



## Original research

# The role of a multidisciplinary approach in the choice of the best surgery approach in a super-super-obesity case



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## ABSTRACT

**Introduction:** Obesity is a multifactorial chronic disease caused by a combination of hereditary, metabolic, dietary, cultural, social and psychological factors. Conservative treatments, such as diet and physical exercises, revealed a lack of long-term efficacy in patients with an extremely high BMI (>60 kg/m<sup>2</sup>).

**Methods:** We present a multidisciplinary approach in a patient with an extremely high BMI: a twenty-one years old woman with a BMI 102 kg/m<sup>2</sup> (body weight 313 kg × height 175 cm) disabled to walk with severe depression and a psychological pattern of sweet eater and binge eating disorder. She was also amenorrheic and suffered from metabolic syndrome. The psychological assessment and the social-familial support were defined as priorities. Afterward, physical rehabilitation, behavior therapy, hypocaloric diet followed by intragastric balloon were planned as preoperative treatment. Finally a surgical program was scheduled: Sleeve Gastrectomy as first step of Biliopancreatic Diversion with Duodenal Switch.

**Results:** Sixteenth months after the Sleeve Gastrectomy the weight was 130 kg (Excess Weight Loss = 74%) with a resumption of the menstrual cycle and a normalization of the metabolic syndrome. **Conclusion:** Due to the results obtained with both surgery and an excellent psychological supporting network we decided not to perform the expected Biliopancreatic Diversion with Duodenal Switch. The timing of bariatric surgery in superobesity patients is a milestone, but the cooperation among the specialists is essential for the choice of the best successful surgery. The multidisciplinary team should point to a comprehensive tailored management, considering motivation, compliance and adherence to a long-term follow-up as the keys for surgical success.

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## 1. Introduction

Obesity is a multifactorial chronic disease caused by a combination of hereditary, metabolic, dietary, cultural, social and psychological factors. Conservative treatments, such as diet and physical exercises, revealed a long-term lack of efficacy in patients with an extremely high Body Mass Index (BMI) > 60 kg/m<sup>2</sup> [1]. In this framework bariatric surgery has become very popular during

the last decade, and it is currently considered as the most effective option. A multidisciplinary approach has been suggested to assess pre-operative comorbidities, patient motivation and postoperative management. The major national and international bariatric surgical societies (Società Italiana di Chirurgia dell'Obesità – SICOB, American Society for Metabolic and Bariatric Surgery – ASMBS) recommend as mandatory a multidisciplinary management of this disease in the centers of excellence. In addition the psychological and/or psychiatric assessment is strongly recommended by national guidelines. However, the impact, the modality, the timing and the cost effectiveness of the physiological support are still controversial. In this paper a step by step, multidisciplinary

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approach is presented for the successful treatment of a super-super obesity case: a 21 years old woman with a BMI of 102 kg/m<sup>2</sup> (body weight 313 kg × height 175 cm).

## 2. Materials and methods

The patient came to our attention in 2010, when she was twenty one. Her body BMI was 102 kg/m<sup>2</sup> with uncompensated type II diabetes (glycemia 210 mg/dL, HbA1c 7.9%), hypertension, severe depression and amenorrhea as severe co-morbidities. The psychological assessment showed a sweet eater and binge eating disorder (BED) (3–4 episodes per week). The family background of a low socioeconomic status was immediately considered as the major limiting factor for the treatment planning. Born in prison, she spent there the first three years of life. Then she moved with her older half-sister and five brothers to an orphanage. At sixteen, her mother got out of jail but after few months died for an intestinal ischemia. The patient became emotionally very unstable, being victim of sexual abuses by her father and uncle. In that period she developed a BED concomitant with a loss of self-esteem. She was also rejected at school, so the social stigma crushed her too. Then she started to drink and smoke cigarettes and cannabis. The history seemed to change when her father went to jail again. At nineteen she found a job as geriatric operator and find emotional stability thanks to a loving relationship. After a while, her father came back home and she was becoming self-injurer. At that time, she became aware of her problems, realized to be obese (160 kg) and looked for a dietitian who prescribed amphetamines that had the consequence to make her anxious and afraid. She continued to eat and increased her body weight, while the father was stealing her disability social salary. She became absolutely confused. Locked in bed and unable to walk she finally realized the need to ask someone from outside the family for help.

The psychological assessment and the social-familial support were defined as priorities. A supporting network was then created involving the primary care physician (PCP), as the first player, a social worker and a psychologist. In the first three months the patient met PCP three times a week, the social worker and psychologist one time a week.

