

Perspective

Strategy for Mitigating the Worldwide Burden of Gastroesophageal Reflux Disease—A European Medical Association Position Paper Endorsing Innovation in Laparoscopic Surgery for Sustainable Management

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Abstract

Background and Aims: Gastroesophageal reflux disease (GERD) is the most common esophageal disorder worldwide and a progressive condition leading to Barrett's esophagus and adenocarcinoma. Continuous medical therapy with proton pump inhibitors fails to restore the antireflux barrier and is unable to relieve symptoms in up to 40% of patients. A tailored and standardized antireflux surgical procedure may increase cure rates and meet patient expectations. **Methods and Results:** Antireflux surgery aims to reestablish the natural antireflux barrier, which includes the diaphragmatic crura, the lower esophageal sphincter (LES), and the angle of His along with the gastroesophageal flap valve. For decades, the Nissen total fundoplication has been the primary procedure and remains the gold standard for surgical treatment. Alternatives such as Toupet partial fundoplication, Dor partial fundoplication, and the magnetic sphincter augmentation (LINX™) procedure have been developed to mitigate side effects like dysphagia, gas-bloat syndrome, and the inability to belch or vomit. Recent clinical findings regarding a novel procedure, RefluxStop™, indicate that restoring the gastroesophageal flap valve, in conjunction with anterior fundoplication and a silicone device for stabilizing the LES beneath the diaphragm, can achieve lasting reflux control and enhance patient-reported outcomes. **Conclusions:** The planning of healthcare services and actionable strategies to improve equity and quality of treatment is critical to address the global burden of GERD. Modern laparoscopic surgery for GERD is safe and effective and should be performed in centers offering a complete diagnostic pathway and specific surgical techniques tailored to the individual GERD phenotype. Shared decision-making between the surgeon and the patient is essential for

the choice of operation. A personalized approach can offer clinical benefits over total fundoplication and improve patient-reported outcomes.

Keywords: gastroesophageal reflux disease; hiatus hernia; global healthcare; Barrett's esophagus; antireflux surgery

1. Epidemiology

Gastroesophageal reflux disease (GERD) is the most common esophageal disorder worldwide. The estimated prevalence is 8.8–25.9% in Europe and 18.1–27.8% in North America [1]. The disease burden is high, with significant geographic variations and about 1.03 billion individuals suffering from this condition globally [2,3]. The mean estimate of age-standardized prevalence ranges from 4.4 to 14.0 cases per 100,000 people, and the global burden of GERD has increased by 18.1% from 1990 to 2017 as a result of aging, an increase in the proportion of younger patients, and the obesity epidemic. Overall, GERD is a public health challenge associated with life-long symptoms, impaired quality of life, and an estimated 0.7% disability rate, with the years lived with the disability having increased by 67% [4]. The disease burden is more pronounced in less developed countries [5]. In a population-based study, 31% of the subjects reported GERD symptoms during the previous week, and 54% of those taking daily proton pump inhibitors (PPIs) had persistent symptoms [6]. One-third of patients present with disruptive GERD characterized by frequent/severe reflux. Compared to those with non-disruptive GERD, these individuals have 2.4-times higher rates of absenteeism, 1.5-times lower sleep quality scores, 1.1-times lower mean summary scores of physical and mental health, and 1.3-times lower scores of psychological and general well-being [7].

2. Pathophysiology and Clinical Course

Symptoms and complications in patients with GERD are associated with anatomic and functional abnormalities involving the lower esophageal sphincter (LES), the crural diaphragm, and/or the gastroesophageal flap valve [8,9]. A defective antireflux barrier may result from a hypotonic or short LES, an altered geometry of the angle of His–gastroesophageal flap valve, and/or a hiatal hernia, which may aggravate GERD by delaying the clearance of the herniated gastric pouch. Large paraesophageal hernias may cause obstructive symptoms due to gastric volvulus, dyspnea due to pulmonary and cardiac compression, and/or anemia secondary to bleeding from Cameron ulcers [10,11]. In addition, defective esophageal peristalsis and/or a reduced salivary production allow acid, pepsin, and biliary acids to stay in the esophageal lumen for prolonged periods of time after reflux events, aggravating esophageal mucosal damage. GERD is often a progressive condition, possibly associated with severe complications such as peptic stricture, pulmonary fibrosis, and Barrett's esophagus [12,13]. In a case–control study, an association between frequent GERD symptoms and esophageal adenocarcinoma (EAC) was demonstrated [14]. Data from the PROGERD study on 2721 patients with esophagitis grade A–B or C–D who completed the 5-year follow-up showed progression to Barrett's esophagus in 12% and 19.7% of patients, respectively, despite symptomatic control under routine medical care with PPIs [15]. Finally, data from the Globocan 2020 study show that 141,300 new (EAC) cases are expected by 2040 [16].

3. Clinical Presentation and Diagnostic Approach

The diagnosis of GERD may be challenging due to the co-existence of typical and atypical symptoms and the suboptimal accuracy of the currently available diagnostic tests. Heartburn and regurgitation, the two most common typical symptoms, have low sensitivity and specificity. Response to an initial trial of PPI therapy neither rules in nor rules out GERD as the cause of persistent symptoms [17]. On the other hand, a lack of typical symptoms is common in elderly patients and in patients with established Barrett's esophagus [18]. Extra-esophageal syndromes with laryngopharyngeal and pulmonary symptoms (dysphonia, globus sensation and mucus clearing in the throat, chronic cough, and asthma) are considered to be atypical manifestations and have a remarkably high prevalence in patients referred for GERD [19]. An interdisciplinary approach (gastroenterologist, otorhinolaryngologist, pneumologist, allergologist, psychologist, and foregut surgeon) is highly recommended to optimize the diagnostic pathway and management of these patients.

The majority of patients with suspected GERD who are refractory to PPIs need an extensive diagnostic assessment to document the presence of pathologic reflux, define the extent of anatomical and physiological derangement of the esophagogastric junction, and exclude other pathological conditions such as achalasia, eosinophilic esophagitis, rumination, and gastroparesis. In clinical practice, besides symptom evaluation with validated questionnaires such as the GERD-HRQL (Gastro-Esophageal Reflux Disease–Health-Related Quality of Life), appropriate testing should include esophagogram, esophageal manometry, and ambulatory pH/impedance monitoring. While the absence of esophagitis does not exclude GERD, the identification of a hiatus hernia can be associated with increased reflux burden. Conclusive evidence of GERD includes Los Angeles grades B, C, and D, esophagitis, total acid exposure time >6% to PPIs (in 24 h studies or ≥ 2 days wireless studies), or total acid exposure time 4–6% to PPIs with the addition of >80 reflux episodes and/or mean nocturnal baseline impedance <1500 Ohm in impedance monitoring [20]. Patients with extra-esophageal complaints and manifestations of GERD should be carefully investigated to determine the interplay between objective evidence of reflux, visceral hypersensitivity, and hypervigilance with abnormal symptom perception. Laryngopharyngeal reflux (LPR) is associated with non-specific symptoms and signs that should be assessed with validated patient-reported outcome questionnaires, such as the RSS (Reflux Symptom Score), and validated clinical instruments such as the RSA (Reflux Sign Assessment). However, these symptoms are not predictive of LPR objectively measured in a hypopharyngeal–esophageal multichannel intraluminal impedance–pH (HEMII-pH) study, due to the gaseous nature of most pharyngeal reflux events. While some alternative tests (e.g., salivary pepsin analysis and oropharyngeal pHmetry) have been developed, HEMII-pH monitoring is considered the gold standard test to demonstrate esophago-pharyngeal reflux events according to the IFOS consensus [21], whereas the Lyon 2.0 consensus and AGA experts still recommend 24 h esophageal multichannel intraluminal impedance–pH or 96 h esophageal wireless pH monitoring [20,22].

