ENDOSCOPIC TREATMENTS FOR GERD

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TREATMENTS OF GERD

-Lifestyle modification

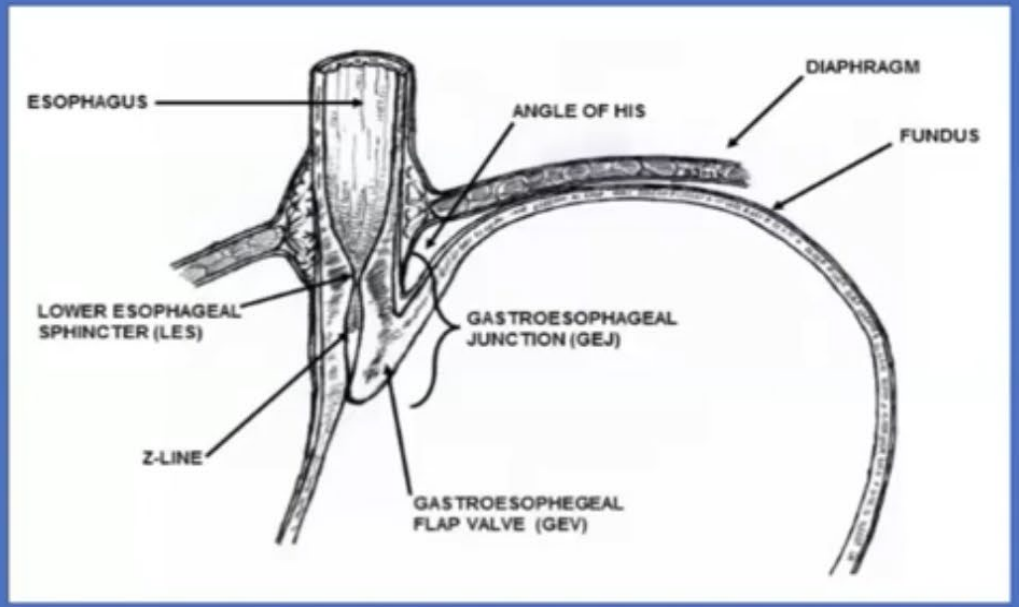
-Medical management (PPI,Prokinetics,…)