Afterward, physical rehabilitation, behavior therapy, hypocaloric diet followed by intragastric balloon were planned as pre-operative treatment. Finally we decided to perform a Sleeve Gastrectomy as the first step of Biliopancreatic Diversion with Duodenal Switch. The patient still meets PCP once a week, the social worker and the psychologist once every three months. Our step-by-step protocol provided an assessment of the comorbidities and disability in relation to weight loss, reported as Excess Weight Loss (EWL%) [1].

## 3. Results

- May 2010 – BMI of 102 kg/m<sup>2</sup>: admission to an Endocrinology Unit for six weeks. The primary end-point was the control of diabetes and hypertension to increase her self-esteem and motivation and to ensure a psychological support network after hospital discharge. At discharge, the weight loss was of 30 kg (EWL% 12) with resumption to walk and BED stopped. An intensive follow-up was scheduled involving the social worker and the psychologist with weekly meetings. After three months a new admission was necessary for two weeks. The goal was to evaluate the compliance to therapy and the diligence in the weight loss program (diet plus fluoxetine). Cycles of physiotherapy, individual sessions of psychotherapy and access to group psychotherapy were performed. In December 2010, the weight loss was of 8 kg (EWL% 15), but there was still

amenorrhea. A social life started again and her self-esteem was higher; as a consequence, we decided to start a ketogenic enteral nutrition program by four cycles of enteral nutrition (every cycle lasts 10 days with a break of 15 days). The aim of the second step was to reduce the ASA risk and to reinforce self-esteem and motivation. The goals achieved were a weight loss of 52 kg (EWL% 36), the ability of the patient to travel alone and for long distances with different means of transport.

- February 2011 – BMI of 73 kg/m<sup>2</sup>: admission to a Rehabilitation Unit for six weeks to continue physiotherapy and an intensive physical exercise program associated with a low-calories diet. Amenorrhea was still present and a progestin therapy was started with the resumption of menstrual cycle: another great goal on the road of her self-esteem and body image. After discharge, a weight loss of 10 kg (EWL% 40) was obtained.
- April 2011 – BMI of 70 kg/m<sup>2</sup>: new admission for three months taking physical and psychological rehabilitation. Medical therapy for diabetes mellitus and hypertension was continued. At discharge the weight loss was of 20 kg (EWL% 48): ready to surgery. A sequential program was scheduled: Intra-gastric balloon (BIB®) followed by laparoscopic Sleeve Gastrectomy and after twelve months Biliopancreatic Diversion with Duodenal Switch.
- November 2011 – BIB® placement for six months with a weight loss of 15 kg (EWL% 54), arterial pressure values normalization and an improved eating behavior.
- July 2012 – BMI of 58 kg/m<sup>2</sup> obtained after removal of the BIB®. A laparoscopic Sleeve Gastrectomy was then performed. At three months of follow-up the body weight was of 155 kg (EWL% 64) with a normalization of glycemia and suspension of metformin (BMI 50 kg/m<sup>2</sup>). Follow-up controls showed a progressive weight loss: at six months weight was 144 kg (EWL% 68), at nine months 138 kg (EWL% 71) and at twelve months was 130 kg (EWL% 74) with an interruption of progestin therapy.
- October 2013 the weight was of 126 kg/m<sup>2</sup> (EWL% 75). The patient currently lives with her boyfriend and continues to work. She still meets the psychologist once every three months and PCP if necessary. Due to the results obtained with both the surgery and an excellent psychological supporting network we decided a close watch and see and not to perform the expected Biliopancreatic Diversion with Duodenal Switch.

## 4. Discussion

Currently, the only effective long-term therapy for morbid obesity is bariatric surgery. However, the patients with an extremely high BMI (>60 kg/m<sup>2</sup>) present a challenging treatment dilemma for the bariatric surgeon and the anesthesiologist; the severe obesity might be responsible for anesthetic troubles during intubation and mechanical ventilation [2].

Unquestionably this kind of patients would greatly benefit from a bariatric surgical procedure. Surgical treatment of obesity has been shown in fact to be the only consistent option for sustained, reproducible weight loss, and many comorbidities associated with severe obesity are dramatically improved or cured after bariatric surgery. On the other hand, these comorbidities effectively change the obese habitus rendering the surgery extremely risky.

Moreover, hepatic steatosis, a thickened transverse mesocolon and a widespread visceral fat have technical implications that may complicate the surgical procedure. Adding to this dilemma is a series of reports claiming a higher rate of postoperative complications in the super-super-obese patient population after bariatric surgery [3,4]. Pre-operative weight loss is probably the most important method for reducing surgical risk in super-obese

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