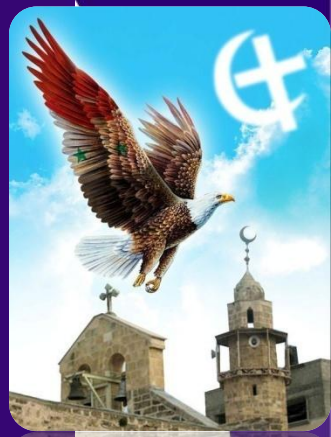
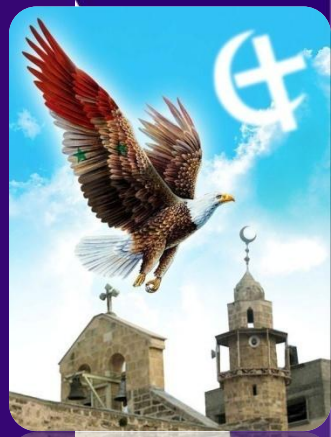
The most Updates on Endoscopic management of GERD 2019



27.Th Syrian Congress of Gastroenterology & Hepatology
Dec 11-12-13, 2019

Fayez Sandouk
MD FRCP
Chairman Young Clinicians Program in Africo Middleast Association of Gastro-Enterology
YCP in AMAGE

The most Updates on Endoscopic management of GERD 2019



19.Th Iranian Congress of Gastroenterology & Hepatology ICGH-2019 Nov 6-8, 2019

Fayez Sandouk
MD FRCP
Chairman Young Clinicians Program in Africo Middleast Association of Gastro-Enterology
YCP in AMAGE

The Montréal definition of GERD

A Global Evidence-Based Consensus

"GERD : The reflux of stomach content which causes troublesome Symptoms and/or complications"

Esophageal Syndromes

Symptomatic Syndromes

- Typical Reflux Syndrome
- Reflux Chest Pain Syndrome

Syndromes with Complicatoins

- Reflux Esophagitis
- Reflux Stricture
- Barrett's Esophagus
- Adenocarcinoma

Extra-esophageal Syndromes

Established Associations

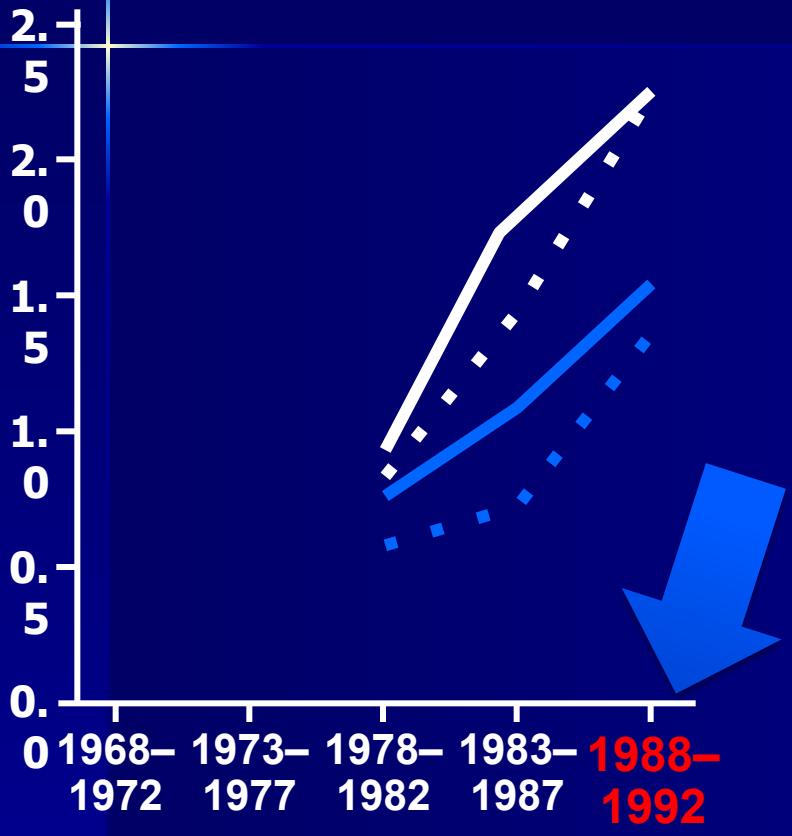
- Reflux Cough
- Reflux Laryngitis
- Reflux Asthma
- Reflux Dental Eros.

Proposed Associations

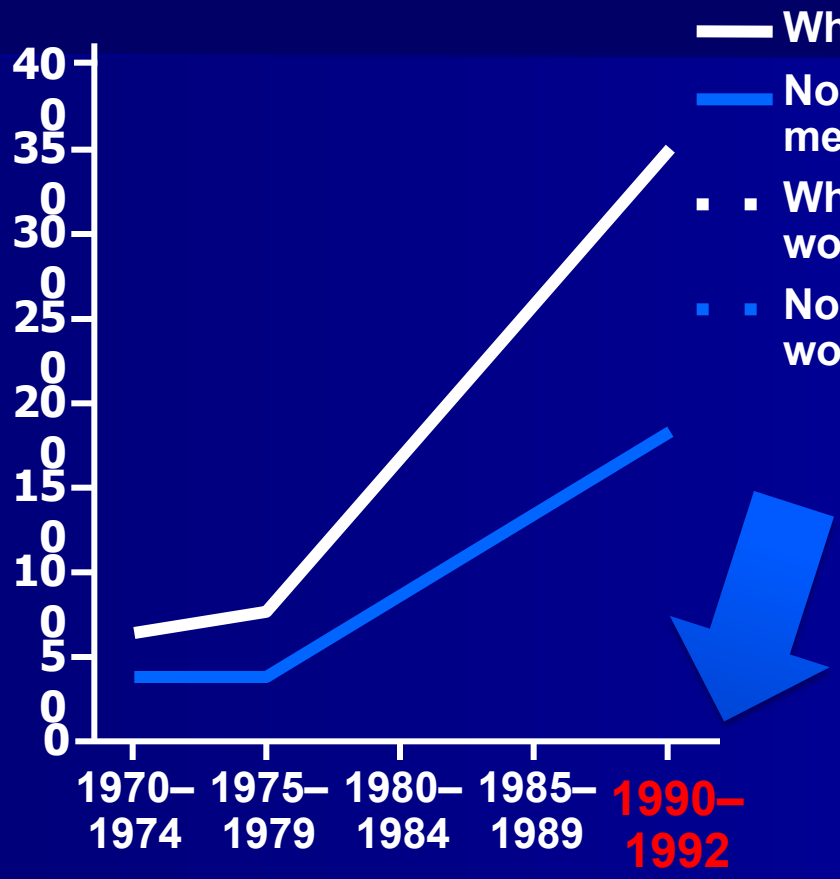
- Pharyngitis
- Sinusitis
- Idiopathic Pulmonary Fibrosis
- Recurrent Otitis Media