4. Rationale and Implementation of Surgical Therapy for GERD

Lifelong acid suppression therapy with PPIs is ineffective in up to 40% of GERD patients, may increase the risk of *Clostridium Difficile* infection, and inhibit the absorption of some medications and important nutrients [23]. Therefore, GERD is a chronic disease with a substantial load of refractory symptoms and a negative impact on worldwide healthcare resource utilization and patients' quality of life [24,25]. For the above reasons, it is quite surprising that laparoscopic antireflux surgery has not been fully adopted by the medical community or the public, predominantly due to bad publicity and fear of adverse outcomes. Despite its low morbidity and mortality rates, and very good long-term outcomes in

referral centers [26], surgery remains underused or restricted for patients with long-lasting symptoms, severe esophagitis, and/or large hiatal hernia [27,28]. As a consequence of the burden of PPI-refractory symptoms, a lack of referral to surgery consultation, and the reluctance of patients to undergo surgical therapy, a large therapy gap still exists, and antireflux surgery is actually applied in less than 1% of the patient population (Figure 1) [29,30]. The Nissen total fundoplication has long dominated the scenario of surgery and is still considered the most effective surgical technique for GERD [31]. However, observational and randomized clinical trials have demonstrated that the outcomes of partial fundoplications compare favorably with those of the Nissen in terms of symptom control, carry less risk of side effects, and may be adapted to the individual GERD phenotype [32]. The anatomical integrity of partial fundoplications may disappear over the follow-up, but this may be related to technical variability and surgical expertise [33]. For a surgeon to become competent and proficient, high-quality technological equipment and structured training under supervision in the simulation laboratory and operating room are necessary. In fact, laparoscopic fundoplication is a complex procedure that requires adherence to a core set of fundamental surgical principles, a structured training curriculum, and a well-defined learning curve [34].

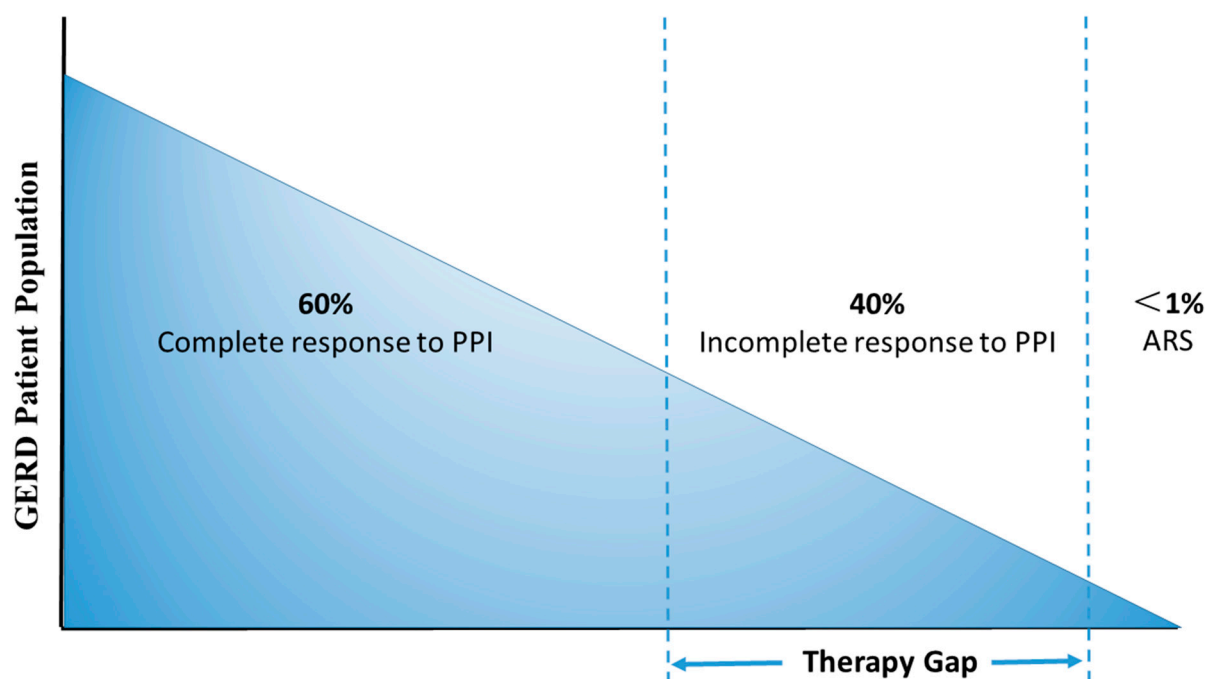


Figure 1. Exemplification of the concept of existing “therapy gap” between medical and surgical treatment of GERD. A large proportion of patients (40%) receive incomplete symptom relief from PPIs. Most of these patients are not referred for or refuse laparoscopic fundoplication, which may not be the ideal surgical procedure in early, uncomplicated disease. In real life, only a small proportion of patients (about 1%) undergo antireflux surgery (ARS).

A systematic review indicated that improved patient outcomes correlate with superior technical performance, and that a direct evaluation of technical skills is more effective than relying on surrogate outcome variables [35,36]. Additionally, the selection of surgical technique should be informed by the disease phenotype, involving shared decision-making with the patient for a personalized approach [37–39]. Common GERD symptoms, an abnormal 24 h DeMeester pH score of PPIs, and a favorable clinical response to acid suppression therapy with PPIs are reliable predictors of successful laparoscopic antireflux surgery [40]. Although the evidence level is low, carefully selected patients with persistent LPR symp-

toms may still gain advantages from antireflux surgery [41–45]. A flowchart approach to managing refractory GERD, reflecting the American College of Gastroenterology’s recommendations, is illustrated in Figure 2.

