CASE OF LINX DEVICE FAILURE AFTER REPEAT MRI SCANS

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INTRODUCTION

A 48-year old female with gastroesophageal reflux disease was treated with a magnetic sphincter augmentation (MSA) in 2017. Her symptoms were initially well-controlled with the LINX device until 2019, when she began to experience recurrent dysphagia and heartburn. Of note, the patient underwent an MRI in 2019 shortly before the return of her symptoms. During this exam, she experienced acute onset of epigastric pain in addition to a pulling sensation in her epigastrium. The patient underwent a subsequent MRI in 2023 for surveillance of a pituitary tumor which had to be aborted due to excruciating epigastric pain.

The LINX device for magnetic sphincter augmentation (MSA) of the lower esophageal sphincter was approved by the FDA in March 2012 for the treatment of gastroesophageal reflux disease. This device is made of a small ring of magnetic beads placed around the base of the esophagus to augment the lower esophageal sphincter function. The most common complication of the LINX procedure is dysphagia, with additional complications including pain, nausea, vomiting and device erosion. There have been no previous reports about patients with LINX device failure from undergoing MRI study.

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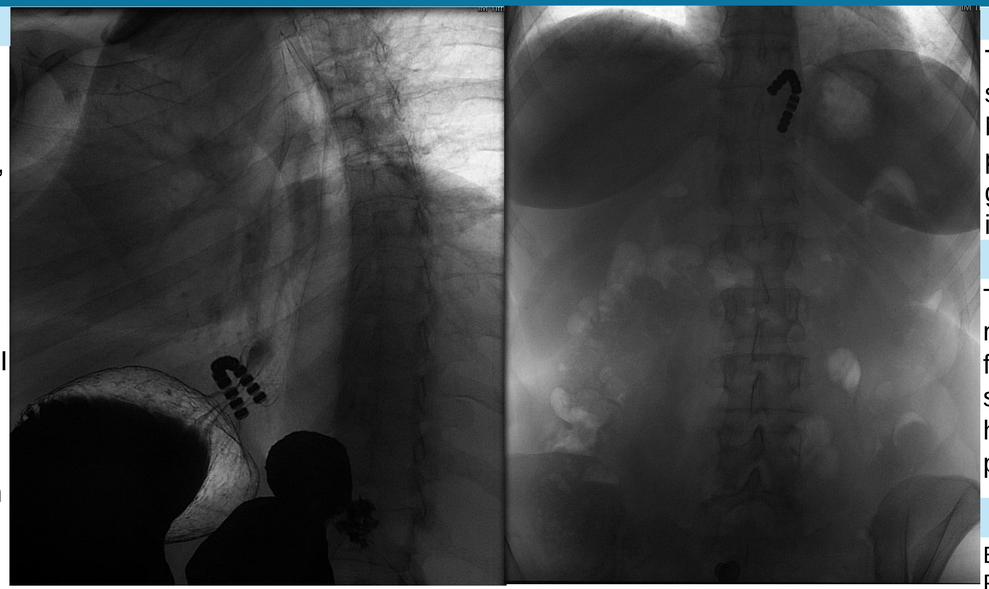


Figure 1. Loss of circumferential LINX device placement demonstrated at patient’s lower esophageal sphincter as depicted on two shots from upper gastrointestinal swallow study.

METHODS AND PROCEDURES

Most LINX systems implanted after 2016 are considered safe for MRI scanners up to a strength of 1.5 Tesla (1.5T). Our patient had a LINX device compatible with 1.5T and her MRI card was appropriately checked prior to each MRI. On review of MRI strengths used for her annual surveillance scans of her pituitary adenoma, 1.5T were used.

A work up for recurrent GERD symptoms including upper endoscopy and an upper gastrointestinal series was notable for a small sized hiatal hernia, a failed LINX prosthesis, and large volume gastroesophageal reflux.

RESULTS

To address the broken LINX device and the patient’s recurrent GERD symptoms, the patient underwent a laparoscopic LINX explantation with Nissen fundoplication and hiatal hernia repair. The patient tolerated the procedure well and was discharged on post op day 1 after a postop upper gastrointestinal study confirmed complete removal of the LINX device and intact fundoplication.

CONCLUSIONS

This case report brings into question the integrity of LINX systems with multiple MRI’s despite reported compatibility. This patient with LINX device failure after undergoing repeat MRIs for pituitary tumor surveillance was successfully treated with laparoscopic removal and fundoplication to address her GERD. Patients who require repeat MRI for surveillance with a LINX prosthesis in place may consider alternative imaging when possible.

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