Vakil N et al. Am J Gastroenterol 2006;101:1900-1920

The prevalence of GERD is increasing

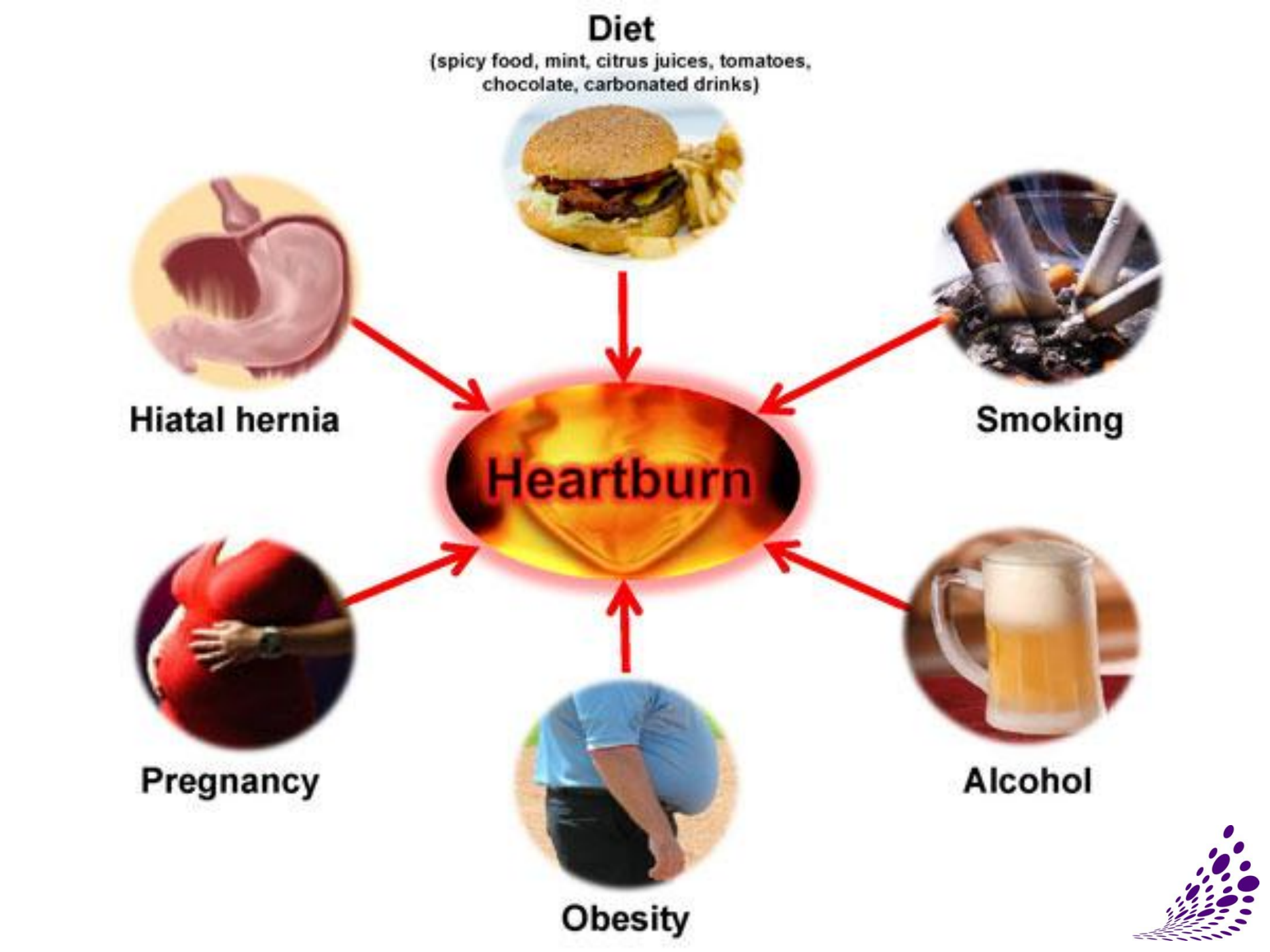


Reflux esophagitis (year)



GERD (year)

El-Serag & Sonnenberg. Gut 1998;73:327–33


Diet
(spicy food, mint, citrus juices, tomatoes, chocolate, carbonated drinks)
Hiatal hernia
Smoking
Heartburn
Pregnancy
Alcohol
Obesity

Updates on Endoscopic Management of GERD

Treatment Modalities

1. Medication
2. Surgery
3. Endoscopy 2005

Updates on Endoscopic Management of GERD

Medical vs Surgical 2010

The SAME as surgery at (5 years)

- High rates of Patient Satisfaction at late follow-up
- Surgery, left for Young, Moderate, & Severe GERD

Expert Rev Gastroenterol Hepatol. 2010;4(2):235-243

Acta Otorhinolaryngol Ital. 2006 Oct; 26(5): 281–286, & *Many others*

Updates on Endoscopic Management of GERD

Medical vs Surgical 2018

In a randomized controlled trial

the **remission rates were similar** in both arms at 5-year follow-up (32%).

ADVERSE EVENTS

(Gas Bloating, Dysphagia, flatulence)

were significantly higher in surgery

[8].

Updates on Endoscopic Management of GERD

Medical

2003 : 1 tab q day for live.

March 2016

Difficiency Ca, Mg, D3, B12,
Osteoporosis, Bone fractures,
Clostridium difficile infection

ON DEMAND
5 tabs a month

Jan 2017

Harvard / CNN
Kidney, Liver & Heart problems

[3-5].

Updates on Endoscopic Management of GERD

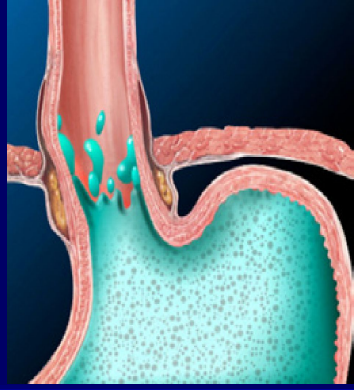
Medical

20-30% **Erosive**
& 40% **Non-Erosive** reflux disease
DO NOT RESPOND TO PPI.

No Significant Improvement
DOUBLING THE DOSE PPIs

[2].

Updates on Endoscopic Management of GERD



Alternatives

New Surgery

Endoscopy

need for **minimally invasive** treatment modalities for patients who do not respond to PPIs and are unwilling for Standared Surgery.

Updates on Endoscopic Management of GERD

Laparoscopic vs Open fundop.