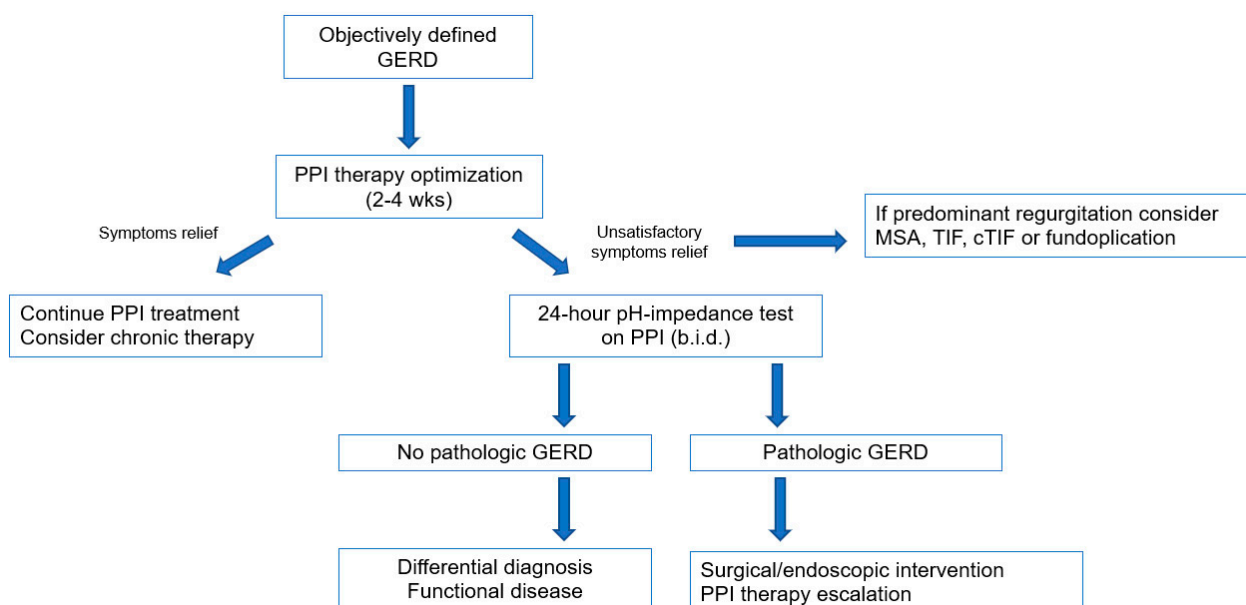


Figure 2. Management flowchart reflecting the current recommendations of the American College of Gastroenterology for the management of refractory GERD. Adapted from [46], Copyright 2022.

5. Innovative Surgical Therapies

Novel surgical procedures have been more recently devised as an alternative to both total and partial funduplications in an attempt to achieve a better trade-off between the control of reflux symptoms and the risk of serious side effects. These techniques are based on the use of prosthetic materials to augment the LES and increase the durability of the antireflux procedure over time. Discussing the potential pros and cons of any innovative surgical procedure with the patients is critical to calibrate expectations, reduce anxiety related to the implant of the foreign body material, reduce decision regret scores, and improve outcomes. Therefore, effective communication skills are required to personalize therapeutic strategies and align treatment decisions with the patient’s needs and expectations [47–49].

The Magnetic Sphincter Augmentation procedure (LINX™) was originally designed as a gastric-sparing operation not requiring division of the short gastric vessels and indicated in young patients with progressive GERD. The procedure is performed laparoscopically and consists of implanting a ring of magnets around the esophagogastric junction (Figure 3). In the absence of hiatal hernia, only a limited dissection with preservation of the phrenoesophageal ligament is necessary [50].

This procedure, particularly when combined with crural repair, effectively alleviates GERD symptoms and reduces the need for PPIs, normalizes esophageal acid exposure, and enhances patient-reported outcomes and quality of life [51]. A randomized clinical trial comparing LINX to PPIs demonstrated that LINX is superior in managing moderate to severe volume regurgitation and decreasing esophageal acid exposure [52]. However, contraindications for using high-power Tesla (>1.5 T) magnetic resonance imaging pose a potential limitation. The device can be laparoscopically removed if necessary, allowing for future fundoplication or other treatments. Instances of safety issues like device erosion or migration have been rare and not linked to mortality [53,54]. Follow-up data over twelve years from a single institution indicated a decrease in the GERD-HRQL score from 19.9 to 4.0, a drop in the prevalence of grade 2–4 regurgitation from 59.6% to 9.6%, and a

79% PPI discontinuation rate. The mean time pH < 4 was reduced from 9.7% to 4.2%. Four patients who underwent radiofrequency ablation for Barrett's without dysplasia prior to the implant showed normalized esophageal acid exposure after surgery, with up to eight years of follow-up revealing no recurrence of intestinal metaplasia. Favorable outcomes were predicted by age <40 years at intervention and a total GERD-HRQL score > 15 [55]. Patients must have adequate esophageal contractility to overcome the resistance posed by LINX and its fibrous capsule [56]. While pneumatic dilation is effective for about two-thirds of patients with ongoing postoperative dysphagia, device removal may be necessary in some [57]. It is advisable to identify manometric abnormalities preoperatively to assess patients at risk of persistent dysphagia. Sufficient peristaltic reserve following multiple rapid swallows was linked to a lower incidence of dysphagia after the LINX procedure [58]. In a multicenter study involving 210 patients, factors such as ineffective esophageal motility, age > 45 years, preoperative dysphagia, device size <15 beads, and <40% intact swallows on preoperative manometry were significant independent risk factors for postoperative endoscopic dilation or device removal. Patients needing removal had a distal contractile integral of <200 mmHg and <20% intact swallows [59].

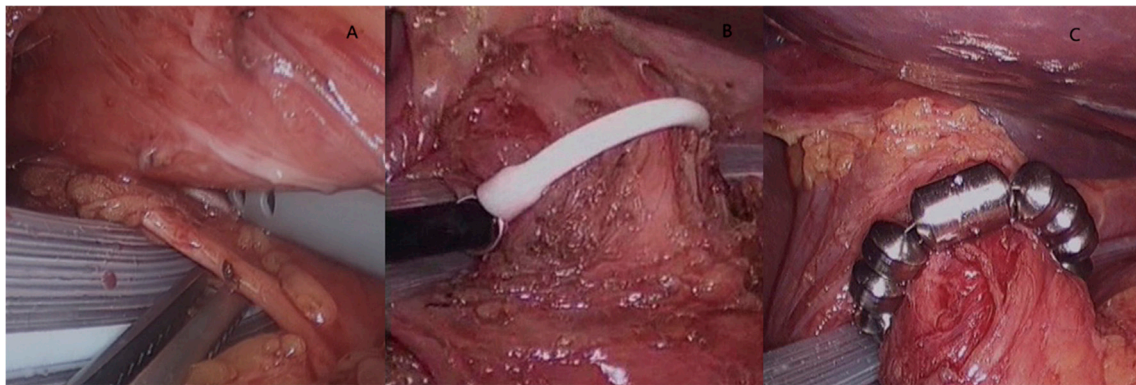


Figure 3. The LINX^R procedure. After excluding the posterior vagus nerve (A) and sizing the distal esophagus (B), the magnetic sphincter augmentation device is placed at the esophago-gastric junction (C). The magnetic force between the beads decreases upon swallowing to accommodate the bolus; in the resting position, the magnetic bonds of the device augment the resistance of the lower esophageal sphincter to prevent reflux.

