

Gastric Sponge System and Use Thereof

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Technology description

Unmet Need

Obesity affects approximately 30% of adults in the United States and continues to rise in prevalence. Surgical intervention is an effective obesity treatment that provides long lasting results. However, due to the high risk profile of surgical intervention, only patients diagnosed with class II obesity (BMI is between 35 and 40 with a significant comorbid illness) or class III obesity (BMI exceeds 40) are eligible to receive surgery. Approximately 70% of obese patients do not meet the criteria for surgery and are left with limited therapeutic options such as lifestyle modification and medication. These options are of limited effectiveness because it is difficult to enforce patient compliance in the long term, which results in high rates of attrition and limited treatment durability. Thus, there is a need for a low-risk weight loss strategy that provides long-term results and minimizes attrition for obese patients who do not qualify for surgery.

Technology Overview

The gastric sponge is delivered via an endoscopic procedure through the pyloric valve to the stomach. Upon implantation in the stomach, the gastric sponge will absorb fluids and expand in volume, occupying more space in the gastric cavity and creating the sensation of fullness. This results in a decreased appetite and reduces consumption, inducing weight loss. The sponge is composed of a core foam region made of EAQ series open cell polyurethane that is acid-resistant and non-degradable, and sutured to a flexible silicone outer casing with slits to enable fluid passage into the core foam. The silicone outer casing is highly durable, allowing the gastric sponge to be implemented as a long-term treatment. The casing is attached to a non-degradable tether to facilitate convenient retrieval of the sponge by endoscope. Because the device functions passively, it has lower attrition rates when compared to treatments that require active patient management such as lifestyle modification and medication. Also, depending on the size of the patient's gastric space, different sizes and numbers of sponges can be deployed, making the device suitable for a broad patient population. Compared to surgical intervention, delivery of a gastric sponge via endoscopy is minimally invasive, so it has a significantly lower risk profile.

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