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LAPAROSCOPIC SLEEVE GASTRECTOMY FOR MORBID OBESITY - CASE REPORTTihomir Grgić, MD, Tomislav Kuliš, MD, Dinko Vidović, MD, Dora Anzulović, MD,
Miroslav Bekavac - Bešlin, MD, PhD**ABSTRACT**

Morbid obesity is a major epidemiological and economic problem around the world. In Croatia 25% of men and 24% of women are obese, with BMI higher than 30 kg/m².

Since the introduction of minimally invasive approaches in bariatric surgery, sleeve gastrectomy is performed laparoscopically. Laparoscopic sleeve gastrectomy is often performed as the first step in the treatment of morbid obesity. In super-obese individuals this procedure is often combined with biliopancreatic diversion.

A 47-year-old female patient with BMI of 65 kg/m² was hospitalized in our department. As associated morbidities she had arterial hypertension, depression and anaemia. Before the hospitalization the patient attempted many times to lose weight with conservative methods, but with no success. Because of her super-obesity we decided to perform laparoscopic sleeve gastrectomy. The patient was released eight days after the surgery. Her BMI was 59 kg/m² and EWL was 11.9 %.

Two months after the surgery the patient has BMI 57 kg/m² and EWL at 16.5 %.

Keywords: bariatric surgery, body mass index, morbid obesity, laparoscopic sleeve gastrectomy, biliopancreatic diversion

SAŽETAK

Diljem svijeta patološka je pretilost značajan epidemiološki i ekonomski problem. 25% muškaraca i 24% žena u Hrvatskoj pretili su, s indeksom tjelesne mase > 30 kg/m². S razvojem laparoskopske kirurgije od nedavno se i resekcija želuca u obliku rukava izvodi laparoskopski, a u tijeku su i brojna istraživanja i objavljeni su članci o učinkovitosti te metode. Često se izvodi kao prvi korak u liječenju patološke pretilosti, u kombinaciji s biliopankreasnom diverzijom.

Na našem odjelu liječili smo pacijenticu s indeksom tjelesne mase 65 kg / m² te pridruženim bolestima. Prije hospitalizacije bolesnica je neuspješno konzervativnim metodama pokušala smanjiti prekomjernu tjelesnu težinu. Zbog njezina visoka indeksa tjelesne mase odlučili smo se prvi puta u našoj ustanovi učiniti laparoskopsku resekciju želuca u obliku rukava. Bolesnicu smo otpustili kući sa BMI 59 kg / m² i EWL 11.9%. Dva mjeseca nakon operacije bolesnica je imala BMI 57 kg / m² i EWL 16.5 %.

Cljučne riječi: barijatrijska kirurgija, indeks tjelesne mase, morbidna pretilost, laparoskopska resekcija u obliku rukava, biliopankreatično skretanje

INTRODUCTION

Obesity has become one of the most widespread health problems in the world and is responsible for causing many diseases, such as diabetes and high blood pressure. In 2004 the prevalence of obesity in the US is estimated at 32 per cent of the adult population, that is over 60 million people (1). In Croatia the prevalence of obesity in 2005 was 25% of men and 24% of women (2).

We can divide bariatric procedures into: restrictive, malabsorptive, combined, non-restrictive and non-malabsorptive (Table 1).

Surgeons who are experienced in bariatrics often prefer a less invasive first stage operation, like sleeve gastrectomy (SG), for super-obese patients (3).

Table 1. Bariatric procedures

Restrictive procedures	- adjustable gastric banding - vertical banded gastroplasty - sleeve gastrectomy
Malabsorptive procedures	- biliopancreatic diversion and duodenal switch - long limb Roux-en-Y gastric bypass
Combined procedures	- Roux-en-Y gastric bypass - sleeve gastrectomy with duodenal switch - sleeve gastrectomy with BPD and antroileal anastomosis (9)
Non-restrictive - non-malabsorptive procedures	- gastric pacing

CASE REPORT

Here we present a case of a 47-year-old woman with BMI of 65 kg/m², (the patient is 160 cm in height and 164 kg in weight). She is suffering from arterial hypertension, depression and anaemia without other comorbidities. She tried to lose weight with conservative methods several times, but with no success.

Before the surgery she was examined by an endocrinologist and a psychologist. A complete preoperative assessment was carried out (ECG, full blood count, blood clotting tests, blood glucose, chest X-ray, liver and kidney function tests).

We decided to perform laparoscopic sleeve gastrectomy because of her super-obesity (Figure 1) (4). This was the first time that this procedure was performed in our hospital.

