Department of Surgery
2026 Research Day
6th May 2026 (Wednesday) | 7 am – Noon | MART Auditorium

Title:
Wrapped Around the Esophagus: A Historical Perspective on Foreign-Body Anti-Reflux Surgery

Author(s) and Affiliations:
Alexandria Krauss, MD, Konstantinos Spaniolas, MD MBA; Amy Rosenbluth, MD; Edmund W. Lee, MD MHPE. Stony Brook University Hospital, Stony Brook, NY

Faculty Mentor(s):
Edmund Lee, MD, MHPE, Konstantinos Spaniolas, MD, MBA

Background:
Gastroesophageal reflux disease (GERD) is common, and surgical management has evolved with advances in technology. Since the development of the Nissen fundoplication in the 1950s, numerous prosthetic devices have been introduced to simplify surgery and reinforce the lower esophageal sphincter. This study aims to review the historical evolution of surgical GERD treatments and examine the complications associated with foreign materials placed around the esophagus.

Methods:
A literature review was conducted using PubMed and Google Scholar to identify articles related to the surgical treatment of GERD. Search terms included MeSH terms and keywords focusing on prosthetic devices and foreign materials used in antireflux surgery.

Results (or Preliminary Results):
Surgical management of GERD began with the Nissen fundoplication and progressed toward simplified approaches incorporating prosthetic devices. These included the Angelchik prosthesis, mesh reinforcement in hiatal hernia repair, and magnetic sphincter augmentation. A common theme among these interventions was the development of significant complications, including erosion, migration, and dysphagia, ultimately leading to abandonment or removal of many devices.

Conclusions (or Preliminary Conclusions):
The evolution of surgical GERD treatment demonstrates a recurring pattern in which rigid compression or prosthetic reinforcement of the distal esophagus is associated with significant morbidity. Despite technological advances, the esophagus appears poorly tolerant of foreign materials. Future approaches to GERD management should prioritize native tissue preservation and a deeper understanding of lower esophageal sphincter physiology.