

Medical Coverage Policy | Magnetic Esophageal Ring to Treat Gastroesophageal Reflux



EFFECTIVE DATE: 01 | 01 | 2017

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OVERVIEW

A laparoscopically implanted ring composed of interlinked titanium beads with magnetic cores has been developed for the treatment of gastroesophageal reflux disease (GERD). The device is placed around the esophagus at the level of the gastroesophageal junction and is being evaluated in patients who have GERD symptoms, despite maximum medical therapy.

This policy is for the insertion only. For removal of the devices, please refer to the policy in the related policy section.

MEDICAL CRITERIA

Not applicable.

PRIOR AUTHORIZATION

Not applicable.

POLICY STATEMENT

BlueCHiP for Medicare and Commercial

Magnetic esophageal sphincter augmentation to treat gastroesophageal reflux disease is not medically necessary as there is insufficient peer-reviewed scientific literature that demonstrates that the procedure/service is effective.

COVERAGE

Benefits may vary between groups and contracts. Please refer to the appropriate section of the Benefit Booklet, Evidence of Coverage or Subscriber Agreement for services not medically necessary.

BACKGROUND

Gastroesophageal reflux disease (GERD) is defined as reflux of stomach acid into the esophagus that causes symptoms and/or mucosal injury. GERD is a common medical disorder, with estimates of 10% to 20% prevalence in developed countries. The severity of GERD varies widely. Many patients have mild, intermittent symptoms that do not require treatment or only require episodic use of medications. Other patients have chronic, severe GERD that can lead to complications such as Barrett esophagus and esophageal cancer. For patients with severe disease, chronic treatment with acid blockers is an option. For some patients, medications are not adequate to control symptoms; other patients prefer to avoid the use of indefinite, possibly lifelong medications. Surgical treatments are available for these patients, primarily a Nissen fundoplication performed either laparoscopically or by open surgery. A number of less invasive procedures are also being evaluated as an intermediate option between medical therapy and surgery (see review 2.01.38 on endoscopic procedures).

The LINX Reflux Management System is composed of a small flexible band of 10 to 18 interlinked titanium beads with magnetic cores. Using standard laparoscopic techniques, the band is placed around the esophagus at the level of the gastroesophageal junction. The magnetic attraction between the beads is intended to augment the lower esophageal sphincter to prevent gastric reflux into the esophagus, without compressing the esophageal wall. It is proposed that swallowing food or liquids creates sufficient pressure to overcome the magnetic bond between the beads, allowing the beads to separate and temporarily increase the size of the ring. The target population is patients who have GERD symptoms despite maximum medical therapy (eg,

proton pump inhibitors) but who do not want to risk the adverse effects of a surgical procedure like Nissen fundoplication. Adverse events of the LINX Reflux Management System may include dysphagia or odynophagia. The device can be removed by a laparoscopic procedure if severe adverse events occur or if magnetic resonance imaging is needed for another condition.

For individuals who have GERD who receive magnetic sphincter augmentation (MSA), the evidence includes prospective and retrospective observational comparative studies, 2 single-arm interventional trials, and a number of single-arm observational studies. Relevant outcomes are symptoms, change in disease status, medication use, and treatment-related morbidity. In the 2 single-arm, uncontrolled manufacturer-sponsored studies submitted to the U.S. Food and Drug Administration for device approval, subjects showed improvements in Gastroesophageal Reflux Disease–Health Related Quality of Life (GERD-HRQL) scores and reduced proton pump inhibitor (PPI) use. Similarly, observational comparative studies, most often comparing magnetic sphincter augmentation (MSA) with laparoscopic Nissen fundoplication, generally have shown that GERD-HRQL scores do not differ significantly between fundoplication and MSA, and patients are able to reduce PPI use after MSA. However, the comparative studies are retrospective and nonrandomized, may be affected by selection bias, and the subjective outcome measures used in these studies (eg, the GERD-HRQL scores) may be biased. A randomized trial is in progress; it will compare treatment with the MSA and treatment with double-dose PPIs. Randomized comparisons of MSA with laparoscopic Nissen fundoplication are also needed to evaluate the relative risk-benefit of these 2 procedures. The evidence is insufficient to determine the effects of the technology on health outcomes.

REGULATORY STATUS

In 2012, the LINX™ Reflux Management System (Torax Medical, Shoreview, MN) was approved by the U.S. Food and Drug Administration (FDA) through the premarket approval process for patients diagnosed with gastroesophageal reflux disease (GERD), as defined by abnormal pH testing, and who continue to have chronic GERD symptoms despite maximum therapy for the treatment of reflux. FDA initially required 5-year follow-up of 100 patients from the investigational device exemption pivotal study to evaluate safety and efficacy of the device, which was completed in March 2016. FDA product code: LEI.

