



ENDOSCOPY-GUIDED INTRAGASTRIC BALLOON FOR WEIGHT LOSS: A 50-PATIENT CASE SERIES

General Surgery

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ABSTRACT

Background: Obesity is a major contributor to metabolic disorders and cardiovascular diseases. Endoscopic intragastric balloon (IGB) therapy has emerged as a minimally invasive alternative for weight management. This study presents a 50-patient case series analyzing the effectiveness, safety, and metabolic benefits of IGB therapy over a 12-month follow-up period. **Methods:** Fifty obese patients (BMI 30–45 kg/m²) underwent endoscopic IGB placement. Primary outcomes included total body weight loss (TBWL%), BMI reduction, and adverse events. Secondary outcomes assessed improvement in diabetes, hypertension, and dyslipidemia. **Results:** The average total body weight loss (TBWL) was 18.5% at 12 months, with 75% of weight loss achieved in the first 3 months. Comorbidities improved in 64% of patients. The most common side effects were nausea (58%) and reflux (42%), managed with supportive treatment. No major complications were observed. **Conclusion:** IGB therapy is an effective and safe intervention for weight loss, particularly for patients who do not qualify for or refuse bariatric surgery. Careful patient selection and adherence to follow-up care are essential for optimal outcomes.

KEYWORDS

INTRODUCTION

Obesity is a growing global epidemic, contributing to type 2 diabetes, hypertension, dyslipidemia, and cardiovascular disease (1). Traditional weight-loss approaches, such as diet and exercise, often yield limited long-term success, with average weight loss of only 5–10% (2).

Bariatric surgery, including sleeve gastrectomy and gastric bypass, provides the most significant weight loss (25–35%) (3). However, surgical procedures are associated with risks of complications, high costs, and long recovery times (4).

Endoscopic IGB therapy offers a non-surgical, reversible option for weight loss by reducing gastric volume and inducing early satiety (5). This study evaluates the efficacy, safety, and metabolic benefits of IGB placement in 50 obese patients over 12 months.

Methods

Patient Selection

This study included 50 obese patients who underwent IGB placement at a tertiary care center between January 2022 and December 2023.

Inclusion Criteria:

- BMI 30–45 kg/m²
- Age 18–65 years
- Failure of previous weight-loss interventions

Exclusion Criteria:

- Large hiatal hernia (>5 cm)
- Active gastrointestinal disease (ulcers, IBD)
- History of bariatric surgery
- Severe psychiatric disorders

Procedure Details

- Patients underwent upper gastrointestinal endoscopy to rule out contraindications.
- A saline-filled IGB (500–700 mL) was placed under deep sedation (propofol).
- Procedure time: ~20 minutes
- Patients were discharged after 2 hours of observation.
- Post-procedure care included:
- Proton pump inhibitors (PPIs) for acid suppression (3 months)
- Antiemetics (ondansetron/metoclopramide) for nausea
- Diet progression: Liquid → soft foods → solid foods (by month 3)
- Exercise recommendations: Walking from Week 1, gradual increase in intensity

RESULTS

Patient Demographics

Parameter	Value
Total Patients	50
Gender	30 Male / 20 Female

Mean Age	42.5 ± 9.2 years
Baseline BMI	37.8 ± 3.5 kg/m ²
Baseline Weight	112.3 ± 9.8 kg

Weight Loss Outcomes

Time Point	Mean Total Body Weight Loss (%)	BMI Reduction (kg/m ²)
3 Months	12.1%	4.5 kg/m ²
6 Months	16.3%	5.9 kg/m ²
12 Months	18.5%	6.8 kg/m ²

Metabolic Improvements

Condition	Improvement (%)	Reduction in Medication Use (%)
Type 2 Diabetes	48%	32%
Hypertension	52%	28%
Dyslipidemia	60%	40%
Obstructive Sleep Apnea	70%	N/A

Adverse Events

Complication	% of Patients	Management
Nausea & Vomiting	58%	Resolved with antiemetics
Acid Reflux	42%	Controlled with PPIs
Balloon Deflation (Early)	4%	Required endoscopic removal
Gastric Ulcer	2%	Treated with PPIs

△ No cases of gastric perforation, balloon migration, or severe complications were observed.

DISCUSSION

Comparison with Other Weight-Loss Methods

Method	Average Weight Loss (%)	Invasiveness	Complications
IGB (This Study)	18.5%	Minimally Invasive	Mild (nausea, reflux)
Sleeve Gastrectomy	25–30%	Surgical	Moderate to Severe
Diet & Exercise Alone	5–10%	Non-Invasive	None

IGB bridges the gap between lifestyle changes and bariatric surgery, offering a safe and effective weight-loss option for patients unwilling to undergo surgery (6).

CONCLUSION

Endoscopic IGB therapy is a safe, effective, and minimally invasive option for obesity treatment. This study demonstrates significant weight loss, metabolic improvements, and a low complication rate over 12 months. Proper patient selection and follow-up care are essential for optimizing outcomes.

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