The RefluxStopTM procedure was designed to stabilize the esophagogastric junction (EGJ) by laparoscopically implanting a small silicone device above the lower esophageal sphincter (LES) in a pocket of the anterior gastric fundus. Key technical steps for safe implantation include extensive esophageal dissection, cruroplasty, enhancing the angle of His, and creating an anterior fundoplication [60]. Adequate fundoplication and proper invagination of the prosthetic device require division of the short gastric vessels and the full mobilization of the posterior fundic wall. This procedure aims to stabilize the esophagogastric junction by preventing upward movement of the LES during swallowing, by keeping the angle of His in its anatomically correct position, and by restoring the gastroesophageal flap valve (Figure 4). Early to medium-term outcomes have demonstrated its safety and effectiveness. In a study of 50 consecutive patients, four-year results indicated no serious adverse events related to the device, a 93.1% reduction in the average GERD-HRQL score from baseline, and no significant dysphagia, with daily regurgitation improving by 97.9%. The mean total time with pH < 4 dropped from 16.35% to 0.80% [61]. The RefluxStop procedure has proven feasible, safe, and effective for patients with ineffective esophageal motility [62,63] and those with large hiatal hernias or prior failed antireflux surgeries [64].

It offers a favorable balance between reflux control and the risk of serious side effects, and is expected to undergo further evaluation in randomized clinical trials soon.

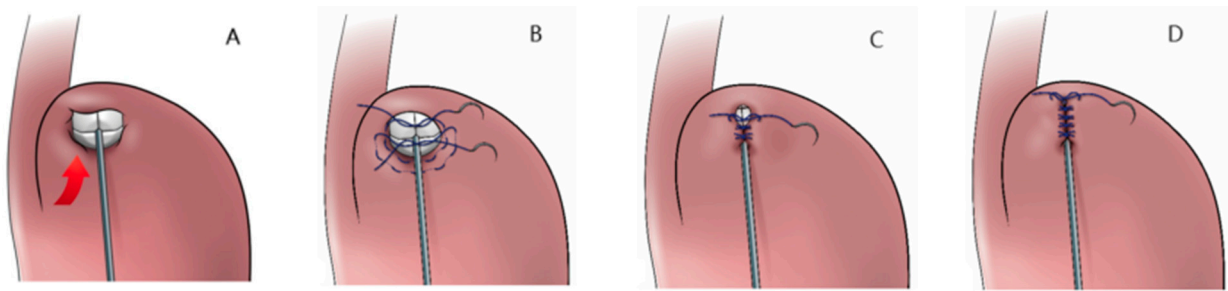


Figure 4. The RefluxStop[®] procedure. After an esophagofundopexy is performed to approximate the gastric fundus to the left side of the esophagus, an anterior 90° fundoplication is carried out to restore the angle of His and the gastroesophageal flap valve. Following these preliminary steps, the device is implanted within a gastric pocket on the cranial aspect of the fundus (A–D). This will hold the lower esophageal sphincter in a stable position below the diaphragm.

6. Impact of Surgical Innovation on the Healthcare System

Raising awareness of GERD and promoting a global educational campaign to avoid PPI overuse is key to reducing its individual, economic, and societal disease burden. In the future, healthcare is likely to shift towards prevention and early intervention for chronic conditions, and treatment options will be centered around the patient's preferences and self-defined quality of life [65]. Compared to lifelong acid suppression therapy with PPIs, laparoscopic surgery can treat the root cause of reflux by targeting the individual components of EGJ competence. Both the LINX and the RefluxStop procedures may represent a safe and effective replacement modality of the total Nissen fundoplication in selected patients with GERD. Therefore, it is necessary to increase awareness among all stakeholders, including primary care physicians, gastroenterologists, general surgeons, and patients, that surgical therapy is safe, effective, and constantly evolving. It is also important that scientific societies update their guidelines in line with real-world scientific evidence showing very encouraging data with the novel antireflux procedures [66]. Open dialog and collaboration among foregut gastroenterologists and surgeons can improve clinical care pathways and further promote research and innovation. This may help to reshape the GERD management paradigm and reduce the existing gap between medical and surgical treatments.

GERD represents a significant burden for the healthcare system in terms of absence from work due to illness, sleep disturbance, and other disease-specific adverse events. While the cost of pharmacological treatment is relatively constant over time, surgery requires an initial investment, but becomes less expensive over time [67,68]. From an economic perspective, the impact of introducing novel technologies has been evaluated using budget models to compare the current medical therapy for refractory GERD with future treatments, including a mix of patients treated with PPIs, laparoscopic Nissen fundoplication, or the LINX procedure. Assuming a hypothetical insurance population of 1 million members, the base case analysis over a 1-year time horizon estimated the net cost savings with the introduction of the novel device [69]. Studies from the UK, Sweden, and Switzerland using a Markov model and sensitivity analysis found that the RefluxStop procedure provided a high number of quality-adjusted life years and had a high likelihood of cost-effectiveness, with probabilities of 100% against PPI therapy and 93–96% against Nissen fundoplication [70–72]. The five-year budget impact of introducing RefluxStop in Italy was estimated according to international best practice recommendations. The results showed substantial clinical benefits, including avoidance of surgical failures,

reoperation, and endoscopic dilations, at the expense of a marginal budget increase in the annual spending on GERD treatment [73]. RefluxStop may be an effective alternative to laparoscopic fundoplication. It is clear that appropriate patient selection and surgical training are paramount in the adoption of novel surgical procedures to ensure the safety and effectiveness of the intervention [74].

Surgery has been substantially neglected in global health programs, as investments in non-communicable diseases are often expensive relative to other priorities, and yet millions of necessary surgical procedures per year go unmet due to lack of surgical access [75]. As for many chronic conditions, GERD is not included in the list of the Sustainable Development Goals recommended by the World Health Organization [76]. On the other hand, global health guidelines require the active participation and interaction of all stakeholders, including health policy-makers, and transparent partnerships with industry [77]. A hierarchical cascade approach was recommended by the World Gastroenterology Organization (WGO) in 2017 to provide context-sensitive and resource-sensitive options for GERD management on a global scale [78]. The WGO guidelines suggested that laparoscopic surgery is applicable in high-medium-resource countries, only in patients with hiatus hernia or “volume reflux causing regurgitation, aspiration, stricture, or persistent nocturnal symptoms despite PPI bid”. However, with these restrictive indications, modern antireflux surgery is negated in a large proportion of symptomatic patients who would otherwise benefit from a standardized and effective surgical procedure, which has the potential to improve patient-reported outcomes and quality of life. Given the current worldwide burden of GERD, a paradigm shift from lifelong medical therapy to minimally invasive surgical therapy appears necessary. Surgeons should play a more active role in the evaluation of new technologies by including patients in registries and clinical trials according to the principles of the IDEAL framework [79]. It is also important that surgeons work closely with epidemiologists, statisticians, economists, industry, colleagues from other specialties, and primary care physicians to assess the patients’ outcomes and the cost-effectiveness of the novel procedures. Finally, access to surgical care should be improved in low- and middle-income countries, and patients should benefit from novel and affordable technologies. We can even imagine a future scenario where telesurgery and artificial intelligence will play a role in assisting in or performing surgical interventions remotely in harmony with the core principles of equitable and patient-centered care [80].

7. Conclusions

Shared decision-making between physicians and patients is essential to individualize therapy and may significantly improve GERD outcomes. However, the global GERD burden requires a call to action for optimizing healthcare services, improving the quality of treatments, reducing variations in surgical practice, and breaking down geographical barriers. Modern laparoscopic surgery can eliminate PPI dependency and be cost-effective, but should be performed in centers offering a complete diagnostic pathway and personalized surgical care. With the appropriate use of new technologies and reduction in the cost of biomedical devices, healthcare barriers in the treatment of GERD can be further reduced to provide more tailored and equitable antireflux therapy.