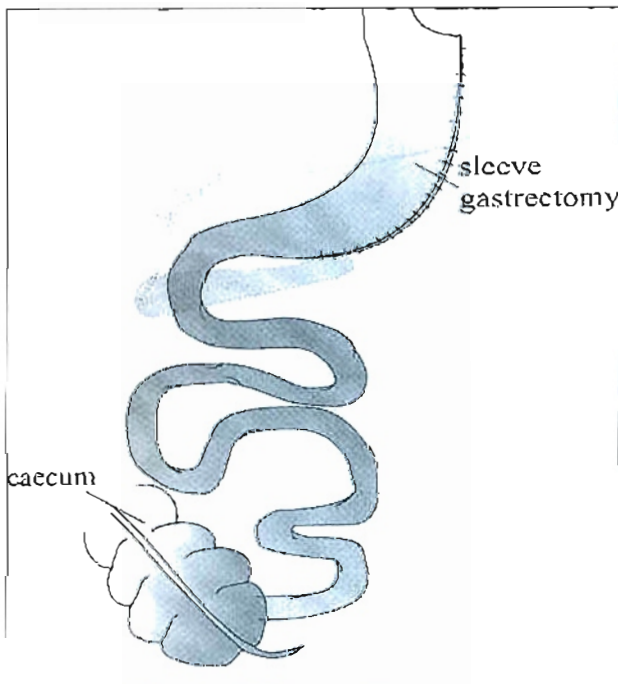


Figure 1. Sleeve gastrectomy

OPERATIVE TECHNIQUE AND FOLLOW-UP

After introducing general endotracheal anaesthesia we placed a Foley catheter, and then we scrubbed and draped the abdomen. A Veress needle was placed in the left subcostal region to insufflate gas (CO²) in the abdomen in order to reach an intraabdominal pressure of 14 mm Hg. Using a 12-mm Visa port we placed an optical instrument into the abdomen, in medial line, about five centimetres above the umbilicus.

We placed the other two 12-mm troacars (for the liver retractor and the endo GIA stapler) and two working 5-mm troacars. After greater curvature was cleared of vessels (5) (7 cm proximal from pylorus to gastroesophageal junction) the stomach was resected by serial

application with the endo GIA stapler using a nasogastric tube as a stent.

The cut line was secured with continuous endosuturing. With the application of methylene blue we determined that the cut line was intact (5).

On the second postoperative day the patient underwent an upper gastrointestinal X-ray series with water soluble contrast (gastrographin), which showed no signs of leakage and obstruction. The nasogastric tube was removed and a liquid diet was introduced.

There were no complications during the postoperative period, and the patient was released on the eighth day after the surgery. Her BMI was 59 kg / m² (151 kg) and EWL was at 11.9%.

Two months after the surgery the patient had BMI of 57 kg/ m² (146 kg) and EWL at 16.5%.

DISCUSSION

Indications for the surgical treatment of morbid obesity are BMI higher than 40 kg/ m² or BMI higher than 35 kg/ m² with comorbidities (6).

For the treatment of super-obese patients (BMI > 50 kg/ m²) (table 2) we can perform restrictive, malabsorptive or combined procedures.

Table 2. Classification of adults according to BMI

BMI value	Considered
< 18.5	Underweight
18.5 - 25	Normal weight
25.0-30	Overweight
>30	Obese
>35	Severe Obesity
>40	Morbid Obesity
>50	Super obese

Sleeve gastrectomy is a restrictive procedure, which reduces stomach capacity by 70 - 90% (7). It can be a stand-alone procedure or it can be combined with biliopancreatic diversion and the duodenal switch (8). In super-obese patients with high operative risk LSG is the first step operation and the bridge to other bariatric procedures (biliopancreatic diversion, duodenal switch or antroileal anastomosis) (8, 9).

We used to perform laparoscopic adjustable gastric banding (LAGB) (9 - 15) as a restrictive procedure, and this is our first case of laparoscopic sleeve gastrectomy (LSG) as a stand-alone procedure. It has also been proved that serum levels of ghrelin (peptide hunger hormone, which is produced in stomach fundus) are significantly decreased after LSG (16, 17). This contributes to reducing hunger in obese patients and decreases body weight (18).

After SG expected decrease of BMI in one year time is 25 kg/m² and of EWL 57%. After 3 years, expected BMI decrease is 27.5 kg/m² and EWL decrease is 66% (19). In case we are not given the expected decrease of BMI, body weight and EWL after LSG, we can perform biliopancreatic diversion with duodenal switch.

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