-Surgical methods

-Endoscopic methods

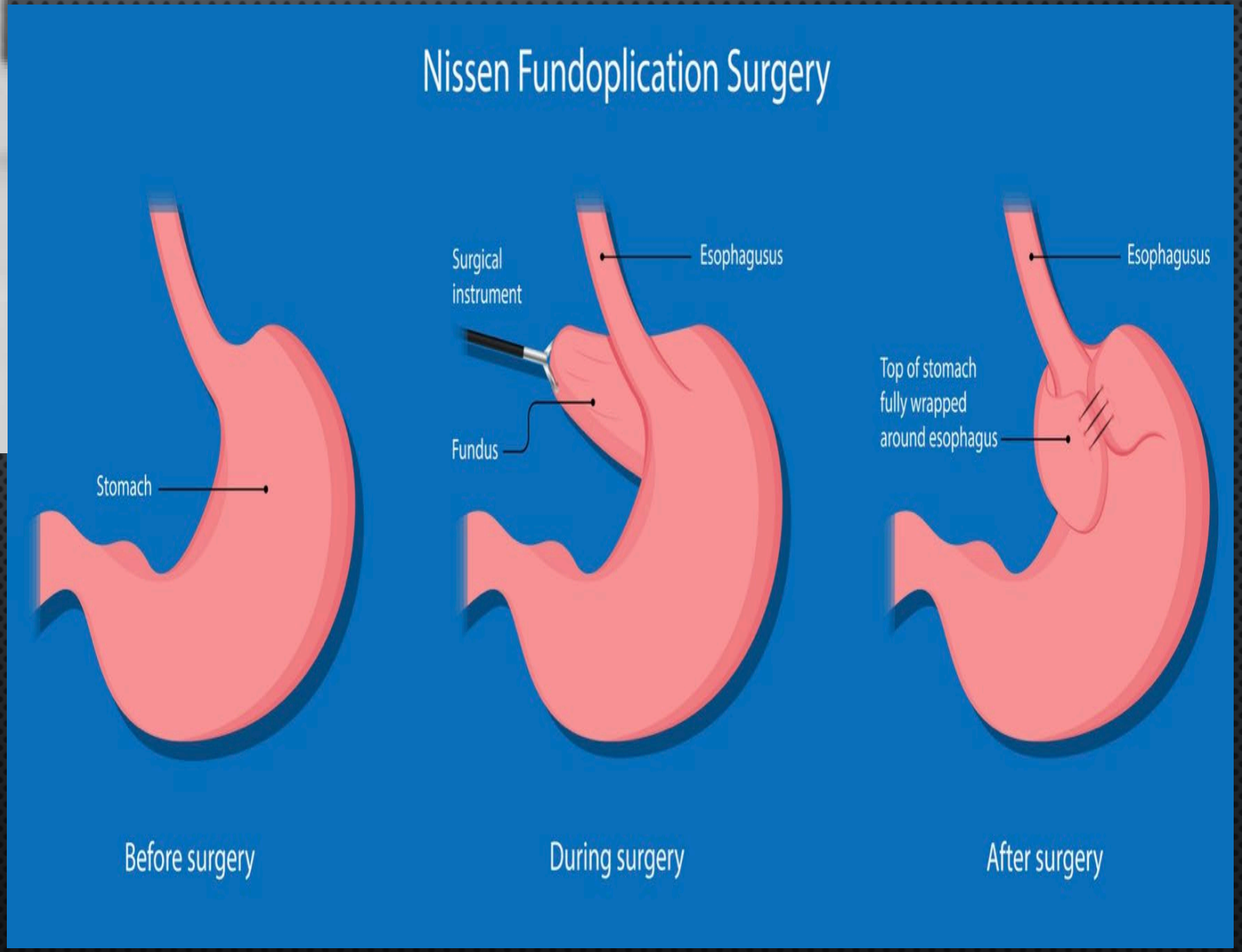
GERD

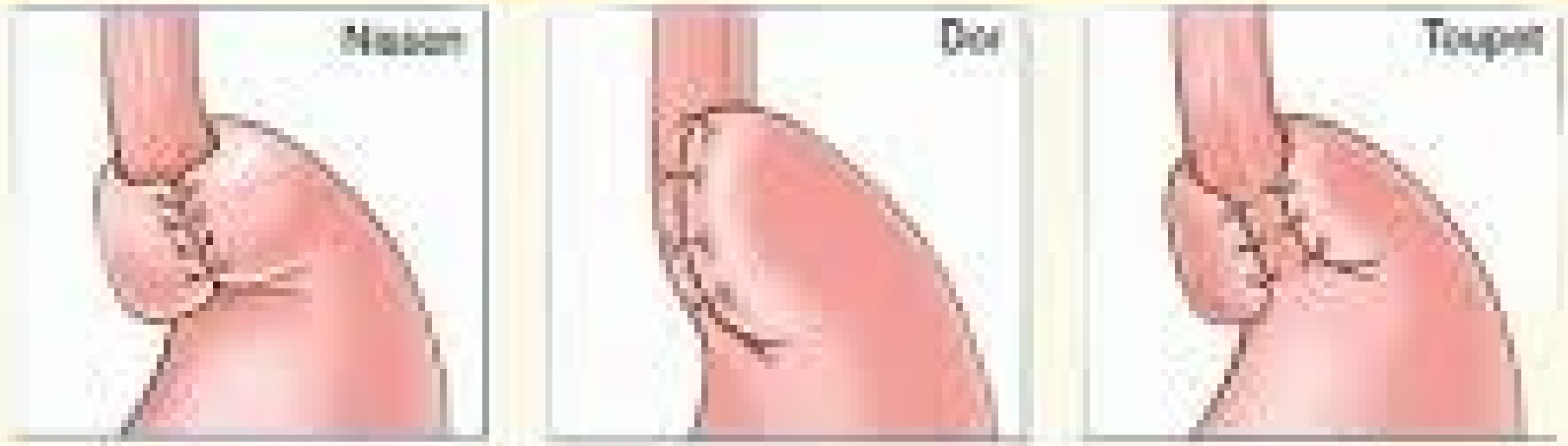
Normal anti-reflux mechanism in humans



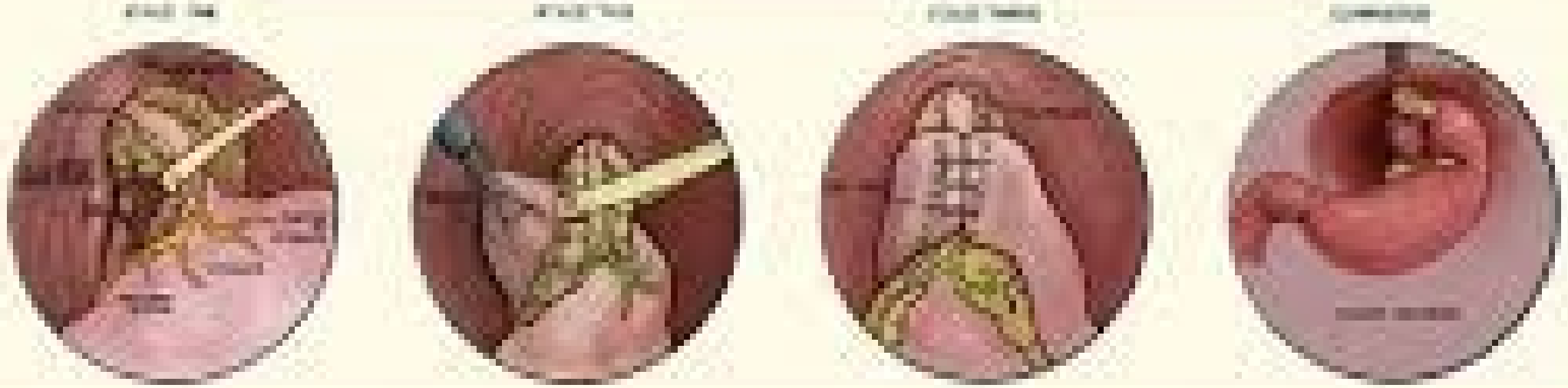
1. Lower esophageal sphincter (LES) – Basal LES pressure
2. Pinch cock action of the diaphragmatic crura
3. Angle of 'HIS'
4. Gastroesophageal flap valve
5. Postero-lateral location of gastric fundus
6. Motility of the esophagus / 7. Gastric emptying




Nissen Fundoplication Surgery
Stomach
Surgical instrument
Esophagusus
Fundus
Top of stomach fully wrapped around esophagus
Esophagusus
Before surgery
During surgery
After surgery



Fundoplication



Indications for Endoscopic Therapy

- Failed medical management
- Intolerance of or noncompliance with medical therapy
- Complications of GERD
- Volume regurgitation
- Nongastrointestinal indications

