Robotic Pexied-Sling Fundoplication: A Novel Anti-Reflux Procedure with Favorable Perioperative Outcomes

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Introduction

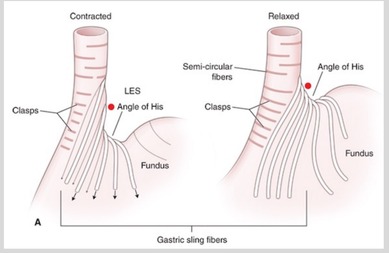
Nissen and Toupet fundoplications are effective surgical therapies for GERD. However, each has its limitations. Here we describe the novel technique of Pexied-sling fundoplication (PSF) and compare a large series to the Nissen fundoplication.

Nissen fundoplication
- 360-degree posterior wrap
- Post-operative concerns: dysphagia, gas-bloating, belching, inability to vomit

Toupet fundoplication
- 270-degree partial posterior wrap
- Post-operative concerns: longevity (fundoplication stitches only include thin bite of esophageal muscle fibers)

Pexied-Sling fundoplication (PSF)
- Pexy stitches create fundoplication anchoring points around the circumference of the hiatus
- Creation of a posterior esophagogastric junction sling recapitulates orientation of native sling muscle fibers

Esophagogastric Junction (EGJ) Physiology



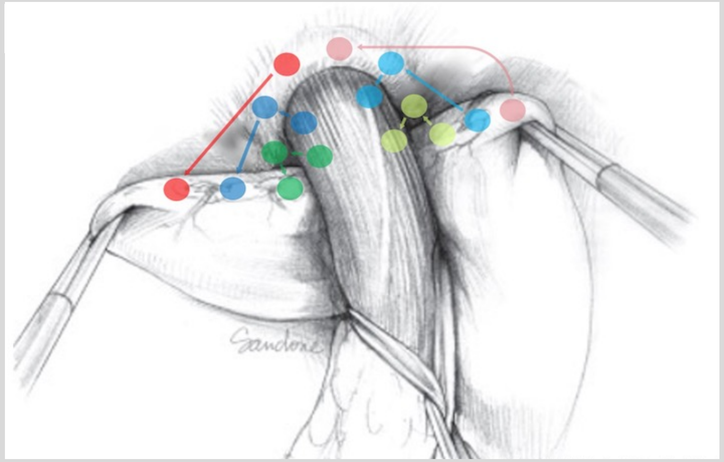
Chapter 23 Gastroesophageal Reflux Disease, Hiatal Hernia, and Barrett Esophagus, Zinner MJ, Ashley SW, Hines O. *Maingot's Abdominal Operations, 13e;* 2019.

Methods

Prospective database of all Nissen and Pexied-Sling Fundoplications performed from 2009-2023 by a single surgeon (MA) at a tertiary academic hospital.

Primary outcomes:
- 30-day Post-operative GERD-HRQL: Heartburn, dysphagia, bloating/gassiness, patient satisfaction, medication use

Pexied-Sling Fundoplication



J.G. Hunter, D.H. Spight, C.Sandone, J.E. Fairman: Atlas of Minimally Invasive Surgical Operations

Results

30-Day Post-Operative Outcomes	Pexied-Sling (N=817)	Nissen (N=440)	*P*-Value
Overall GERD-HRQL	1.7	2.3	>0.05
Heartburn	0.7	1	>0.05
Dysphagia	0.9	2.7	**<0.01**
Bloating/Gassiness	0.5	2.5	**<0.01**
% Satisfaction	94.60%	87.10%	**<0.01**

[1] Scored on a Likert Scale where: 0 = No Symptoms and 5 = Incapacitating Symptoms

Conclusions

- The PSF aims to emulate native EGJ sling fibers by creating a retro-esophageal sling using the fundus
- The PSF mitigates some post-operative concerns of Nissen approach by avoiding circumferential fundoplication
- Robotic PSF repair is safe and effect technique with favorable patient-centered outcomes

Pexied-Sling Fundoplication Surgical Technique Video