Controversies in Complex Hiatal Hernia

A. Daniel Guerrón MD
Assistant Professor of Surgery
Department of Surgery
Division of Metabolic and Weight Loss Surgery
Duke University Health System

@danguerron
Disclosure

• Gore
• Levita
• Medtronic
Controversy

As always, when data are scarce, opinions are strongly held!
Laparoscopic versus Open Repair of Paraesophageal Hernia: The Second Decade

Jörg Zehetner, MD, Steven R DeMeester, MD, FACS, Shahin Ayazi, MD, Patrick Kilday, Florian Augustin, MD, Jeffrey A Hagen, MD, FACS, John C Lipham, MD, FACS, Helen J Sohn, MD, FACS, Tom R DeMeester, MD, FACS

BACKGROUND: A decade ago we reported that laparoscopic repair of paraesophageal hernia (PEH) had an objective recurrence rate of 42% compared with 15% after open repair. Since that report we have modified our laparoscopic technique. The aim of this study was to determine if these modifications have reduced the rate of objective hernia recurrence.

STUDY DESIGN: We retrospectively identified all patients that had primary repair of a PEH with ≥50% of the stomach in the chest from May 1998 to January 2010 with objective follow-up by videosophogram. The finding of any size of hernia was considered to be recurrence.

RESULTS: There were 73 laparoscopic and 73 open PEH repairs that met the study criteria. There were no significant differences in gender, body mass index, or prevalence of a comorbid condition between groups. The median follow-up was similar (12 months laparoscopic versus 16 months open; p = 0.11). In the laparoscopic group, 84% of patients had absorbable mesh reinforcement of the crural closure and 40% had a Collis gastroplasty, compared with 32% and 26%, respectively, in the open group. A recurrent hernia was identified in 27 patients (18%), 9 after laparoscopic repair and 18 after open repair (p = 0.09). The median size of a recurrent hernia was 3 cm, and the incidence of recurrence increased yearly in those with serial follow-up with no early peak or late plateau.

CONCLUSIONS: In our first decade of laparoscopic PEH repair, no mesh crural reinforcement was used, and no patient had a Collis gastroplasty. Evolution in the technique of laparoscopic PEH repair during the subsequent decade has reduced the hernia recurrence rate to that seen with an open approach. Reduced morbidity and shorter hospital stay make laparoscopy the preferred approach, but continued efforts to reduce hernia recurrence are warranted. (J Am Coll Surg 2011;212:813–820. © 2011 by the American College of Surgeons)
Quality of Life After Collis Gastroplasty for Short Esophagus in Patients With Paraesophageal Hernia

Katie S. Nason, MD, MPH, James D. Luketich, MD, Omar Awais, DO, Ghulam Abbas, MD, Arjun Pennathur, MD, Rodney J. Landreneau, MD, and Matthew J. Schuchert, MD

Department of Cardiothoracic Surgery, University of Pittsburgh, University of Pittsburgh Medical Center, Pittsburgh, Pennsylvania

Background. Collis gastroplasty is an important component of laparoscopic giant paraesophageal hernia (GPEH) repair in patients with persistent shortened esophagus after aggressive laparoscopic mobilization. Concerns remain, however, regarding symptomatic outcomes compared with fundoplication alone. This study assessed the impact of Collis gastroplasty on quality of life after laparoscopic GPEH repair.

Methods. We performed 795 nonemergent laparoscopic GPEH repairs with fundoplication (with Collis, n = 454; fundoplication alone, n = 341). Radiographic follow-up and symptom assessment were obtained a median 22 months and 20 months, respectively, after fundoplication alone and 36 and 33 months, respectively, after Collis (p < 0.001). Radiographic recurrence, reoperation for recurrent hernia or intolerable symptoms, overall symptom improvement, and quality of life were examined.

Results. Compared with fundoplication alone, Collis patients had significantly larger GPEH (p = 0.027) and fewer comorbidities (p = 0.002). Radiographic recurrences were similar (p = 0.353). Symptom improvement was significant for both (p < 0.001), although Collis was associated with better pain resolution (p < 0.001) and less gas bloat (p = 0.003). Quality of life was good to excellent in 88% (90% Collis versus 86% fundoplication alone, p = 0.17).

Conclusions. Symptomatic outcomes after laparoscopic fundoplication with Collis gastroplasty are excellent and comparable with those of fundoplication alone. These results confirm that utilization of Collis gastroplasty, based on intraoperative assessment for shortened esophagus, is not detrimental to the overall outcome or quality of life associated with the laparoscopic approach to GPEH. Collis gastroplasty is recommended as an important procedure in the surgeon’s armamentarium for laparoscopic repair of GPEH.

Laparoscopic Paraesophageal Hernia Repair: Defining Long-Term Clinical and Anatomic Outcomes

Brant K. Oelschlager • Rebecca P. Petersen • L. Michael Brunt • Nathaniel J. Soper • Brett C. Sheppard • Lee Mitsumori • Charles Rohrmann • Lee L. Swanstom • Carlos A. Pellegrini

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Abstract
Objective We recently reported in a multi-institutional, randomized study of laparoscopic paraesophageal hernia repair (LPEHR) that the anatomic recurrence rate at a median of approximately 5 years was >50%. This study focuses exclusively on the symptomatic response to LPEHR and its relationship with the development of a recurrent hernia.

