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Laparoscopic adjustable gastric banding: efficacy and consequences over a 13-year period

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Laparoscopy;
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Abstract

BACKGROUND: Laparoscopic adjustable gastric banding (LAGB) is a common bariatric surgery. Although it is a safe and effective method of weight reduction in short term, it may result in some problems in long term. The purpose of this study was to investigate the consequences of LAGB in long term among morbid obese patients.

METHODS: In this prospective study, 80 patients underwent LAGB using pars flaccida technique from 2001 to 2006. Long-term postoperative consequences and complications of these patients were recorded.

RESULTS: The preoperative mean values of weight and body mass index were 125.5 ± 22.5 kg and 44.5 ± 6.5 kg/m^2, respectively. Over the 13-year follow-up period, 56 patients (84.8%) experienced at least one complication. The most common complications were band erosion (20 patients) and weight regains (13 patients). Fifty-one patients (78.5%) required reoperation. The band of 48 patients (72.7%) was removed; of these, twenty patients (30.3%) underwent other bariatric surgeries. Percent of excess weight loss was 47.1% ± 30.1%, and the success rate was 48.7%.

CONCLUSIONS: LAGB is a successful method with low complications in short term; however, over long term, it results in various complications.

Obesity is a public health problem that endangers the health of obese patients. It has direct relation with noncommunicable diseases. This problem has increased progressively, and the prevalence of obesity doubled from 1980 to 2008 in the world. In 2008, globally 2.0 billion adults, aged 20 years and older, were considered overweight and obese who are expected to reach 3.0 billion in 2015.[1,2] This increased trend has also been observed among Iranian population.[3] A recent study reported that the estimated total prevalence of obesity in 1999 to 2001 were 15.8% and 31.3% in Iranian men and women, respectively. The values have been increased to 21.1% in men and 38.6% in women in 2006 to 2008.[4]

Bariatric surgery is recognized as the main effective treatment for morbid obesity, and long-term weight loss and comorbidities reduction are its principal benefits.[5] Globally, one of the most common bariatric surgical procedures is laparoscopic adjustable gastric banding (LAGB).[6] This method is

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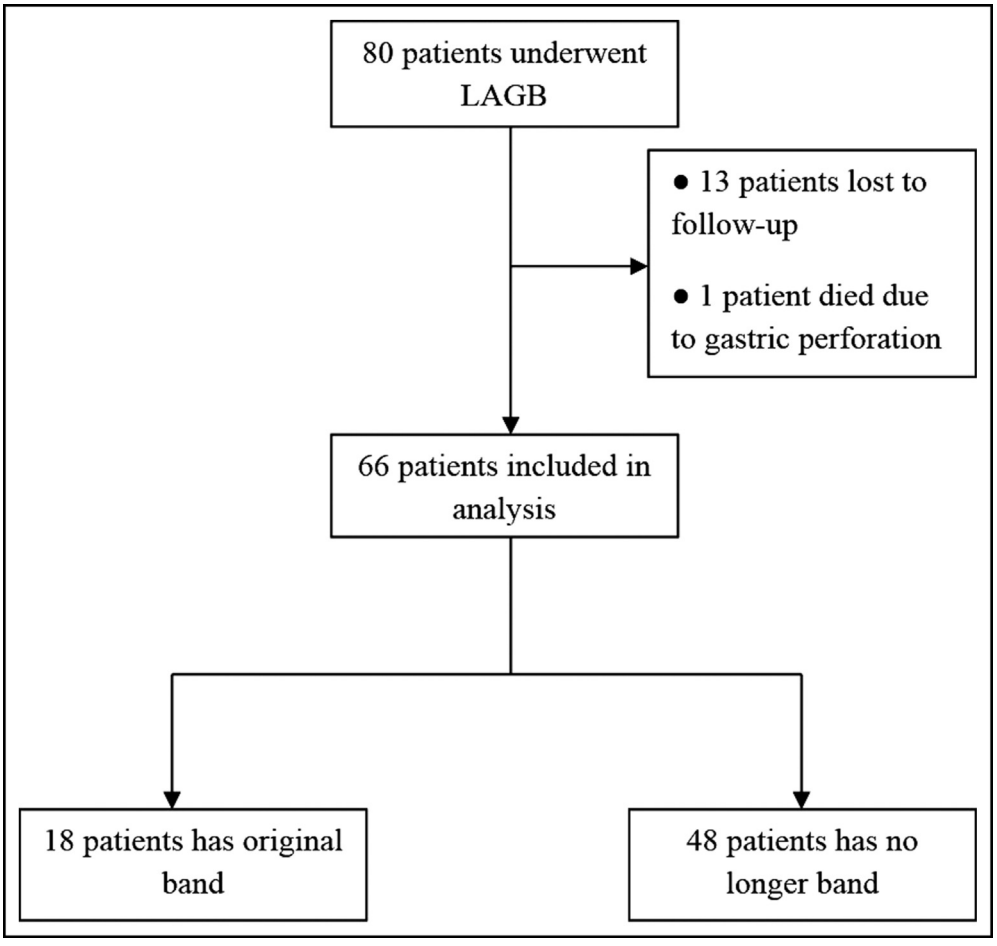

Figure 1 Flow chart of study.

relatively safe and effective on treatment of obesity and comorbidities over the short term and midterm.[7–9] For instance, a meta-analysis which was conducted by Buchwald et al[10] indicated that LAGB results in 45.5% weight excess loss and comorbidity resolution of the patients: type 2 diabetes in 80.2%, hyperlipidemia in 71%, hypertension in 71.5%, and sleep apnea in 55.6% of patients.

However, safety and efficiency of LAGB in long term (≥ 5 years) is inconsistent.[6,11,12] The main complications of LAGB include band erosion, slippage, port infection, pouch and esophageal dilatation, and weight loss failure that usually end up in band removal.[13,14] In Iran, LAGB is also a common bariatric surgery that can result in various and some different outcomes. Therefore, this study aimed to investigate long-term consequences of LAGB in terms of weight loss, complications, and reoperations in Iranian morbid obese patients.

Methods

Subjects

In this prospective study, 80 patients including 20 men and 60 women, between 20 and 50 years of age, were operated from April 2001 to July 2006. Indications for the surgeries were based on the National Institute of Health criteria; body mass index (BMI) more than 40 kg/m^2 or between 35 and 40 kg/m^2 with 1 comorbidity. The patients were informed regarding the benefits and complications of the surgical procedure. All the operations were performed by 1 surgeon (K.T.) at the Milad Hospital, Tehran.

The study protocol was approved by the Ethics Committee of Tehran University of Medical Sciences, and informed consent was obtained from all participants.

Surgical technique

The band that was used for all the patients in this study was MIDBAND (Medical Innovation Développement, Limonest, France) that is a low-pressure silicon band with smooth inner layer and can be implanted with or without suture. The operation was done in the reverse Trendelenburg position. The band was inserted via laparoscope through 5 ports in the upper abdomen: 3 ports, 5 mm; 1 port, 10 mm; and 1 port, 12 mm. The lesser sac was entered using pars flaccida approach. The band was placed around the stomach close to the gastro esophageal junction creating a small pouch with approximately 25 mL volume. The fundus was sutured to left