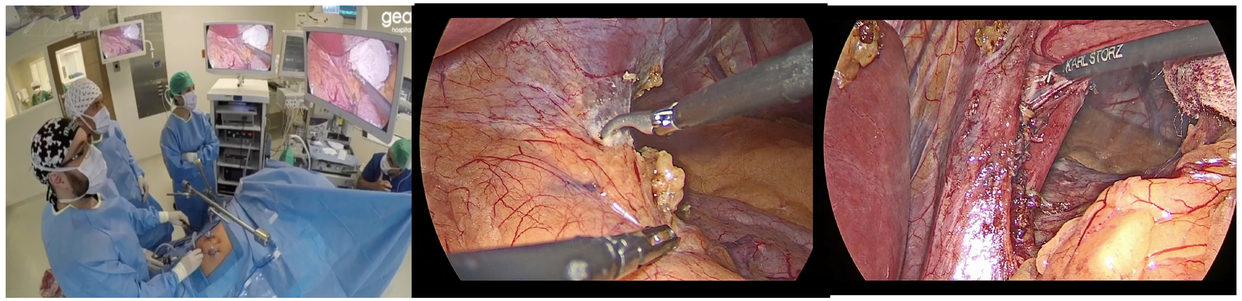
Feasibility and safety of the use of Totally Mini-laparoscopic complete fixed nondeformable fundoplication (Gea fundoplication) with Heller myotomy to treat achalasia

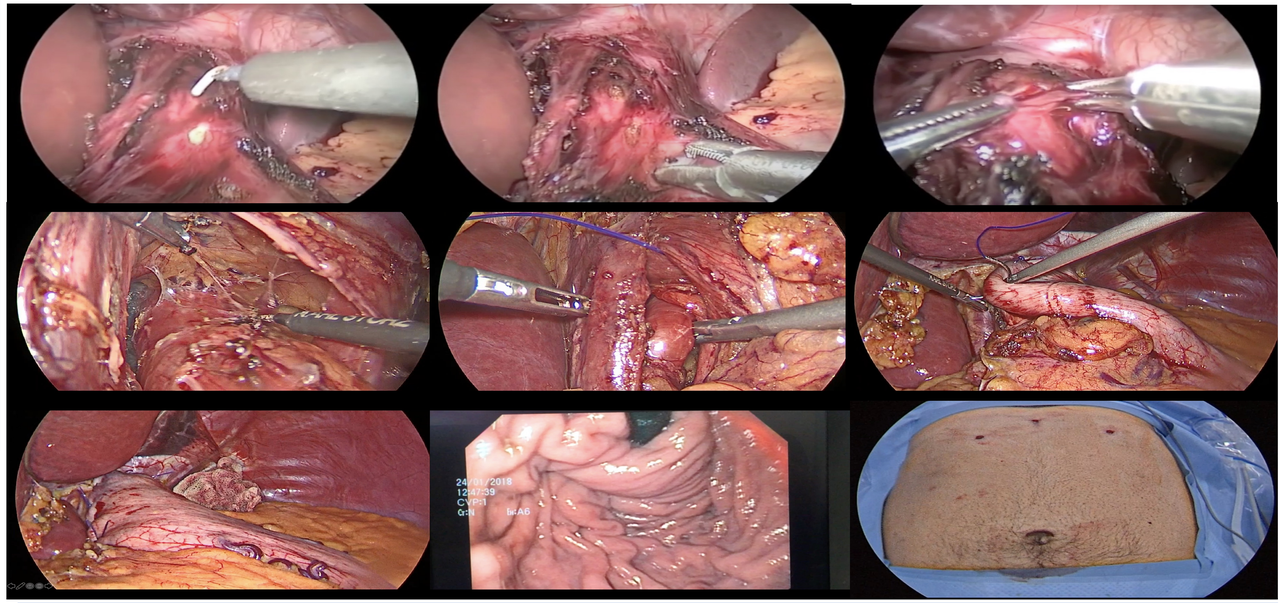
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gea hospital

Introduction: The complete fixed non-deformable fundoplication or Gea fundoplication was created for the treatment of gastroesophageal disorders (including GERD and Achalasia), with the aim of ensuring that the anatomical modifications around the LES remain undeformable (fixing the stomach, the GEU, and performing a complete fundoplication to the diaphragmatic aponeurosis and crura using approximately 13-16 knots); with comparable perioperative results to other fundoplications; but with less dysphagia. The development of minilaparoscopic devices made it possible to perform procedures with less postoperative pain, abdominal wall trauma, better cosmetic results, and ergonomics for the surgeon. The aim of this study is to prove the safety and feasibility of the complete fixed non-deformable fundoplication using a complete mini-laparoscopic approach for the treatment of Achalasia.





Methods: A retrospective study evaluated the mini-laparoscopic Gea fundoplications done between May 2018-September 2022. Demographic, endoscopic, physiologic, and surgical variables were evaluated. Total mini-laparoscopic surgery was performed using a 10mm trocar for the telescope, two 3mm trocars, and a liver retractor of 2.5mm; with the change of one mini-laparoscopic trocar to a conventional 5mm trocar for the use of advanced energy devices for the mini-laparoscopic assisted surgeries (mainly Redofunduplications). The fundoplication was performed as described using extracorporeal Gea knots. The primary Heller myotomy was done using monopolar devices (as described in primary cases), with complementary myotomy depending on the manometric results on the redo cases.

Results: 12 patients were treated for achalasia, being 7 primary surgeries and 5 redo (3 mini-assisted and 2 totally mini-laparoscopic); the mean operative time for the primary surgery was 170.2 (90-240) with an EBL of 32.4cc (5-110), and a mean time of 230.3 (190-330)min and 40.2cc(10-140) for the redo group. 3 patients (all Achalasia redo) presented esophageal perforation due to the dissection; all of them were managed with primary closure, Gea fundoplication, and drain collocation. Intraoperative endoscopy was performed in all patients to evaluate the fundoplication configuration. All primary patients were discharged the same day (ambulatory), redo patients were discharged after 24hrs, and esophageal perforation patients were discharged after 3-5 days. Patients required only 3-5 days of mild oral analgesics; and during the follow-up relief of the symptoms (using the Eckardt symptom score).

Conclusion: The complete fixed non-deformable fundoplication with heller myotomy has proven effective in threatening achalasia; our results show that the minilaparoscopic approach is feasible and safe for primary and redo patients, with all the benefits of this approach; even when complications like esophageal perforation due to the dissection is presented.

References
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