Methods During 2002 to 2005, 108 patients underwent LPHER with or without biologic mesh. A standardized symptom severity questionnaire, SF-36 health survey, and upper gastrointestinal series were performed at baseline, 6 months, and during 2008–2009.

Results Of 108 patients, 72 (average age of 68±10 years) underwent clinical assessment, and 60 of them also had radiologic studies at a median follow-up of 58 (40–78) months. Radiographic recurrence (≥20 mm) was 14% at 6 months and 57% at the time of follow-up, and the average recurrence size was 40±10 mm. All symptoms were significantly improved at long-term follow-up and, with the exception of heartburn, were unaffected by the presence or size of the recurrence. Two patients (3%) with recurrent symptoms related to their hernia underwent reoperation.

Conclusion Despite frequent radiologic recurrences after LPEHR, symptoms remain well controlled, patient satisfaction is high, and the need for reoperation is low.
n= 108 at 4 Institutions

57 primary repair : 51 biologic mesh

Primary Outcome recurrence (>2 cm) by UGI at 6 months

93% followup and 90% had 6 month UGI
operative time - 183 min primary : 202 biologic

6 month recurrence - 12 primary : 4 biologic

Conclusions: Adding a biologic prosthesis during LPEHR reduces the likelihood of recurrence at 6 months, without mesh-related complications or side effects.
Biologic Prosthesis to Prevent Recurrence after Laparoscopic Paraesophageal Hernia Repair: Long-term Follow-up from a Multicenter, Prospective, Randomized Trial

Brant K Oelschlager, MD, FACS, Carlos A Pellegrini, MD, FACS, John G Hunter, MD, FACS, Michael L Brunt, MD, FACS, Nathaniel J Soper, MD, FACS, Brett C Sheppard, MD, FACS, Nayak L Polissar, PhD, Moni B Neradilek, MS, Lee M Mitsumori, MD, Charles A Rohrmann, MD, Lee L Swanstrom, MD, FACS

BACKGROUND: In 2006, we reported results of a randomized trial of laparoscopic paraesophageal hernia repair (LPEHR), comparing primary diaphragm repair (PR) with primary repair buttressed with a biologic prosthesis (small intestinal submucosa [SIS]). The primary endpoint, radiologic hiatal hernia (HH) recurrence, was higher with PR (24%) than with SIS buttressed repair (9%) after 6 months. The second phase of this trial was designed to determine the long-term durability of biologic mesh-buttressed repair.

METHODS: We systematically searched for the 108 patients in phase I of this study to assess current clinical symptoms, quality of life (QOL) and determine ongoing durability of the repair by obtaining a follow-up upper gastrointestinal series (UGI) read by 2 radiologists blinded to treatment received. HH recurrence was defined as the greatest measured vertical height of stomach being at least 2 cm above the diaphragm.

RESULTS: At median follow-up of 58 months (range 42 to 78 mo), 10 patients had died, 26 patients were not found, 72 completed clinical follow-up (PR, n = 39; SIS, n = 33), and 60 repeated a UGI (PR, n = 34; SIS, n = 26). There were 20 patients (59%) with recurrent HH in the PR group and 14 patients (54%) with recurrent HH in the SIS group (p = 0.7). There was no statistically significant difference in relevant symptoms or QOL between patients undergoing PR and SIS buttressed repair. There were no strictures, erosions, dysphagia, or other complications related to the use of SIS mesh.

CONCLUSIONS: LPEHR results in long and durable relief of symptoms and improvement in QOL with PR or SIS. There does not appear to be a higher rate of complications or side effects with biologic mesh, but its benefit in reducing HH recurrence diminishes at long-term follow-up (more than 5 years postoperatively) or earlier. (J Am Coll Surg 2011;213:461–468. © 2011 by the American College of Surgeons)
Background:
In 2006, we reported results of a randomized trial of laparoscopic paraesophageal hernia repair (LPEHR), comparing primary diaphragm repair (PR) with primary repair buttressed with a biologic prosthesis (small intestinal submucosa [SIS]). The primary endpoint, radiologic hiatal hernia (HH) recurrence, was higher with PR (24%) than with SIS buttressed repair (9%) after 6 months. The second phase of this trial was designed to determine the long-term durability of biologic mesh-buttressed repair.

Methods:
We systematically searched for the 108 patients in phase 1 of this study to assess current clinical quality of life, food intolerance, and the durability of the repair by obtaining a follow-up upper gastrointestinal (UGI) exam by 2 radiologists blinded to treatment received. HH recurrence was the greatest measured vertical height of stomach being at least 2 cm above the diaphragm.

Results:
At median follow-up of 58 months (range 42 to 78 mo), 10 patients had died, 26 patients were not found, 72 patients had UGI performed and were evaluable. There were 27 patients (59%) with recurrent HH in the PR group and 14 patients (26%) in the SIS group (p = 0.7). There was no statistically significant difference in relevant symptoms or QOL between patients undergoing PR and SIS buttressed repair. There were no strictures, erosions, dysphagia, or other complications related to the use of SIS mesh.

Conclusions:
LPEHR results in long and durable relief of symptoms and improvement in QOL with PR or SIS. There does not appear to be a higher rate of complications or side effects with biologic mesh, but its benefit in reducing HH recurrence diminishes at long-term follow-up (more than 5 years postoperatively) or earlier. (J Am Coll Surg 2011;213:461–468. © 2011 by the American College of Surgeons)