LAP

- Similar longer term outcome
- Quicker Recovery
- Fewer complications

Expert Rev Gastroenterol Hepatol. 2010;4(2):235-243

Updates on Endoscopic Management of GERD

Lap. Fundoplication Surgery

1 – 3 days in hospital

2 - 3 weeks Return to work

Endoscopic Alternative

Return to work 1 day

Endoscopic Management of GERD: Revisited

Zaheer Nabi and D. Nageshwar Reddy

Clin Endosc. 2016 Sep; 49(5): 408–416.
Published online 2016 Sep 30. doi: 10.5946/ce.2016.133
PMCID: PMC5066398 / PMID: 27744659

A) Implantation and Injection Devices:

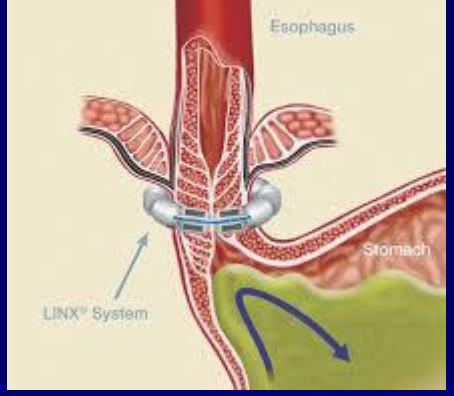
- Enteryx
- Gatekeeper
- Plexiglas microspheres

B) apposition devices:

- **Sutures** : " EndoCinch "
- **Stiches** : " Transoral Incisionless Fundoplication" (TIF)

C) Currently available endoscopic anti-reflux modalities (EARMs) include:

- **Stretta** : Radio Frequency Ablation (RFA)
- Medigus Ultrasonic Surgical **Endostapler** (MUSE)
- Anti-Reflux **Mucosectomy** (ARMS)



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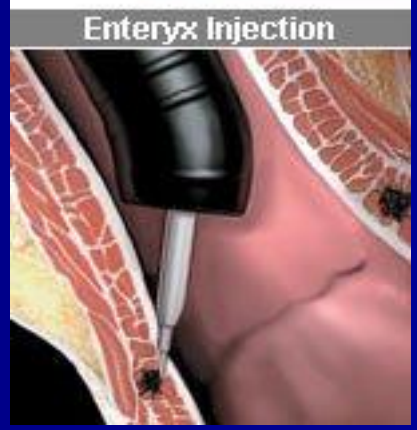
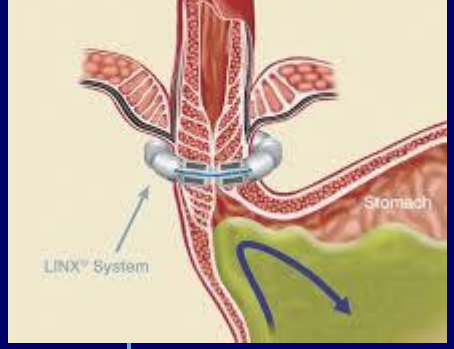
Updates on Endoscopic Management of GE

Recalled from the market

A). Endoluminal gastroplasty 2005:
"Esophyx"
&
"Endocinch"

B). Poplymer Injection 2006-2009:
"Enteryx"





Gatekeeper

- Small flexible band of interlinked **titanium beads with magnetic cores.**
- **Placed laparoscopically** around the lower esophageal sphincter (LES) without altering hiatal or gastric anatomy.
- The **beads separate during swallowing** as well as during belching or vomiting [9]. Effect similar to surgery as for GERD symptoms. Yet; **adverse events, such as dysphagia, inability to belch, and vomiting, are less frequent.**
- The most common adverse event with MSA procedure is **dysphagia** for which the device may have to be removed in some patients. Recently, a case of **endoluminal perforation** has been reported with MSA resulting in severe dysphagia [11].

Plexiglass Microspheres

A) Implantation and Injection Devices:

- Enteryx
- Gatekeeper
- Plexiglas microspheres

Injected under EUD guidance

Needs more studies

B) Several endoscopic apposition devices:

- EndoCinch : Sutures
- Transoral Incisionless Fundoplication (TIF) Stiches

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1.

B) Several endoscopic apposition devices:

- EndoCinch : Two sts of **Sutures**
- Transoral Incisionless Fundoplication (TIF) **Stiches**

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- Anti-Reflux Mucosectomy (ARMS) (Fig. 1).

- Result: Difficult Application
- Expensive , easy Break down

Updates on Endoscopic Management of GERD

A) Implantation and Injection Devices:

- Enteryx
- Gatekeeper
1. Plexiglas microspheres

B) Several endoscopic apposition devices:

- EndoCinch : Two sts of **Sutures**
- **T**ransoral **I**ncisionless **F**undoplication **(TIF)** **Stiches (Plicator)**

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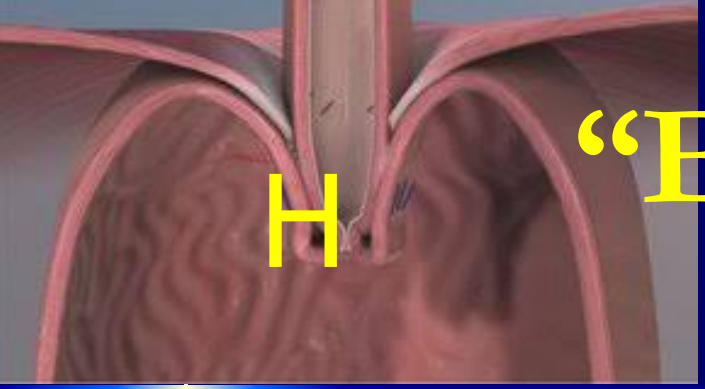


H “Esophyx”
(TIF)

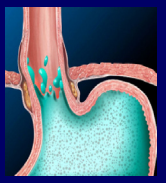
Bringing Serosa to Serosa Fusion

Minimally invasive, Outpatient, GA, reducing a hiatal hernia ≤2cm by pulling esophagus down , Creating full-thickness partial VALVE 2-4 cm in length and greater than 270º circumferential fundoplication wrap.

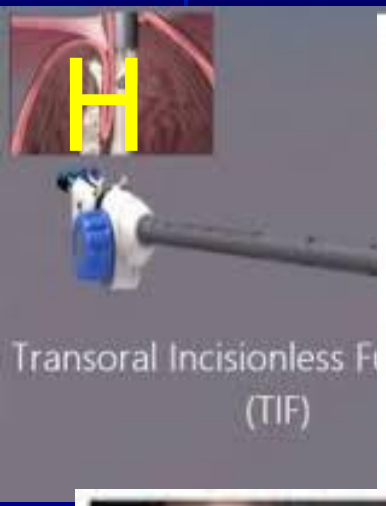
Around 20 **H-shaped stitches** made of **Poly-propylene**, are implanted during the procedure to create fusion of the esophageal and fundus tissues and

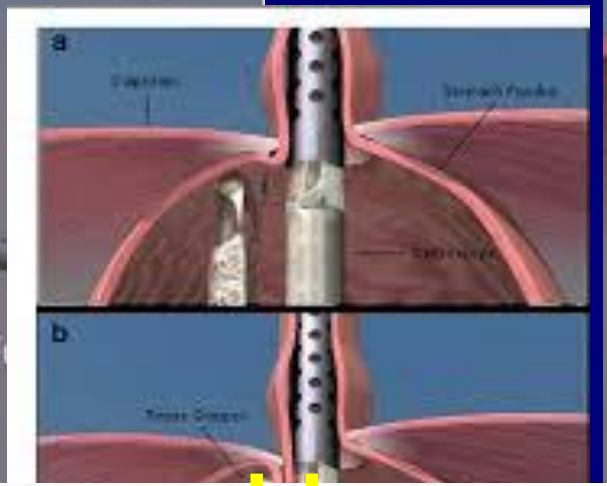
Has undergone several modifications since its introduction about a decade ago.