PRE-PROCEDURE EVALUATION

- Endoscopy
- PH Testing + MII
- Manometry



GERD

Altered mechanism at the esophago-gastric junction



Lax cardia







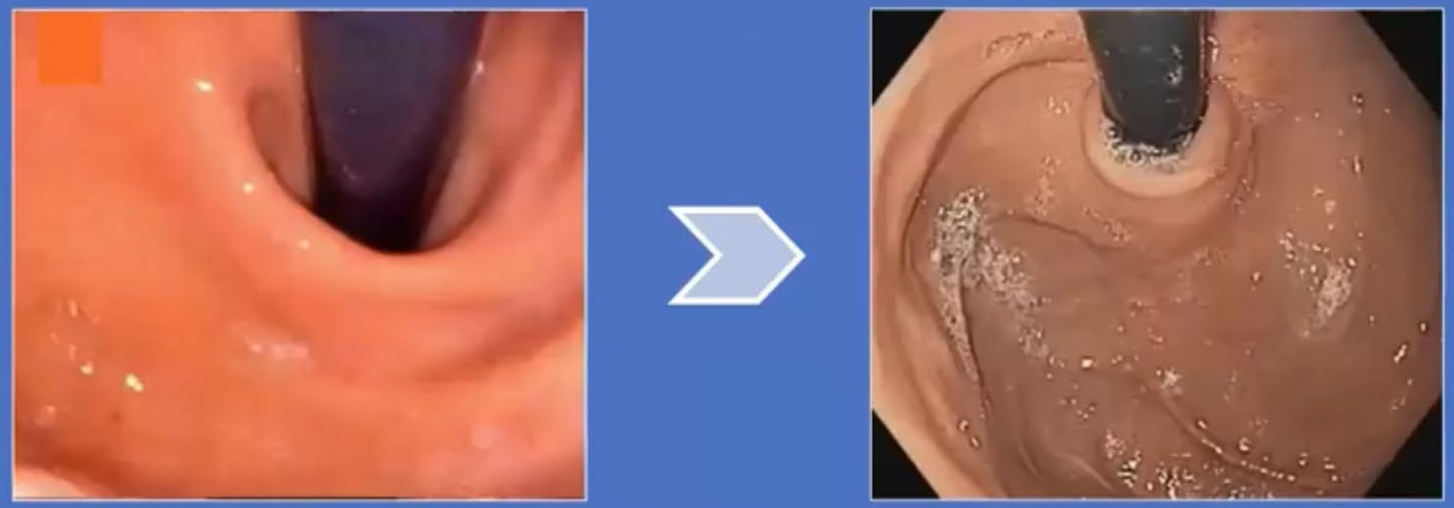
Hiatus hernia

Normal crural sphincter / Reduced LES pressure
Absent angle of HIS

Wide open crural sphincter / Normal LES pressure
Absent angle of HIS / Altered position of stomach fundus

GERD – Endotherapy

Augmentation of LES & remodeling of GE flap valve



LES augmentation

Stretta device (Radio frequency)

Remodeling of the GE flap valve

Transoral fundoplication (EsophyX device by EndoGastric solutions)

MUSE (Endoscopic stapling device – Medigus)

ARMS – Anti reflux mucosectomy / ARMA – Anti reflux mucosal ablation

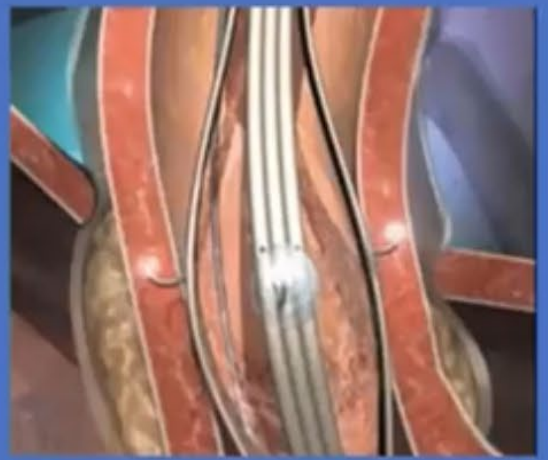
Endoscopic full thickness plication (GERDx – Stapling device by G-SURG)

‘ STRETTA ’

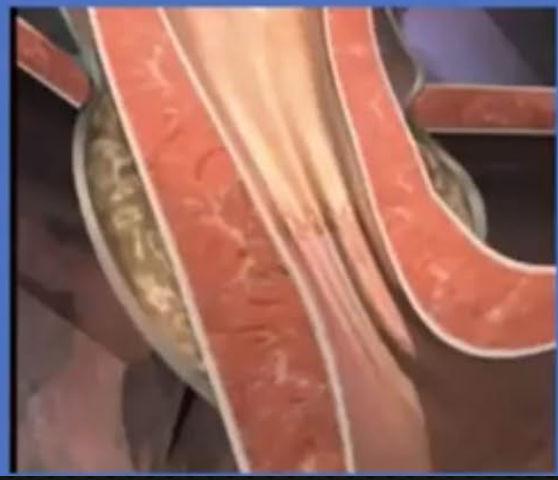
Augmenting the lower esophageal sphincter

The concept









‘ STRETTA ’

Metanalysis

4 RCT’s, 23 cohort studies, 1 Registry

2468 patients

RESULTS

Mean follow-up 28 months

Improvement in health quality score

Reduction in pooled heartburn standardized score

PPI stoppage ~ 51% patients

Reduction in erosive esophagitis ~ 25%

‘ EFTP ’