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References

1. El-Serag, H.B.; Sweet, S.; Winchester, C.C.; Dent, J. Update on the epidemiology of gastro-oesophageal reflux disease: A systematic review. *Gut* **2014**, *63*, 871–880. [\[CrossRef\]](#)
2. Peery, A.F.; Crockett, S.D.; Barritt, A.S.; Dellon, E.S.; Eluri, S.; Gangarosa, L.M.; Jensen, E.T.; Lund, J.L.; Pasricha, S.; Runge, T.; et al. Burden of Gastrointestinal, Liver, and Pancreatic Diseases in the United States. *Gastroenterology* **2015**, *149*, 1731–1741.e3. [\[CrossRef\]](#)
3. Nirwan, J.S.; Hasan, S.S.; Babar, Z.-U.; Conway, B.R.; Ghori, M.U. Global Prevalence and Risk Factors of Gastro-oesophageal Reflux Disease (GORD): Systematic Review with Meta-analysis. *Sci. Rep.* **2020**, *10*, 5814. [\[CrossRef\]](#)
4. Dirac, M.A.; Safiri, S.; Tsoi, D.; Adedoyin, R.A.; Afshin, A.; Akhlaghi, N.; Alahdab, F.; Almulhim, A.M.; Amini, S.; Ausloos, F.; et al. The global, regional, and national burden of gastro-oesophageal reflux disease in 195 countries and territories, 1990–2017: A systematic analysis for the Global Burden of Disease Study 2017. *Lancet Gastroenterol. Hepatol.* **2020**, *5*, 561–581. [\[CrossRef\]](#)
5. Li, N.; Yang, W.-L.; Cai, M.-H.; Chen, X.; Zhao, R.; Li, M.-T.; Yan, X.-L.; Xue, L.-W.; Hong, L.; Tang, M.-Y. Burden of gastro-oesophageal reflux disease in 204 countries and territories, 1990–2019: A systematic analysis for the Global Burden of disease study 2019. *BMC Public Health* **2023**, *23*, 582. [\[CrossRef\]](#) [\[PubMed\]](#)
6. Delshad, S.D.; Almario, C.V.; Chey, W.D.; Spiegel, B.M. Prevalence of gastroesophageal reflux disease and proton pump inhibitor-refractory symptoms. *Gastroenterology* **2020**, *158*, 1250–1261.e2. [\[CrossRef\]](#) [\[PubMed\]](#)
7. Tack, J.; Becher, A.; Mulligan, C.; Johnson, D.A. Systematic review: The burden of disruptive gastro-esophageal reflux on health-related quality of life. *Aliment. Pharmacol. Ther.* **2012**, *35*, 1257–1266. [\[CrossRef\]](#)
8. Atkinson, M. Mechanisms protecting against gastroesophageal reflux. A review. *Gut* **1962**, *3*, 1–15. [\[CrossRef\]](#)
9. Nguyen, N.T.; Thosani, N.C.; Canto, M.I.; Chang, K.; Lipham, J.; Abu Dayyeh, B.; Wilson, E.B.; Muthusamy, V.R.; Clarke, J.; Bell, R.; et al. The American Foregut Society white paper on the endoscopic classification of the esophagogastric junction integrity. *Foregut* **2022**, *2*, 339–348. [\[CrossRef\]](#)
10. Kahrilas, P.J.; Kim, H.C.; Pandolfino, J.E. Approaches to the diagnosis and grading of hiatal hernia. *Best Pract. Res. Clin. Gastroenterol.* **2008**, *22*, 601–616. [\[CrossRef\]](#)
11. Milito, P.; Lombardi, M.; Asti, E.; Bonitta, G.; Fina, D.; Bandera, F.; Bonavina, L. Influence of large hiatus hernia on cardiac volumes. A prospective observational cohort study by cardiovascular magnetic resonance. *Int. J. Cardiol.* **2018**, *268*, 241–244. [\[CrossRef\]](#) [\[PubMed\]](#)
12. Labenz, J.; Chandrasoma, P.J.; Knapp, L.J.; DeMeester, T.R. Proposed approach to the challenging management of progressive gas-troesophageal reflux disease. *World J. Gastrointest. Endosc.* **2018**, *10*, 175–183. [\[CrossRef\]](#)
13. Inadomi, J.; Alastal, H.; Bonavina, L.; Gross, S.; Hunt, R.H.; Mashimo, H.; di Pietro, M.; Rhee, H.; Shah, M.; Tolone, S.; et al. Recent advances in Barrett’s esophagus. *Ann. N. Y. Acad. Sci.* **2018**, *1434*, 227–238. [\[CrossRef\]](#) [\[PubMed\]](#)
14. Lagergren, J.; Bergström, R.; Lindgren, A.; Nyrén, O. Symptomatic gastroesophageal reflux as a risk factor for esophageal adenocarcinoma. *N. Engl. J. Med.* **1999**, *340*, 825–831. [\[CrossRef\]](#)
15. Malfertheiner, P.; Nocon, M.; Vieth, M.; Stolte, M.; Jaspersen, D.; Koelz, H.R.; Labenz, J.; Leodolter, A.; Lind, T.; Richter, K.; et al. Evolution of gastro-oesophageal reflux disease over 5 years under routine medical care—The ProGERD study. *Aliment. Pharmacol. Ther.* **2012**, *35*, 154–164. [\[CrossRef\]](#) [\[PubMed\]](#)
16. Morgan, E.; Soerjomataram, I.; Rumgay, H.; Coleman, H.G.; Thrift, A.P.; Vignat, J.; Laversanne, M.; Ferlay, J.; Arnold, M. The Global Landscape of Esophageal Squamous Cell Carcinoma and Esophageal Adenocarcinoma Incidence and Mortality in 2020 and Projections to 2040: New Estimates From GLOBOCAN 2020. *Gastroenterology* **2022**, *163*, 649–658.e2. [\[CrossRef\]](#)
17. Dent, J.; Vakil, N.; Jones, R.; Bytzer, P.; Schöning, U.; Halling, K.; Junghard, O.; Lind, T. Accuracy of the diagnosis of GORD by questionnaire, physicians and a trial of proton pump inhibitor treatment: The diamond study. *Gut* **2010**, *59*, 714–721. [\[CrossRef\]](#)
18. Zagari, R.M.; Fuccio, L.; Wallander, M.-A.; Johansson, S.; Fiocca, R.; Casanova, S.; Farahmand, B.Y.; Winchester, C.C.; Roda, E.; Bazzoli, F. Gastro-oesophageal reflux symptoms, oesophagitis and Barrett’s esophagus in the general population: The Loiano-Monghidoro study. *Gut* **2008**, *57*, 1354–1359. [\[CrossRef\]](#)
19. Lechien, J.R. Personalized treatments based on laryngopharyngeal reflux patient profiles: A narrative review. *J. Pers. Med.* **2023**, *13*, 1567. [\[CrossRef\]](#)
20. Gyawali, C.P.; Yadlapati, R.; Fass, R.; Katzka, D.; Pandolfino, J.; Savarino, E.; Sifrim, D.; Spechler, S.; Zerbib, F.; Fox, M.R.; et al. Updates to the modern diagnosis of GERD: Lyon consensus 2.0. *Gut* **2024**, *73*, 361–371. [\[CrossRef\]](#)
21. Lechien, J.R.; Vaezi, M.F.; Chan, W.W.; Allen, J.E.; Karkos, P.D.; Saussez, S.; Altman, K.W.; Amin, M.R.; Ayad, T.; Barillari, M.R.; et al. The Dubai Definition and Diagnostic Criteria of Laryngopharyngeal Reflux: The IFOS Consensus. *Laryngoscope* **2024**, *134*, 1614–1624. [\[CrossRef\]](#) [\[PubMed\]](#)