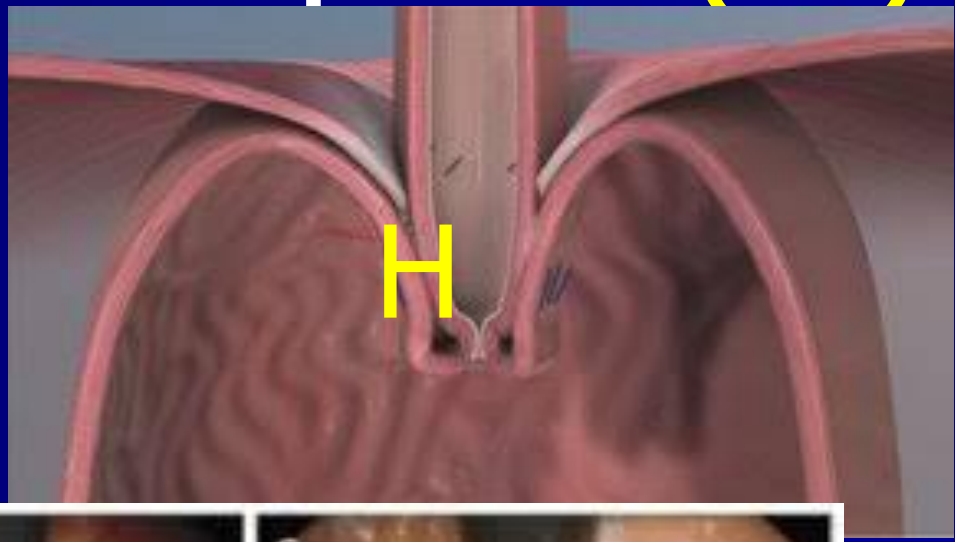
“Esophyx”
(TIF)



Transoral Incisionless Fundoplication (TIF)







"Esophyx"
(TIF)

Decrease PPI usage 86% in 2 years & 67% in 3 years.

Esophyx vs Toupet fundoplication:
Similar reduction in frequency & severity of symptoms.

However, TIF exhibited significantly **shorter operative times and length of stay** [36].

“Esophyx”
(TIF)

Transoral Incisionless Fundoplication (TIF)

The incidence of severe adverse events consisting of gastrointestinal perforation and bleeding was 2.4% [34].

شبتون

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Stretta RFA

- Endoscopically guided define Precisely Z-Line
- Outpatient procedure in 20 min.

- Stretta Catheter delivers RF energy to LES and gastric Cardia.

- Low power (5 Watts) RF energy and generates low tissue temperatures (65c to 95c) during a series of one-minute treatment cycles)

- Back to work 1 DAY .

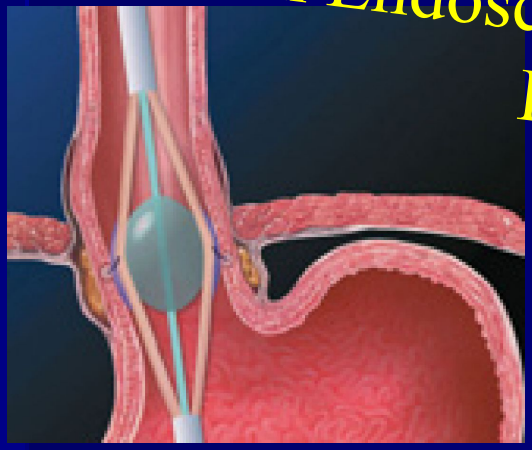
FILM

Stretta RFA

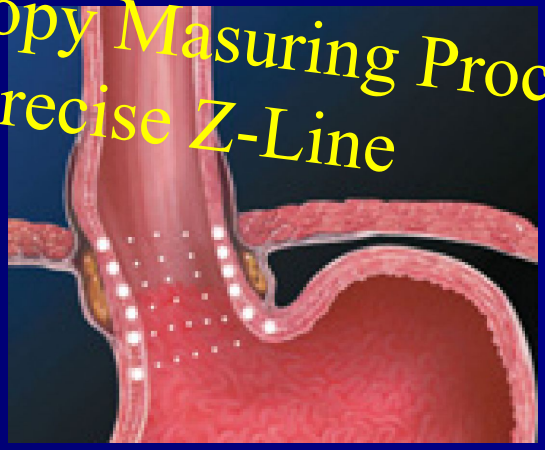
Stretta = Thin & Narrow

Mechanisms of action Anatomy (1)

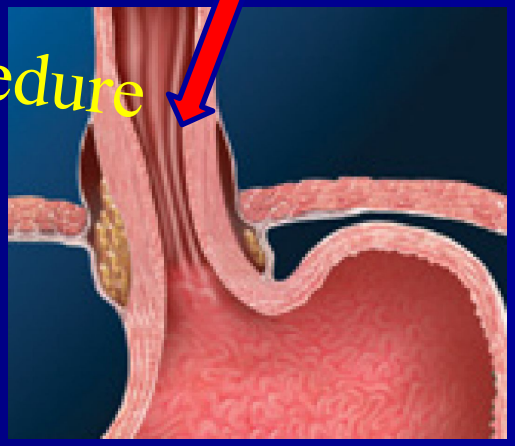
An Endoscopy Masuring Procedure
Precise Z-Line



Concentrated RF energy delivered to tissue Muscularis



4 levels 5mm apart
Z-Line & above
2 levels Fundus
denatured collagen



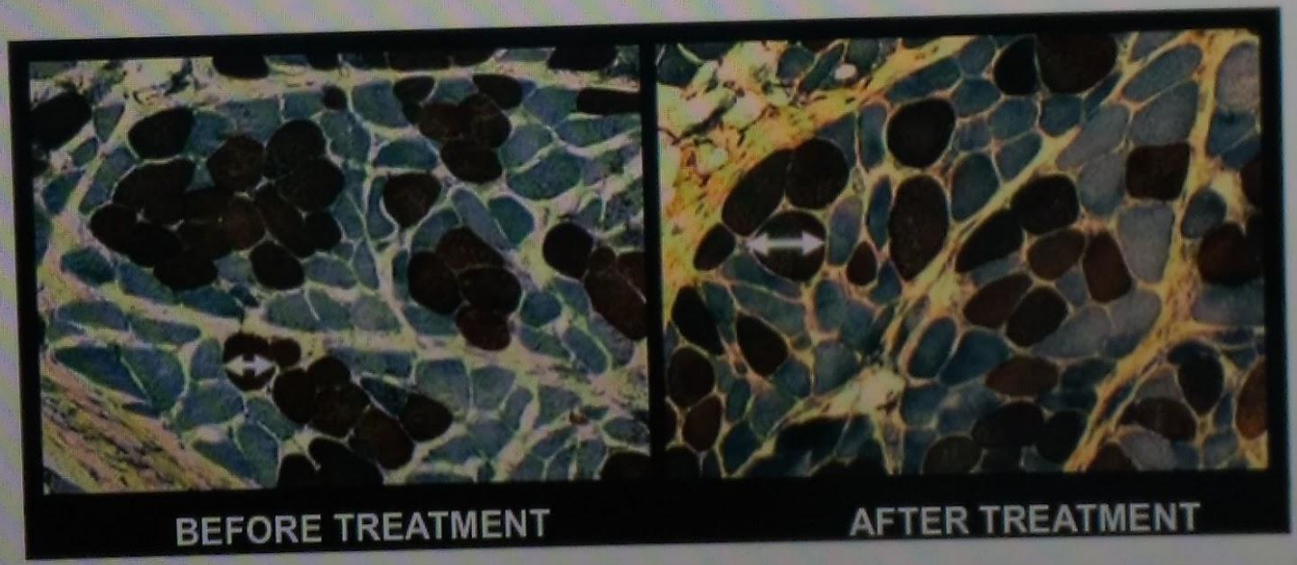
Barrier function improved, in 2-4 months