CODING

BlueCHiP for Medicare and Commercial

The following code is not medically necessary

43284 - Laparoscopy, surgical, esophageal sphincter augmentation procedure, placement of sphincter augmentation device (ie, magnetic band), including cruroplasty when performed

RELATED POLICIES

Removal of Non-Covered Implantable Devices

PUBLISHED

Provider Update, April 2017

REFERENCES:

1. Warren HF, Reynolds JL, Lipham JC, et al. Multi-institutional outcomes using magnetic sphincter augmentation versus Nissen fundoplication for chronic gastroesophageal reflux disease. *Surg Endosc.* Aug 2016;30(8):3289-3296. PMID 26541740
2. Asti E, Bonitta G, Lovece A, et al. Longitudinal comparison of quality of life in patients undergoing laparoscopic Toupet fundoplication versus magnetic sphincter augmentation: Observational cohort study with propensity score analysis. *Medicine (Baltimore).* Jul 2016;95(30):e4366. PMID 27472725
3. Reynolds JL, Zehetner J, Wu P, et al. Laparoscopic magnetic sphincter augmentation vs laparoscopic nissen fundoplication: a matched-pair analysis of 100 patients. *J Am Coll Surg.* Jul 2015;221(1):123-128. PMID 26095560

4. Louie BE, Farivar AS, Shultz D, et al. Short-term outcomes using magnetic sphincter augmentation versus Nissen fundoplication for medically resistant gastroesophageal reflux disease. *Ann Thorac Surg.* Jun 21 2014;98(2):498-504. PMID 24961840
5. Sheu EG, Nau P, Nath B, et al. A comparative trial of laparoscopic magnetic sphincter augmentation and Nissen fundoplication. *Surg Endosc.* Jul 11 2014;29(3):505-509. PMID 25012804
6. Riegler M, Schoppman SF, Bonavina L, et al. Magnetic sphincter augmentation and fundoplication for GERD in clinical practice: one-year results of a multicenter, prospective observational study. *Surg Endosc.* May 2015;29(5):1123-1129. PMID 25171881
7. U.S. Food and Drug Administration, Gastroenterology and Urology Devices Panel of the Medical Devices Advisory Committee. LINX™ Reflux Management System. 2012; <http://www.fda.gov/downloads/AdvisoryCommittees/CommitteesMeetingMaterials/MedicalDevices/MedicalDevicesAdvisoryCommittee/Gastroenterology-UrologyDevicesPanel/UCM286236.pdf>. Accessed June 3, 2015.
8. Bonavina L, DeMeester T, Fockens P, et al. Laparoscopic sphincter augmentation device eliminates reflux symptoms and normalizes esophageal acid exposure: one- and 2-year results of a feasibility trial. *Ann Surg.* Nov 2010;252(5):857-862. PMID 21037442
9. Lipham JC, DeMeester TR, Ganz RA, et al. The LINX(R) reflux management system: confirmed safety and efficacy now at 4 years. *Surg Endosc.* Oct 2012;26(10):2944-2949. PMID 22538694
10. Ganz RA, Peters JH, Horgan S, et al. Esophageal sphincter device for gastroesophageal reflux disease. *N Engl J Med.* Feb 21 2013;368(8):719-727. PMID 23425164
11. Saino G, Bonavina L, Lipham JC, et al. Magnetic sphincter augmentation for gastroesophageal reflux at 5 years: final results of a pilot study show long-term acid reduction and symptom improvement. *J Laparoendosc Adv Surg Tech A.* Oct 2015;25(10):787-792. PMID 26437027
12. Ganz RA, Edmundowicz SA, Taiganides PA, et al. Long-term outcomes of patients receiving a magnetic sphincter augmentation device for gastroesophageal reflux. *Clin Gastroenterol Hepatol.* May 2016;14(5):671-677. PMID 26044316
13. Bonavina L, Saino G, Bona D, et al. One hundred consecutive patients treated with magnetic sphincter augmentation for gastroesophageal reflux disease: 6 years of clinical experience from a single center. *J Am Coll Surg.* Oct 2013;217(4):577-585. PMID 23856355
14. Lipham JC, Taiganides PA, Louie BE, et al. Safety analysis of first 1000 patients treated with magnetic sphincter augmentation for gastroesophageal reflux disease. *Dis Esophagus.* Mar 11 2015;28(4):305-311. PMID 24612509
15. Smith CD, DeVault KR, Buchanan M. Introduction of mechanical sphincter augmentation for gastroesophageal reflux disease into practice: early clinical outcomes and keys to successful adoption. *J Am Coll Surg.* Apr 2014;218(4):776-781. PMID 24529809
16. Reynolds JL, Zehetner J, Bildzukewicz N, et al. Magnetic sphincter augmentation with the LINX device for gastroesophageal reflux disease after U.S. Food and Drug Administration approval. *Am Surg.* Oct 2014;80(10):1034-1038. PMID 25264655
17. Warren HF, Louie BE, Farivar AS, et al. Manometric changes to the lower esophageal sphincter after magnetic sphincter augmentation in patients with chronic gastroesophageal reflux disease. *Ann Surg.* Jul 26 2016. PMID 27464617
18. Rona KA, Reynolds J, Schwameis K, et al. Efficacy of magnetic sphincter augmentation in patients with large hiatal hernias. *Surg Endosc.* Aug 23 2016. PMID 27553803
19. Society of American Gastrointestinal and Endoscopic Surgeons (SAGES). TAVAC Safety and Effectiveness Analysis: LINX® Reflux Management System. 2013; <http://www.sages.org/publications/guidelines/tavac-safety-and-effectiveness-analysis-linx-reflux-management-system/>. Accessed June 3, 2015.
20. ASGE Technology Committee. Magnets in the GI tract. *Gastrointest Endosc.* Oct 2013;78(4):561-567. PMID 24054738

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