22. Chen, J.W.; Vela, M.F.; Peterson, K.A.; Carlson, D.A. AGA Clinical Practice Update on the Diagnosis and Management of Extraesophageal Gastroesophageal Reflux Disease: Expert Review. *Clin. Gastroenterol. Hepatol.* **2023**, *21*, 1414–1421.e3. [[CrossRef](#)] [[PubMed](#)]
23. Hershcovici, T.; Fass, R. Management of gastroesophageal reflux disease that does not respond well to proton pump inhibitors. *Curr. Opin. Gastroenterol.* **2010**, *26*, 367–378. [[CrossRef](#)]
24. Sharma, P.; Falk, G.W.; Bhor, M.; Ozbay, A.B.; Latremouille-Viau, D.; Guerin, A.; Shi, S.; Elvekrog, M.M.; Limburg, P. Healthcare Resource Utilization and Costs Among Patients with Gastroesophageal Reflux Disease, Barrett’s Esophagus, and Barrett’s Esophagus-Related Neoplasia in the United States. *J. Health Econ. Outcomes Res.* **2023**, *10*, 51–58. [[CrossRef](#)] [[PubMed](#)]
25. Kamolz, T.; Pointner, R.; Velanovich, V. The impact of gastroesophageal reflux disease on quality of life. *Surg. Endosc.* **2003**, *17*, 1193–1199. [[CrossRef](#)]
26. Galmiche, J.-P.; Hatlebakk, J.; Attwood, S.; Ell, C.; Fiocca, R.; Eklund, S.; Långström, G.; Lind, T.; Lundell, L.; Collaborators, F.T.L.T. Laparoscopic antireflux surgery vs esomeprazole treatment for chronic GERD: The LOTUS randomized clinical trial. *JAMA* **2011**, *305*, 1969–1977. [[CrossRef](#)]
27. Vakil, N.; Shaw, M.; Kirby, R. Clinical effectiveness of laparoscopic fundoplication in a U.S. community. *Am. J. Med.* **2003**, *114*, 1–5. [[CrossRef](#)]
28. Richter, J.E.; Dempsey, D.T. Laparoscopic antireflux surgery: Key to success in the community setting. *Am. J. Gastroenterol.* **2008**, *103*, 289–291. [[CrossRef](#)]
29. Ganz, R.A. A Modern Magnetic Implant for Gastroesophageal Reflux Disease. *Clin. Gastroenterol. Hepatol.* **2017**, *15*, 1326–1337. [[CrossRef](#)]
30. Bonavina, L.; DeMeester, T.R.; Ganz, R.A. LINX (™) Reflux Management System: Magnetic sphincter augmentation in the treatment of gastroesophageal reflux disease. *Expert Rev. Gastroenterol. Hepatol.* **2012**, *6*, 667–674. [[CrossRef](#)]
31. Richter, J.E.; Kumar, A.; Lipka, S.; Miladinovic, B.; Velanovich, V. Efficacy of Laparoscopic Nissen Fundoplication vs Transoral Incisionless Fundoplication or Proton Pump Inhibitors in Patients with Gastroesophageal Reflux Disease: A Systematic Review and Network Meta-analysis. *Gastroenterology* **2018**, *154*, 1298–1308.e7. [[CrossRef](#)] [[PubMed](#)]
32. Analatos, A.; Håkanson, B.S.; Ansoorge, C.; Lindblad, M.; Lundell, L.; Thorell, A. Clinical Outcomes of a Laparoscopic Total vs a 270° Posterior Partial Fundoplication in Chronic Gastroesophageal Reflux Disease: A Randomized Clinical Trial. *JAMA Surg.* **2022**, *157*, 473–480. [[CrossRef](#)]
33. Bona, D.; Aiolfi, A.; Asti, E.; Bonavina, L. Laparoscopic Toupet fundoplication for gastroesophageal reflux disease and hiatus hernia: Proposal for standardization using the “critical view” concept. *Updat. Surg.* **2020**, *72*, 555–558. [[CrossRef](#)] [[PubMed](#)]
34. Watson, D.I.; Baigrie, R.J.; Jamieson, G.G. A learning curve for laparoscopic fundoplication. Definable, avoidable, or a waste of time? *Ann. Surg.* **1996**, *224*, 198–203. [[CrossRef](#)] [[PubMed](#)]
35. Satava, R.M.; Gallagher, A.G.; Pellegrini, C.A. Surgical competence and surgical proficiency: Definitions, taxonomy, and metrics. *J. Am. Coll. Surg.* **2003**, *196*, 933–937. [[CrossRef](#)]
36. Fecso, A.B.; Szasz, P.; Kerezov, G.; Grantcharov, T.P. The Effect of Technical Performance on Patient Outcomes in Surgery: A Systematic Review. *Ann. Surg.* **2017**, *265*, 492–501. [[CrossRef](#)]
37. Triadafilopoulos, G.; Clarke, J.O.; Hawn, M. Precision GERD management for the 21st century. *Dis. Esophagus* **2017**, *30*, 1–6. [[CrossRef](#)]
38. Katzka, D.A.; Pandolfino, J.E.; Kahrilas, P.J. Phenotypes of gastroesophageal reflux disease: Where Rome, Lyon, and Montreal meet. *Clin. Gastroenterol. Hepatol.* **2020**, *18*, 767–776. [[CrossRef](#)]
39. Yadlapati, R.; Gyawali, C.P.; Pandolfino, J.E.; CGIT GERD Consensus Conference Participants. AGA Clinical Practice Update on the Personalized Approach to the Evaluation and Management of GERD: Expert Review. *Clin. Gastroenterol. Hepatol.* **2022**, *20*, 984–994.e1. [[CrossRef](#)]
40. Campos, G.M.; Peters, J.H.; DeMeester, T.R.; Öberg, S.; Crookes, P.F.; Tan, S.; DeMeester, S.R.; Hagen, J.A.; Bremner, C.G. Multivariate analysis of factors predicting outcome after laparoscopic Nissen fundoplication. *J. Gastrointest. Surg.* **1999**, *3*, 292–300. [[CrossRef](#)]
41. Lechien, J.R.; Dapri, G.; Dequanter, D.; Ruiz, A.R.; Marechal, M.-T.; De Marrez, L.G.; Saussez, S.; Fisichella, P.M. Surgical Treatment for Laryngopharyngeal Reflux Disease: A Systematic Review. *JAMA Otolaryngol. Head Neck Surg.* **2019**, *145*, 655–666. [[CrossRef](#)]
42. Hessler, L.K.; Xu, Y.; Shada, A.L.; Johnson, M.K.; Funk, L.M.; Greenberg, J.A.; Lidor, A.O. Antireflux surgery leads to durable improvement in laryngopharyngeal reflux symptoms. *Surg. Endosc.* **2022**, *36*, 778–786. [[CrossRef](#)] [[PubMed](#)]
43. Ward, M.A.; Ebrahim, A.; Kopita, J.; Arviso, L.; Ogola, G.O.; Buckmaster, B.; Leeds, S.G. Magnetic sphincter augmentation is an effective treatment for atypical symptoms caused by gastroesophageal reflux disease. *Surg. Endosc.* **2020**, *34*, 4909–4915. [[CrossRef](#)] [[PubMed](#)]
44. Nikolic, M.; Matic, A.; Feka, J.; Gensthaler, L.; Kristo, I.; Osmokrovic, B.; Riegler, F.M.; Mosleh, B.O.; Schoppmann, S.F. Expanded Indication for Magnetic Sphincter Augmentation: Outcomes in Weakly Acidic Reflux Compared to Standard GERD Patients. *J. Gastrointest. Surg.* **2022**, *26*, 532–541. [[CrossRef](#)]