Mechanisms of action cellular (2)

HOW RF AFFECTS SMOOTH MUSCLE

The mechanism of RF delivery to smooth muscle at the cellular level in an animal model include:

- Structural changes to and growth of the smooth muscle (size and amount) and redistribution of the interstitial cells of cajal.
- A change to stimulate myofibroblasts which directly influences the production of muscle
- A change in the muscle fiber to connective tissue ratio, this ratio becomes higher because the amount of connective tissue decreases while muscle fiber tissue increases
- Increase in Collagen 1 and decrease in Collagen 3.

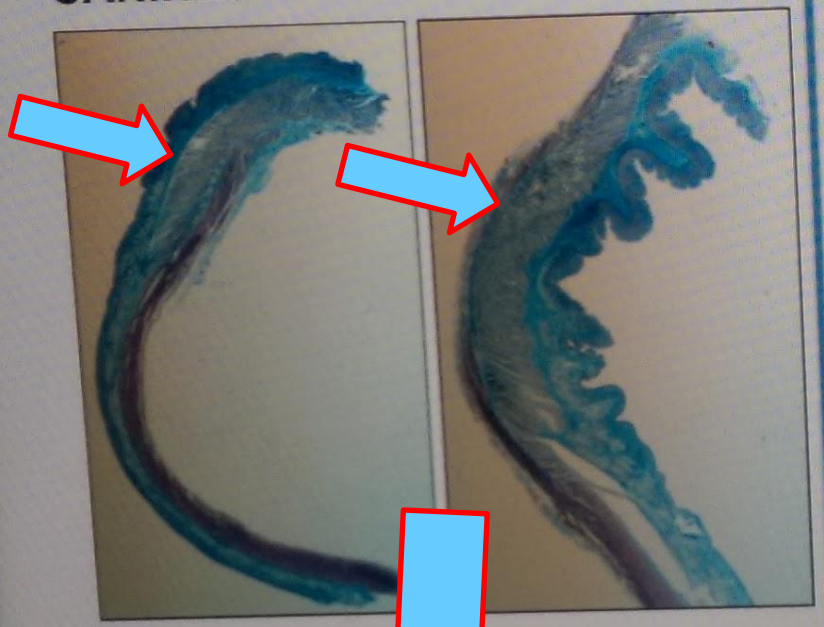


Herman et al 2013 - Poster Presentation DDW, submitted for publication

Mechanisms of action Cellular (3)

INCREASED THICKNESS

CANINES



Baseline contro
untreated
5.2 mm ± 0.3

6 months
post-treatment
7.8 mm ± 0.3

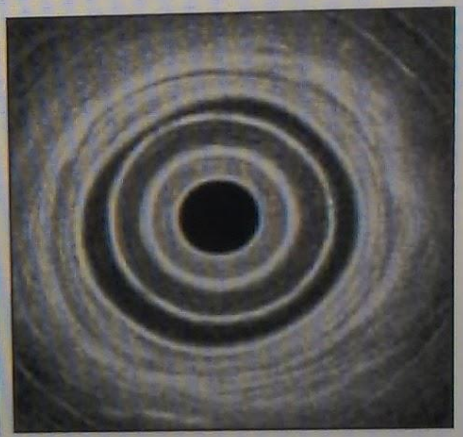
50% mean increase in thickness of the GE junction (p<0.0001)

Kim M, GI Endoscopy 2003

HUMANS

Before Stretta

After Stretta



3 Months

De Angelis C, Repici A, Dughera L. UEGW 2004

A. Mucosal Temp 25-45c

B. Muscularis Temp 65-99c

C. Impedance150-900

A حرارة المخاطية يجب أن تكون بين ٢٥ ـ ٤٥ درجة

B حرارة العضلية يجب أن تكون بين ٦٥ – ٩٩ درجة

C المعاوضة Impedance يجب أن تكون بين ١٥٠ ـ ٩٠٠

(ممانعة التيار الكهربائي ، تفصل لوحدها إذا كانت أقل من ١٠٠ ؟ قد يكون سلك الدليل ملموسا)

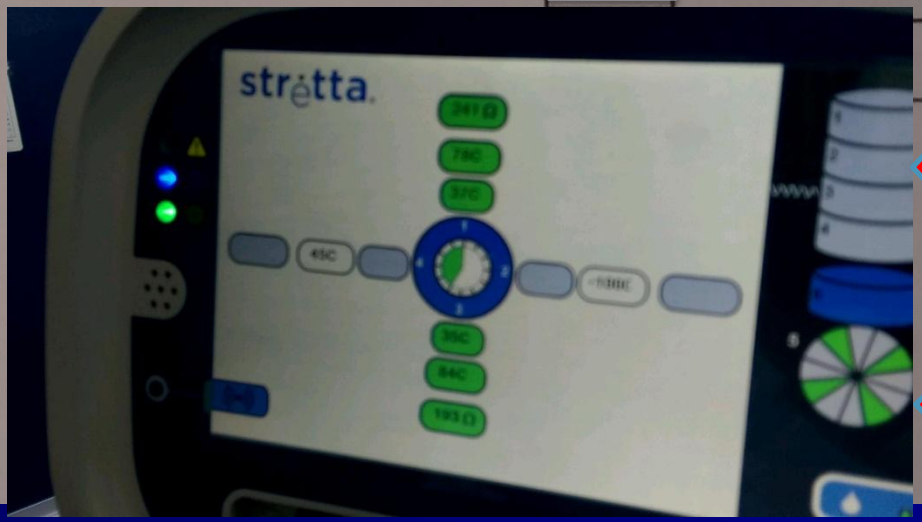
65 – 99 c

C

B

A

Smart Machine



B C

6 Levels

Circumfincial

GERD Symposium "Endoscopic Therapy"

Stretta "2005-2010" SHORT

Short-term studies showed the same result of Lap.

on

Symptoms + Quality of life+ Pt. Satisfaction

Expert Rev Gastroenterol Hepatol. 2010;4(2):235-243

Acta Otorhinolaryngol Ital. 2006 Oct; 26(5): 281–286.

