

Medical Devices for Obesity Treatment

Endoscopic Bariatric Therapies



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KEYWORDS

- Endoscopy • Obesity • Treatment • Devices • Gastric balloon
- Endoscopic suturing

KEY POINTS

- Endoscopic bariatric therapies are effective and safe treatment options for obesity as part of a multifaceted approach in patients with normal gastrointestinal anatomy and motility.
- Gastric endoscopic interventions, such as intragastric balloons and remodeling techniques, alter gastric physiologic processes to enhance satiety and satiation, resulting in 10% to 20% total body weight loss.
- Small bowel interventions, such as bypass sleeves, duodenal mucosal resurfacing, and incisionless anastomoses systems, are effective for both weight loss and metabolic improvement and may offer a complementary role to gastric endoscopic interventions.

INTRODUCTION

The number of patients with obesity in the United States and worldwide that would benefit from bariatric/metabolic surgery is overwhelming. However, less than 2% of patients who are otherwise eligible receive these interventions.^{1–3} This gap in care is likely multifactorial, owing to lack of appeal, costs, and morbidity and mortality associated with bariatric surgery. Thus, similar to other areas in medicine where a minimally invasive approach bridges the gap between medical and surgical management options,⁴ endoscopic bariatric therapies (EBTs) have been developed to offer effective weight loss options by targeting gastric and small intestinal pathways similar to

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bariatric/metabolic surgery with better safety profile afforded by their anatomy preserving and endoscopic nature.⁵

With recent US Food and Drug Administration (FDA) approvals, these devices/techniques are becoming popular across the nation, despite their current lack of insurance coverage. Therefore, primary care providers would benefit by becoming familiar with EBTs and when to use them. Thus, this clinical review focuses on the EBTs that are available in clinical practice or are in advanced stages of development, reviewing their efficacy and safety for primary care providers, with the goals of facilitating future patient discussions, ultimately assisting their decision to implement devices in their obesity management algorithm.

CONSIDERATIONS FOR PRIMARY CARE PROVIDERS

Why Endoscopic Bariatric Therapies for Managing Obesity

Current treatment options to lose weight for patients with obesity include lifestyle intervention, obesity pharmacotherapy, and bariatric surgery. The components of lifestyle intervention include diet, exercise, and behavior modification and should be considered the cornerstone of any obesity treatment. However, as a stand-alone therapy, even intensive lifestyle intervention is only modestly effective with an expected percent total body weight loss (%TBWL) <3%.⁶

The scientific literature is clear in showing that the magnitude of weight loss is strongly associated with prevention and improvement in obesity-related comorbidities, such as diabetes, blood pressure, hyperlipidemia, obstructive sleep apnea, and fatty liver disease. The odds of clinically significant improvements in obesity-related comorbidities are much higher when %TBWL exceeds 10%.^{7,8}

Most patients with mild to moderate obesity (body mass index [BMI] 30–40 kg/m²) do not qualify for bariatric surgery and are left without an effective management approach to their disease; therefore, both government agencies (Agency for Healthcare Research and Quality), and national societies (American Society of Bariatric and Metabolic Surgery and American Society of Gastrointestinal Endoscopy) now recognize that a significant management gap exists for patients with mild to moderate obesity (BMI between 30 and 40 kg/m²) or those with severe obesity (BMI ≥ 40 mg/kg²) who do not wish to pursue bariatric surgery.^{9–11}

EBTs can achieve greater than 10% TBWL in most patients with excellent safety and lower cost than bariatric surgery. Furthermore, they are anatomy preserving and reversible, thus, well positioned to fill the gap in the management of obesity.

Despite their proven efficacy, weight loss produced by EBTs is temporary (as in the case of removable devices) or less durable (gastric remodeling techniques) than traditional bariatric surgery. Thus, EBTs should be viewed as effective weight loss tools, but a weight maintenance strategy is needed to maintain their effect long term to effectively impact obesity-related comorbidities. Therefore, primary care providers should embrace and get comfortable with a paradigm shift in managing obesity as a chronic disorder with an initial effective weight loss strategy followed by an aggressive weight maintenance phase that counteracts the physiologic and behavioral adaptations resulting from the weight loss phase using both obesity pharmacotherapies and behavioral interventions as detailed elsewhere in this issue.

Appropriate Candidates for Endoscopic Bariatric Therapies

Most of the devices and therapies mentioned in later discussion are approved or indicated for patients with a BMI between 30 and 40 kg/m² (1) who have not been able to lose weight or maintain weight loss through nonsurgical methods, such as moderate to

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