45. Salgado, S.; Borges, L.F.; Cai, J.X.; Lo, W.-K.; Carroll, T.L.; Chan, W.W. Symptoms classically attributed to laryngopharyngeal reflux correlate poorly with pharyngeal reflux events on multichannel intraluminal impedance testing. *Dis. Esophagus* **2022**, *36*, doac041. [\[CrossRef\]](#)
46. Katz, P.O.; Dunbar, K.B.; Schnoll-Sussman, F.H.; Greer, K.B.; Yadlapati, R.; Spechler, S.J. ACG Clinical Guideline for the Diagnosis and Management of Gastroesophageal Reflux Disease. *Am. J. Gastroenterol.* **2022**, *117*, 27–56. [\[CrossRef\]](#) [\[PubMed\]](#)
47. Schwarze, M.L.; Kruser, J.M.; Clapp, J.T. Innovations in Surgical Communication 2—Focus on the Goals of Surgery. *JAMA Surg.* **2023**, *158*, 994–996. [\[CrossRef\]](#)
48. Brera, A.S.; Arrigoni, C.; Magon, A.; Conte, G.; Belloni, S.; Bonavina, L.; Shabat, G.; Arcidiacono, M.A.; Pasek, M.; Caruso, R. A scoping review of decision regret in non-communicable diseases: The emerging roles of patient-clinician communication, psychological aspects, and medical outcomes. *Patient Educ. Couns.* **2025**, *130*, 108478. [\[CrossRef\]](#)
49. Remulla, D.; Maskal, S.M.; Ellis, R.C.; Woo, K.P.; Bennet, W.C.; Fafaj, A.; Navarrete, S.; Krpata, D.M.; Miller, B.T.; Petro, C.C.; et al. Patient reported outcomes and decision regret scores in redo-paraesophageal hernia repair. *Surg. Endosc.* **2025**, *39*, 850–858. [\[CrossRef\]](#)
50. Bonavina, L.; DeMeester, T.; Fockens, P.; Dunn, D.; Saino, G.; Bona, D.; Lipham, J.; Bemelman, W.; Ganz, R.A. Laparoscopic Sphincter Augmentation Device Eliminates Reflux Symptoms and Normalizes Esophageal Acid Exposure One- and 2-Year Results of a Feasibility Trial. *Ann. Surg.* **2010**, *252*, 857–862. [\[CrossRef\]](#)
51. Froiio, C.; Tareq, A.; Riggio, V.; Siboni, S.; Bonavina, L. Real-world evidence with magnetic sphincter augmentation for gastroesophageal reflux disease: A scoping review. *Eur. Surg.* **2023**, *55*, 8–19. [\[CrossRef\]](#)
52. Bell, R.; Lipham, J.; Louie, B.E.; Williams, V.; Luketich, J.; Hill, M.; Richards, W.; Dunst, C.; Lister, D.; McDowell-Jacobs, L.; et al. Magnetic Sphincter Augmentation Superior to Proton Pump Inhibitors for Regurgitation in a 1-Year Randomized Trial. *Clin. Gastroenterol. Hepatol.* **2020**, *18*, 1736–1743.e2. [\[CrossRef\]](#)
53. Lipham, J.C.; Taiganides, P.A.; Louie, B.E.; Ganz, R.A.; DeMeester, T.R. Safety analysis of first 1000 patients treated with magnetic sphincter augmentation for gastroesophageal reflux disease. *Dis. Esophagus* **2015**, *28*, 305–311. [\[CrossRef\]](#) [\[PubMed\]](#)
54. Froiio, C.; Aiolfi, A.; Bona, D.; Bonavina, L. Safety profile of magnetic sphincter augmentation for gastroesophageal reflux disease. *Front. Surg.* **2023**, *10*, 1293270. [\[CrossRef\]](#) [\[PubMed\]](#)
55. Ferrari, D.; Asti, E.; Lazzari, V.; Siboni, S.; Bernardi, D.; Bonavina, L. Six to 12-year outcomes of magnetic sphincter augmentation for gastroesophageal reflux disease. *Sci. Rep.* **2020**, *10*, 13753. [\[CrossRef\]](#) [\[PubMed\]](#)
56. Ayazi, S.; Schwameis, K.; Zheng, P.; Newhams, K.; Myers, B.M.; Grubic, A.D.D.; Hoppe, T.; Jobe, B.A. The Impact of Magnetic Sphincter Augmentation (MSA) on Esophagogastric Junction (EGJ) and Esophageal Body Physiology and Manometric Characteristics. *Ann. Surg.* **2023**, *277*, e545–e551. [\[CrossRef\]](#)
57. Fletcher, R.; Dunst, C.M.; Abdelmoaty, W.F.; Alicuben, E.T.; Shemmeri, E.; Parker, B.; Müller, D.; Sharata, A.M.; Reavis, K.M.; Bradley, D.D.; et al. Safety and efficacy of magnetic sphincter augmentation dilation. *Surg. Endosc.* **2021**, *35*, 3861–3864. [\[CrossRef\]](#)
58. Dominguez-Profeta, R.; Cheverie, J.N.; Blitzer, R.R.; Lee, A.M.; McClain, L.; Broderick, R.C.; Sandler, B.J.; Jacobsen, G.R.; Horgan, S.; Kunkel, D.C. More beads, more peristaltic reserve, better outcomes: Factors predicting postoperative dysphagia after magnetic sphincter augmentation. *Surg. Endosc.* **2021**, *35*, 5295–5302. [\[CrossRef\]](#)
59. Baison, G.N.; Jackson, A.S.; Wilshire, C.L.; Bell, R.C.W.; Lazzari, V.; Bonavina, L.; Ayazi, S.; Jobe, B.A.; Schoppmann, S.F.; Dunn, C.P.; et al. The Impact of Ineffective Esophageal Motility on Patients Undergoing Magnetic Sphincter Augmentation. *Ann. Surg.* **2023**, *277*, e793–e800. [\[CrossRef\]](#)
60. Bjelović, M.; Harsányi, L.; Altorjay, Á.; Kincses, Z.; Forsell, P. Non-active implantable device treating acid reflux with a new dynamic treatment approach: 1-year results: RefluxStop™ device; A new method in acid reflux surgery obtaining CE mark. *BMC Surg.* **2020**, *20*, 159. [\[CrossRef\]](#) [\[PubMed\]](#) [\[PubMed Central\]](#)
61. Harsányi, L.; Kincses, Z.; Zehetner, J.; Altorjay, Á. Treating acid reflux without compressing the food passageway: 4-year safety and clinical outcomes with the RefluxStop device in a prospective multicenter study. *Surg. Endosc.* **2024**, *38*, 6060–6069. [\[CrossRef\]](#)
62. Feka, J.; Saad, M.; Boyle, N.; Paireder, M.; Kristo, I.; Rieder, E.; Asari, R.; Schoppmann, S.F. Multicentric short term and safety study of ineffective esophageal esophageal motility patients treated with RefluxStop device. *Sci. Rep.* **2024**, *14*, 15425. [\[CrossRef\]](#)
63. Fringeli, Y.; Linas, I.; Kessler, U.; Zehetner, J. Short-term results of laparoscopic anti-reflux surgery with the RefluxStop device in patients with gastroesophageal disease and ineffective esophageal motility. *Langenbeck's Arch. Surg.* **2024**, *409*, 78. [\[CrossRef\]](#) [\[PubMed\]](#)
64. Lehmann, T.; Šimkus, M.; Oehler, C. A retrospective study assessing RefluxStop surgery for gastroesophageal reflux disease: Clinical outcomes in 79 patients from Germany. *Surg. Open Sci.* **2025**, *23*, 9–15. [\[CrossRef\]](#) [\[PubMed\]](#)
65. Future of Surgery Report. Available online: <http://futureofsurgery.rcseng.ac.uk> (accessed on 1 March 2025).
66. Vassaur, H.; Martelli, P.; Castagneto-Gissey, L. Inter-specialty collaboration in the formalization of a new foregut subspecialty. *PLoS ONE* **2021**, *16*, e0262019. [\[CrossRef\]](#)
67. Epstein, D.; Bojke, L.; Sculpher, M.J. The REFLUX trial group Laparoscopic fundoplication compared with medical management for gastro-oesophageal reflux disease: Cost effectiveness study. *BMJ* **2009**, *339*, b2576. [\[CrossRef\]](#) [\[PubMed\]](#)