Stretta in GERD

Long Term FU (24 & 48 months) with objective data

1. Improved heartburn scores,

2. Improved specific & general quality of life scores at both 24 and 48 months in 92.8% of patients.

3. At 48 months 72.3% of patients were completely off PPI medications.

The same Long Term results of Surgery

Dughera & colleagues 2011 Surgical Endoscopy. 2010. 24: 854-858.

Stretta RFA

Stretta "2018"

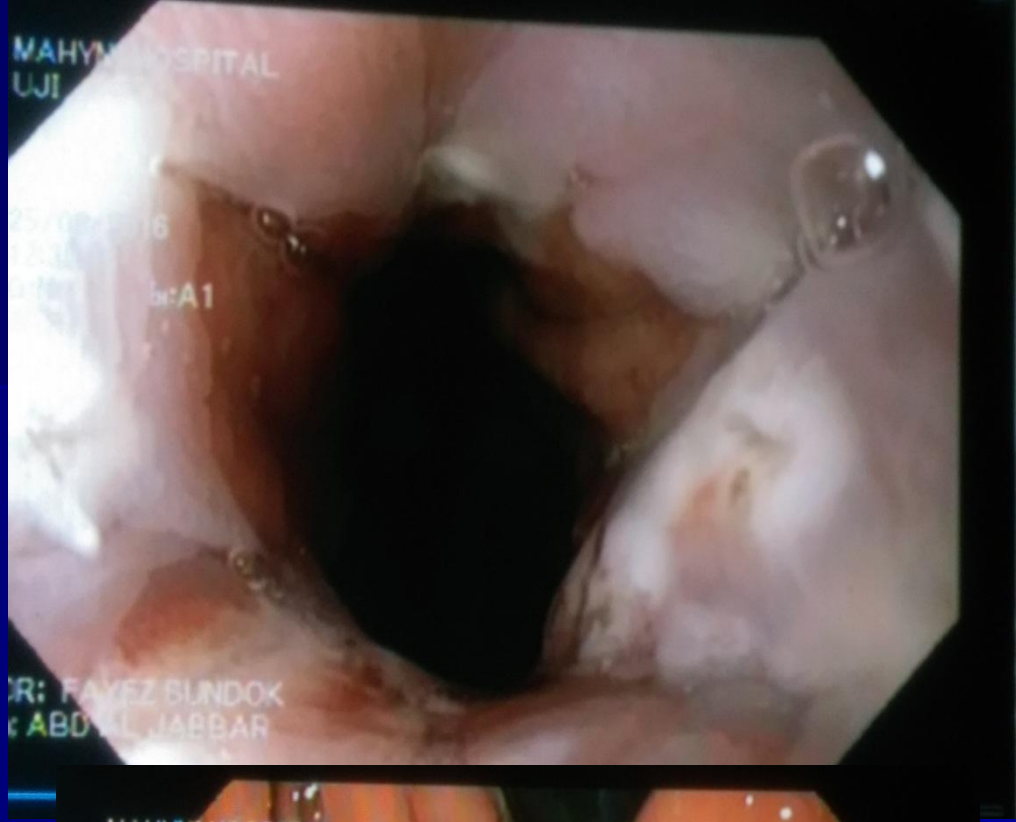
Stretta was inferior to Surgery for typical and respiratory symptoms associated with GERD in two other studies [26,27].

Recent study suggested development of GEJ fibrosis after RFA (that improves on smooth muscle relaxant) [14]

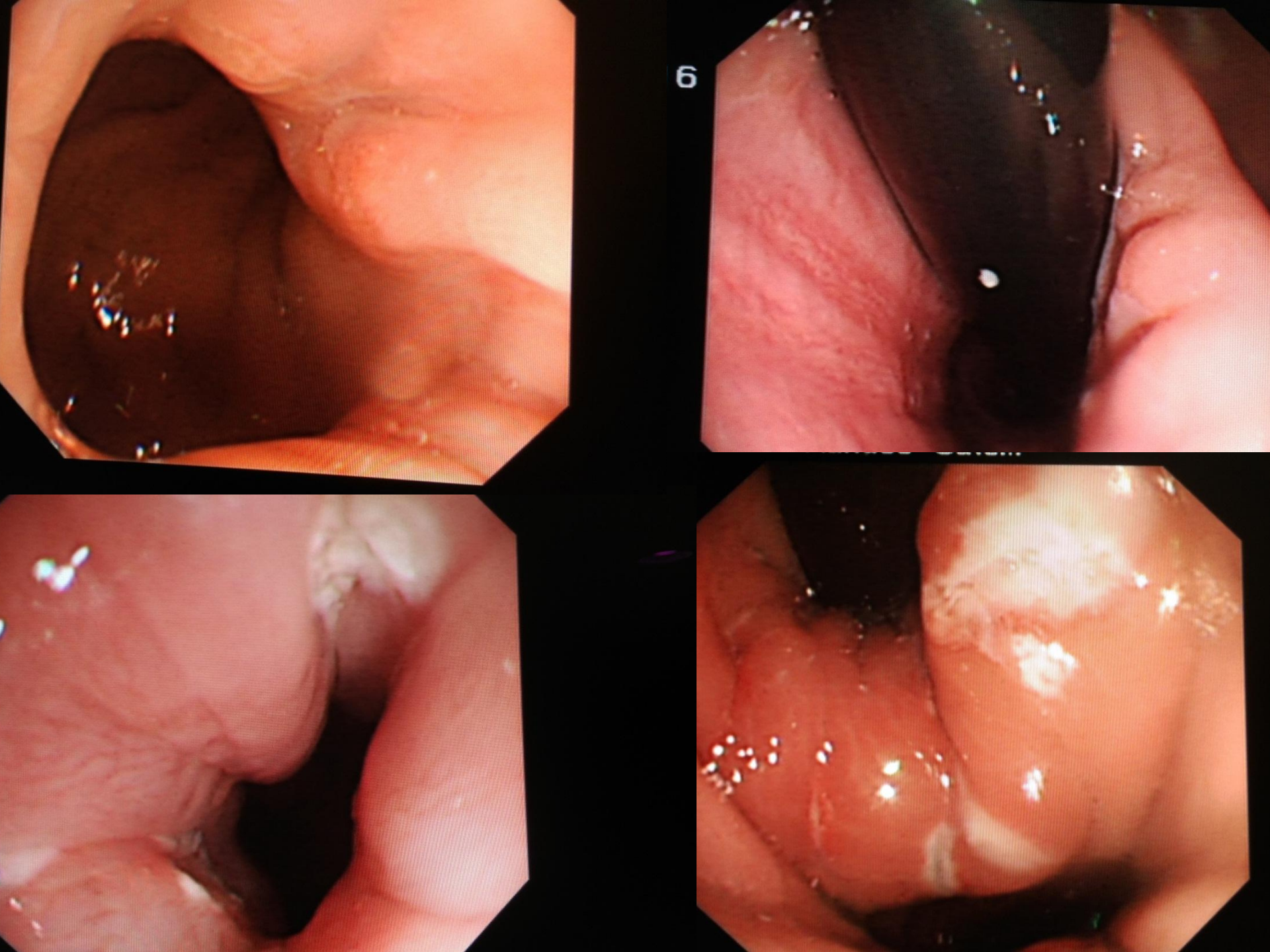
Short procedure & Fast Recovery
Very SAFE