Endoscopic full thickness plication using the GERDx device

First study in humans





Clinical feasibility of a new full-thickness endoscopic plication device (GERDx™) for patients with GERD: results of a prospective trial

Michael Weitzendorfe [1,4] · Klaus Emmanuel[1] · Oliver O. Koch[1]

Surgical Endoscopy (2018) 32:2541–2549
https://doi.org/10.1007/s00464-018-6153-9

‘ ARMS ’

Anti-reflux mucosectomy

Pilot study in humans



Annals of Gastroenterology

Ann Gastroenterol. 2014; 27(4): 346–351. PMCID: PMC4188931

Anti-reflux mucosectomy for gastroesophageal reflux disease in the absence of hiatus hernia: a pilot study

‘ ARMS ’

Anti-reflux mucosectomy – The concept



Enhancing the gastroesophageal flap valve





Mucosectomy on lesser curvature of the stomach

Healing by secondary intention

Scarring – Tightening of LES / Enhanced angle of HIS

‘ ARMA ’

Anti-reflux mucosal ablation

First study in humans



Original article

Inoue Haruhiro et al. Anti-reflux mucosal ablation … Endoscopy International Open 2020; 08: E133–E138

Thieme

Anti-reflux mucosal ablation (ARMA) as a new treatment for gastroesophageal reflux refractory to proton pump inhibitors: a pilot study*

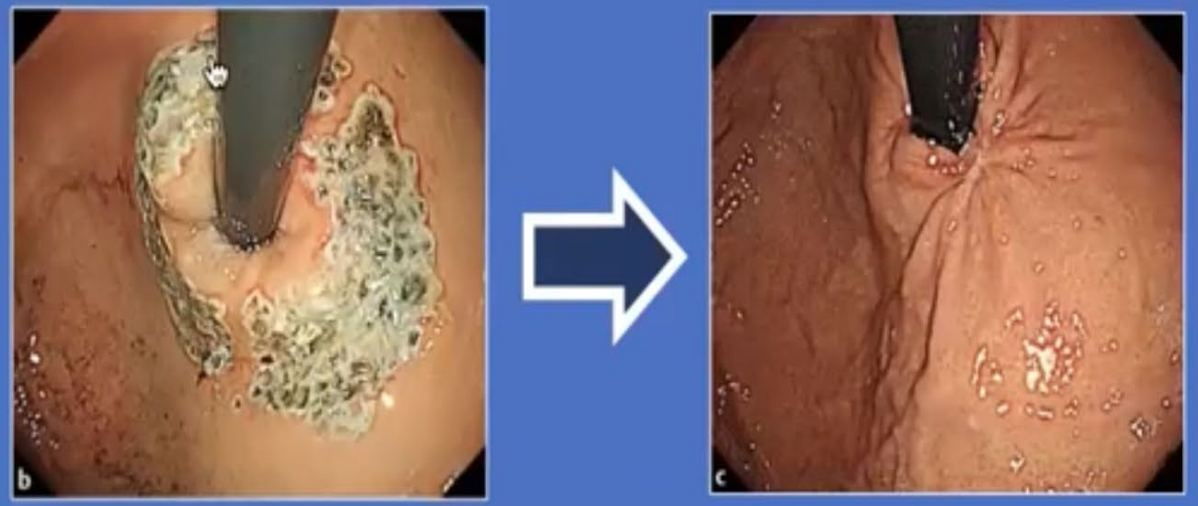
Haruhiro Inoue[1], Mayo Tanabe[1], Enrique Rodríguez de Santiago[1,2], Mary Raina Angeli Abad[1], Yuto Shimamura[1], Yusuke Fujiyoshi[1], Akiko Ueno[1], Kazuya Sumi[1], Hideomi Tomida[1], Yugo Iwaya[1], Haruo Ikeda[1], Manabu Onimaru[1]