68. Toghanian, S.; Wahlqvist, P.; Johnson, D.A.; Bolge, S.C.; Liljas, B. The burden of disrupting gastro-oesophageal reflux disease: A database study in US and European cohorts. *Clin. Drug Investig.* **2010**, *30*, 167–178. [[CrossRef](#)]
69. Pandolfino, J.; Lipham, J.; Chawla, A.; Ferko, N.; Hogan, A.; Qadeer, R.A. A budget impact analysis of a magnetic sphincter augmentation device for the treatment of medication-refractory mechanical gastroesophageal reflux disease: A United States payer perspective. *Surg. Endosc.* **2020**, *34*, 1561–1572. [[CrossRef](#)]
70. Harper, S.; Grodzicki, L.; Mealing, S.; Gemmill, L.; Goldsmith, P.J.; Ahmed, A.R. Cost-effectiveness of a novel, non-active implantable device as a treatment for refractory gastro-esophageal reflux disease. *J. Med. Econ.* **2023**, *26*, 603–613. [[CrossRef](#)] [[PubMed](#)]
71. Harper, S.; Kartha, M.; Mealing, S.; Lundell, L. A cost-effectiveness analysis of RefluxStop against relevant therapeutic alternatives for chronic gastroesophageal reflux disease in Sweden. *Expert Rev. Pharmacoecon. Outcomes Res.* **2024**, *25*, 353–365. [[CrossRef](#)]
72. Harper, S.; Kartha, M.; Mealing, S.; Borbély, Y.M.; Zehetner, J. Cost-effectiveness of the RefluxStop device for management of refractory gastroesophageal reflux disease in Switzerland. *J. Med. Econ.* **2024**, *27*, 805–815. [[CrossRef](#)] [[PubMed](#)]
73. Harper, S.; Kartha, M.; Mealing, S.; Pavanello, M.; Bonavina, L. The Economic Impact of Introducing RefluxStop for Refractory Gastroesophageal Reflux Disease on the Italian Healthcare System. *Pharmacoecon. Open* **2024**, *8*, 935–943. [[CrossRef](#)] [[PubMed](#)]
74. Yadlapati, R.; Dakhoul, L.; Pandolfino, J.E.; Keswani, R.N. The quality of care for gastroesophageal reflux disease. *Dig. Dis. Sci.* **2017**, *62*, 569–576. [[CrossRef](#)] [[PubMed](#)]
75. Kamarajah, S.; Ademuyiwa, A.O.; Atun, R.; Cieza, A.; Agyei, F.; Ghosh, D.; Henry, J.C.A.; Lawani, S.; Meara, J.; Morton, B.; et al. Health systems strengthening through surgical and perioperative care pathways: A changing paradigm. *BMJ Glob. Health* **2024**, *9*, e015058. [[CrossRef](#)]
76. Roa, L.; Jumbam, D.T.; Makasa, E.; Meara, J.G. Global surgery and the sustainable development goals. *Br. J. Surg.* **2019**, *106*, e44–e52. [[CrossRef](#)]
77. Hunt, R.; Armstrong, D.; Katelaris, P.; Afihene, M.; Bane, A.; Bhatia, S.; Chen, M.-H.; Choi, M.G.; Melo, A.C.; Fock, K.M.; et al. World Gastroenterology Organisation Global Guidelines: GERD Global Perspective on Gastroesophageal Reflux Disease. *J. Clin. Gastroenterol.* **2017**, *51*, 467–478. [[CrossRef](#)]
78. Fried, M.; Quigley, E.; Hunt, R.; Guyatt, G.; Anderson, B.; Bjorkman, D.; Farthing, M.; Fedail, S.; Green-Thompson, R.; Hampton, J.; et al. Can global guidelines change health policy? *Nat. Clin. Pract. Gastroenterol. Hepatol.* **2008**, *5*, 120–121. [[CrossRef](#)]
79. Hirst, A.M.; Philippou, Y.M.; Blazeby, J.; Campbell, B.; Campbell, M.; Feinberg, J.; Rovers, M.; Blencowe, N.; Pennell, C.; Quinn, T.M.; et al. No Surgical Innovation Without Evaluation: Evolution and Further Development of the IDEAL Framework and Recommendations. *Ann. Surg.* **2019**, *269*, 211–220. [[CrossRef](#)]
80. Patel, V.; Saikali, S.; Moschovas, M.C.; Patel, E.; Satava, R.; Dasgupta, P.; Dohler, M.; Collins, J.W.; Albala, D.; Marescaux, J. Technical and ethical considerations in telesurgery. *J. Robot. Surg.* **2024**, *18*, 40. [[CrossRef](#)]

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