), between March 2012 and September 2013, of a morbidly obese patient who had undergone RYGB surgery in March 2010, and partial reversal of RYGB surgery in June 2013.