OPEN ACCESS

Enhancing the gastroesophageal flap valve







Deep mucosal ablation on lesser curvature of the stomach

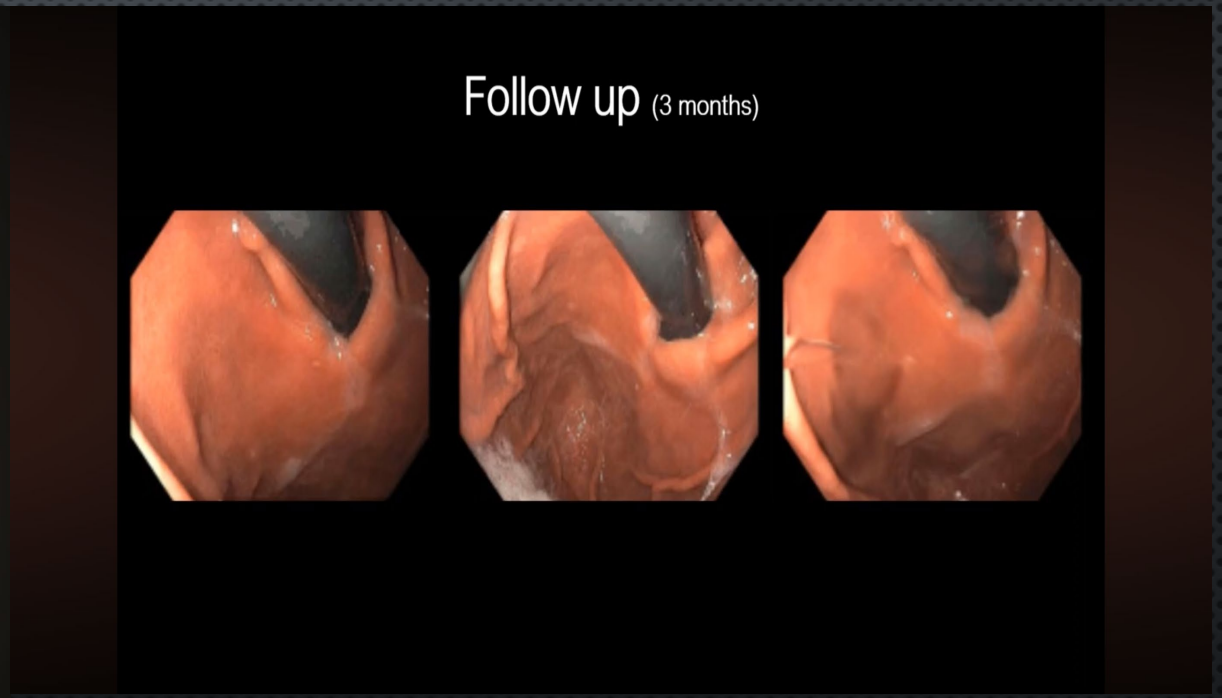
Healing by secondary intention

Scarring – Tightening of LES / Enhanced angle of HIS


8th TUGSS Endoscopy meeting | Endoscopic therapy for GERD
TUGS Upper GI Surgeons
'ARMA'
Anti-reflux mucosectomy – The technique
31:22 / 59:34 · Anti-reflux mucosal ablation ARMA ›
Mor
Tap or swip

Anti-Reflux Band Mucosectomy





3 systematic reviews and meta-analysis concluded that ARMS/ARMA is a safe and effective treatment for GERD.

Antireflux mucosectomy (ARMS) and antireflux mucosal ablation (ARMA) for gastroesophageal reflux disease: a systematic review and meta-analysis

Enrique Rodríguez de Santiago[*,1], Carlos Teruel Sanchez-Vegazo[*,1], Beatriz Peñas[1], Yuto Shimamura[2], Mayo Tanabe[2], Noelia Álvarez-Díaz[3], Sofía Parejo[1], Sumi Kazuya[2], Natalia Marcos-Carrasco[1], Enrique Vazquez-Sequeiros[1], Haruhiro Inoue[2], Agustín Albillos[1]

Endosc Int Open 2021; 69: E1740-51
From Spain, Japan

Anti-reflux mucosectomy for refractory gastroesophageal reflux disease: a systematic review and meta-analysis*