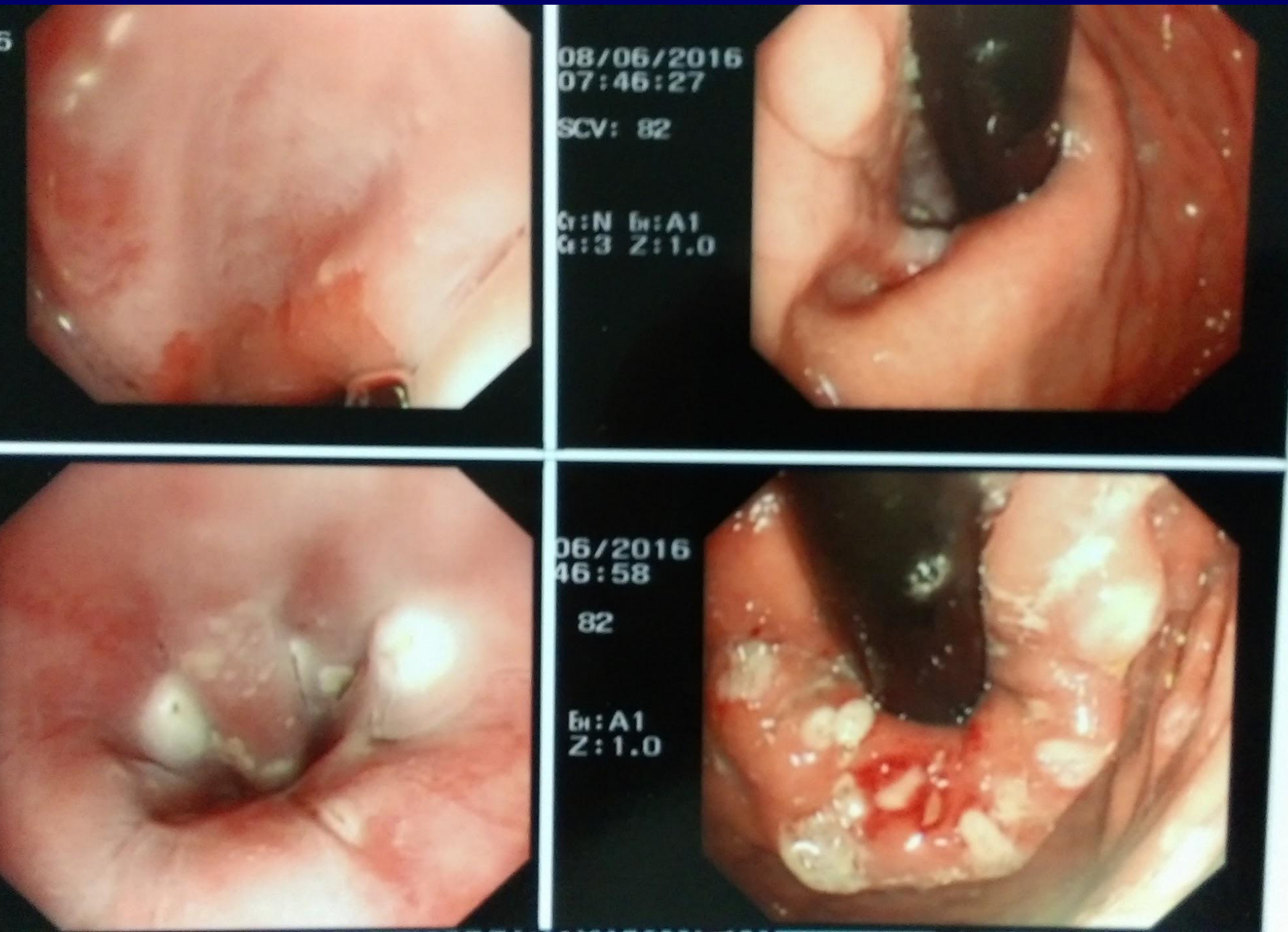
Stretta vs Lap Surg comparison

	Stretta	LAP Surgery
Size	< 3 cm	> 3cm
Place	Endoscopy room	Operating room
Time operation	20 min.	1.5 - 2 Hr.
Stay hospital	5 Hr.	1.5 - 3 days
Return to work	Next day	2-3 weeks
Complications	Chest pain 2D	Dysphagia 1M. 10%
Cure	93%	same
Recurrence in 5 Y.	32%	same
Effect	After 2-4 months	Next day
Cost	$ 4500	$ 2500 – 7500



قرص الفلافل
Donuts


6


08/06/2016
07:46:27
SCV: 82
Gr:N Bu:A1
Ga:3 Z:1.0
06/2016
46:58
82
Bu:A1
Z:1.0

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Medigus Ultrasonic Surgical Endostapler (MUSE)

Medigus Ultrasonic Surgical Endostapler (MUSE)

Endoscopic Stapling device for transoral partial fundoplication.

The complete device consists of:

1. Flexible endoscope,
2. Endostapler,
3. Video camera, and
4. Ultrasound transducer (Fig. 4).

Medigus Ultrasonic Surgical Endostapler (MUSE)

Medigus Ultrasonic Surgical Endostapler (MUSE)

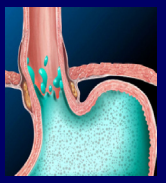
Stapler is fired under the guidance of ultrasonic gap finder. The process is repeated to form a flap akin to laparoscopic fundoplication.

Medigus Ultrasonic Surgical Endostapler (MUSE)

Medigus Ultrasonic Surgical Endostapler (MUSE)

improvement in GERD-HRQL score was found in 73% of patients at 6 months after the procedure.
[40].

Medigus Ultrasonic Surgical Endostapler (MUSE)



Medigus Ultrasonic Surgical Endostapler (MUSE)

Empyema/Pneumothorax and upper gastrointestinal hemorrhage occurred in initial 24 subjects. The technique and device were then modified.

it is a relatively new procedure with limited long-term data on efficacy and safety. [42].

