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A Modern Magnetic Implant for Gastroesophageal Reflux Disease (GERD)

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Abstract

A magnetic implant for the treatment of GERD was FDA-approved in 2012 and has been extensively evaluated. The device is a ring of magnets, that are placed around the gastroesophageal junction, augmenting the native lower esophageal sphincter and preventing reflux yet preserving LES physiologic function and allowing belching and vomiting. Magnetic force is advantageous, being permanent and precise, and forces between magnets decrease with esophageal displacement.

Multiple patient cohorts have been studied using the magnetic device, and trials establish consistent, long-term improvement in pH data, GERD symptom scores and PPI use. A five-year FDA trial demonstrated that the majority of patients achieved normal pH scores, 85% stopped PPIs, and GERD-HRQL symptom scores improved from 27 to 4 at five years. Seven studies have compared magnetic augmentation to laparoscopic Nissen fundoplication and demonstrated that the magnetic device achieved comparable efficacy with regard to PPI cessation, GERD symptom score improvement, and heartburn and regurgitation scores, however, to date there have been no randomized, controlled trials comparing the two techniques, and the study cohorts are not necessarily comparable regarding hiatal hernia size, severity of reflux, BMI scores or esophagitis scores.. Dysphagia incidence was similar in both groups. Reoperation rates and safety profiles were also comparable, but the magnetic device demonstrated significant beneficial differences in allowing belching and vomiting.

The magnetic device is safe, with the main adverse event being dysphagia with an approximate 3-5% chronic incidence. Device removals in clinical trials have

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