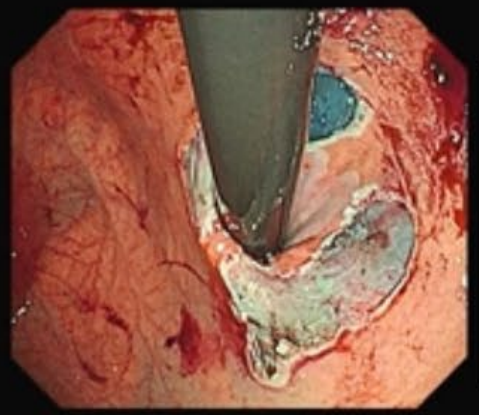
Authors
Rajat Garg[*,1], Abdul Mohammed[*,2], Amandeep Singh[1], Mary Schleicher[3], Prashanthi N. Thota[1], Tarun Rustagi[4], Madhusudhan R Sanaka[1]

Endosc Int Open 2022; 10: E854-64
From Cleveland clinic, USA

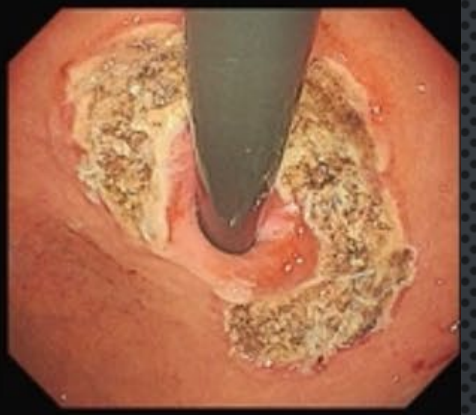
Antireflux mucosal intervention (ARMI) procedures for refractory gastroesophageal reflux disease: a systematic review and meta-analysis

Jen-Hao Yeh, Ching-Tai Lee, Min-Hung Hsu, Chi-Wen Lin, Po-Jen Hsiao, Chien-Lin Chen and Wen-Lun Wang

Ther Adv Gastroenterol 2022; 15: 1-12
From Taiwan



- ✓ It takes approximately 1 month to achieve complete scar formation.
- ✓ 5.4% risk of bleeding after the procedure.

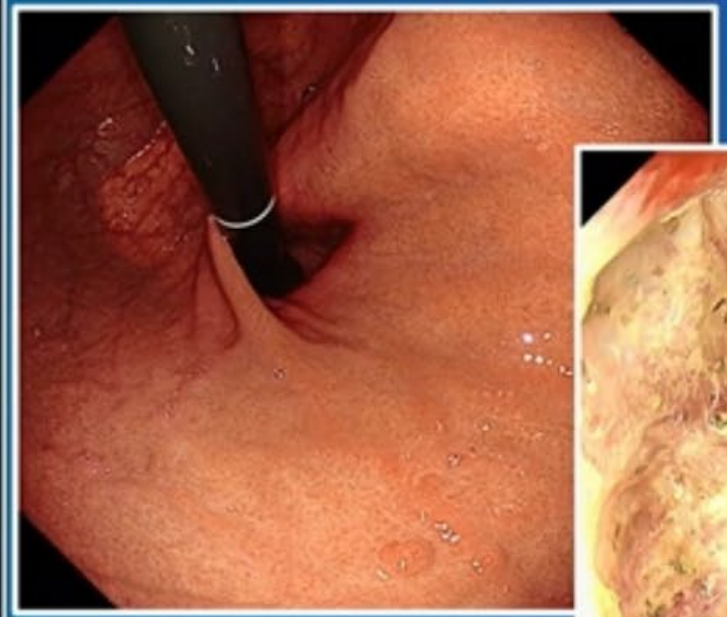


How can we solve these remaining issues?

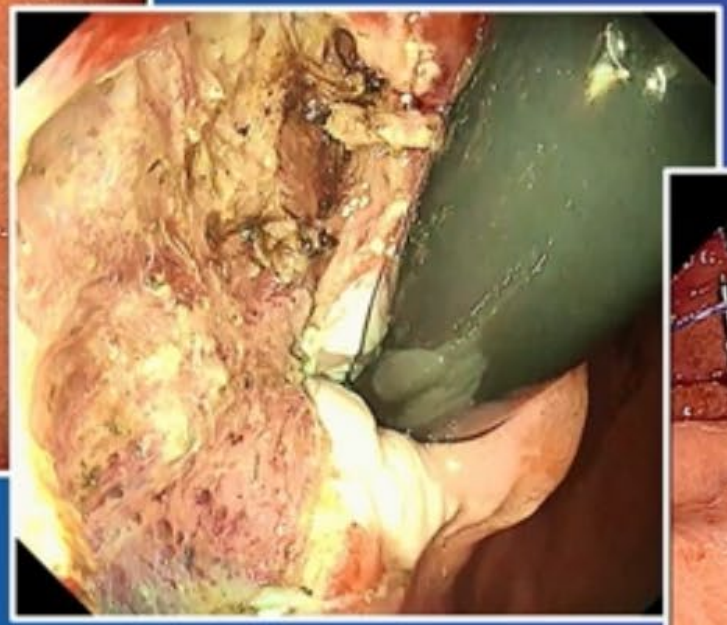
Anti-reflux mucoplasty (ARM-P)

ARM-P: Anti-Reflux Mucoplasty

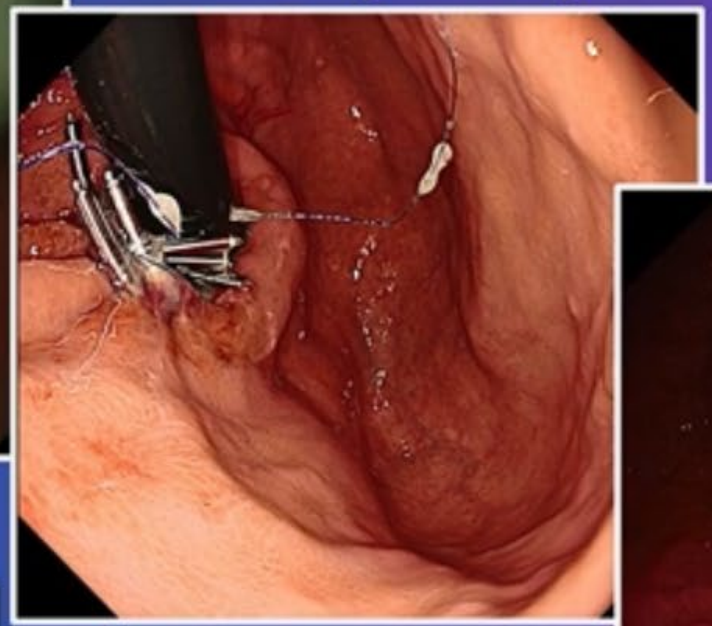
Before



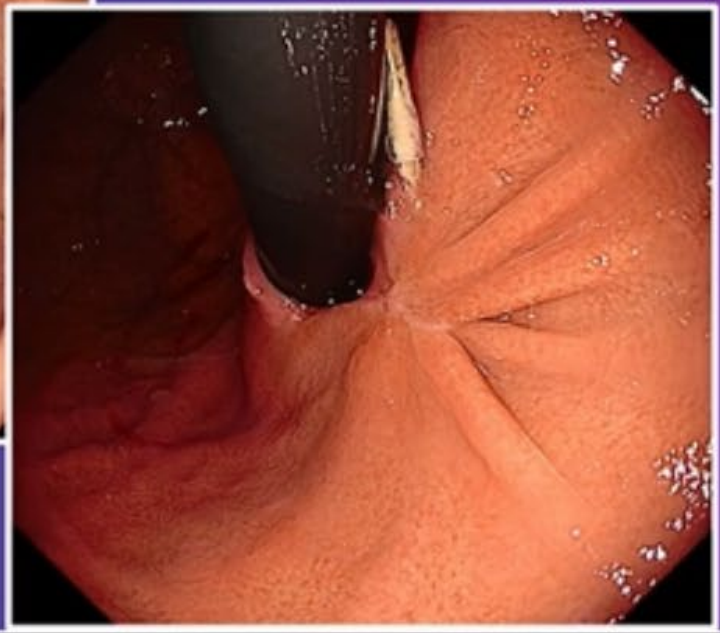
Right after EMRC



Mucoplasty



2M after ARM-P



ARMS

- ✓ Ensuring effective results
- ✓ Reducing post procedural adverse events
- ✓ Achieving faster symptom relief

Take Home Message

- Endoscopic treatments of GERD can fill the gap between medical treatment & surgery
- As a gastroenterologist ,we should establish our role in treatment of GERD by offering something more than LSM & medications

Thank you