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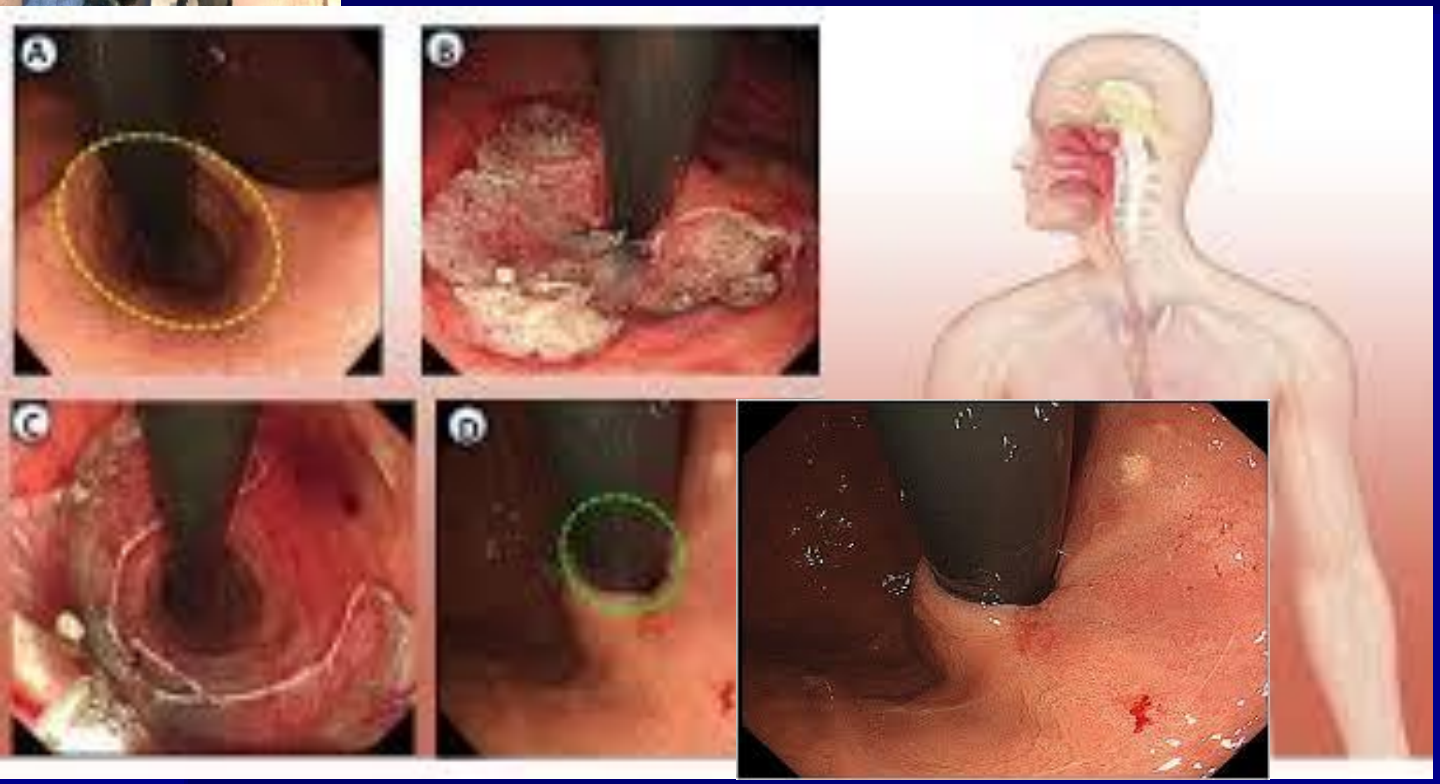
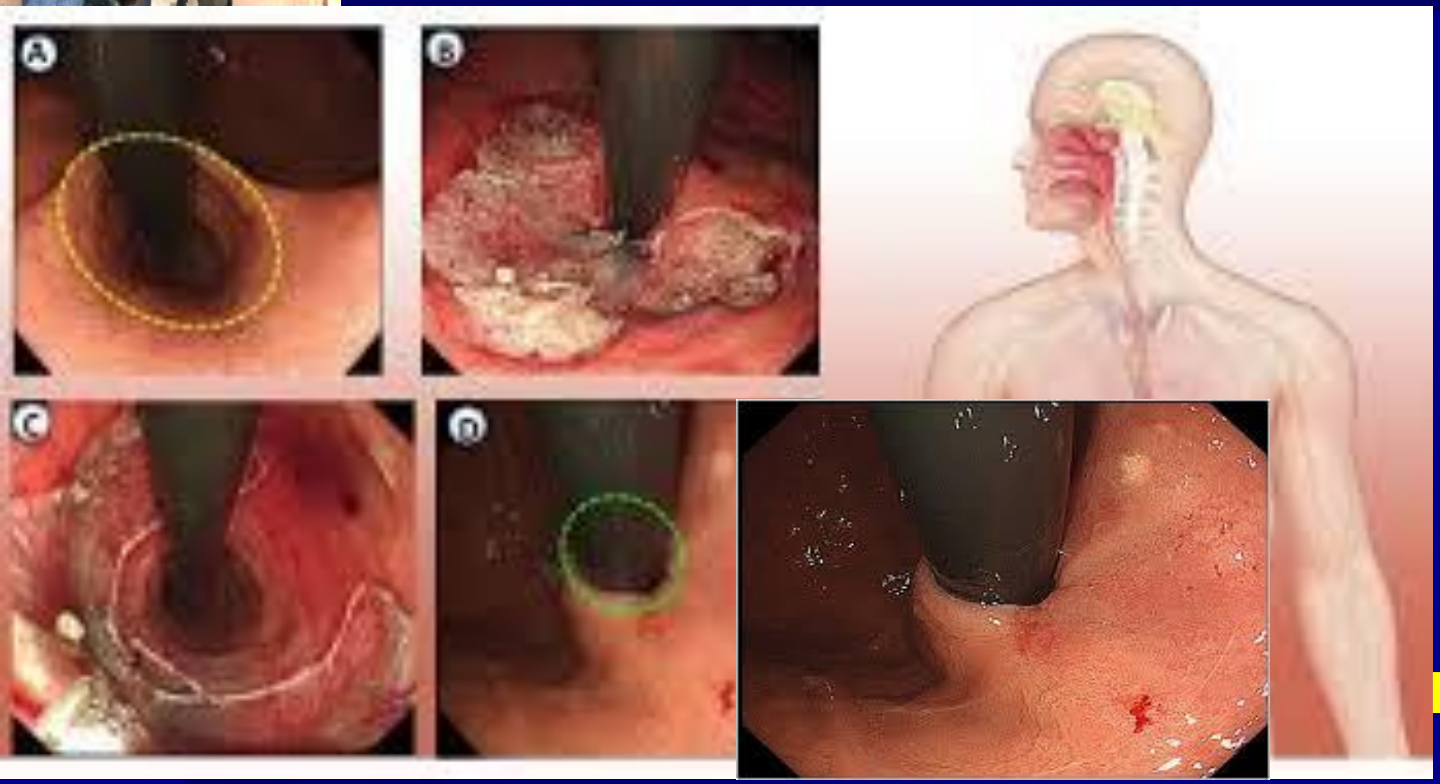


Band Mucosal Resection System

After mucosal resection, the **mucosal healing results in scar formation.** This in turn results in **shrinkage and remodeling** of gastric cardia flap valve; thereby, reducing reflux events.

Anti-Reflux Mucosectomy (ARMS)

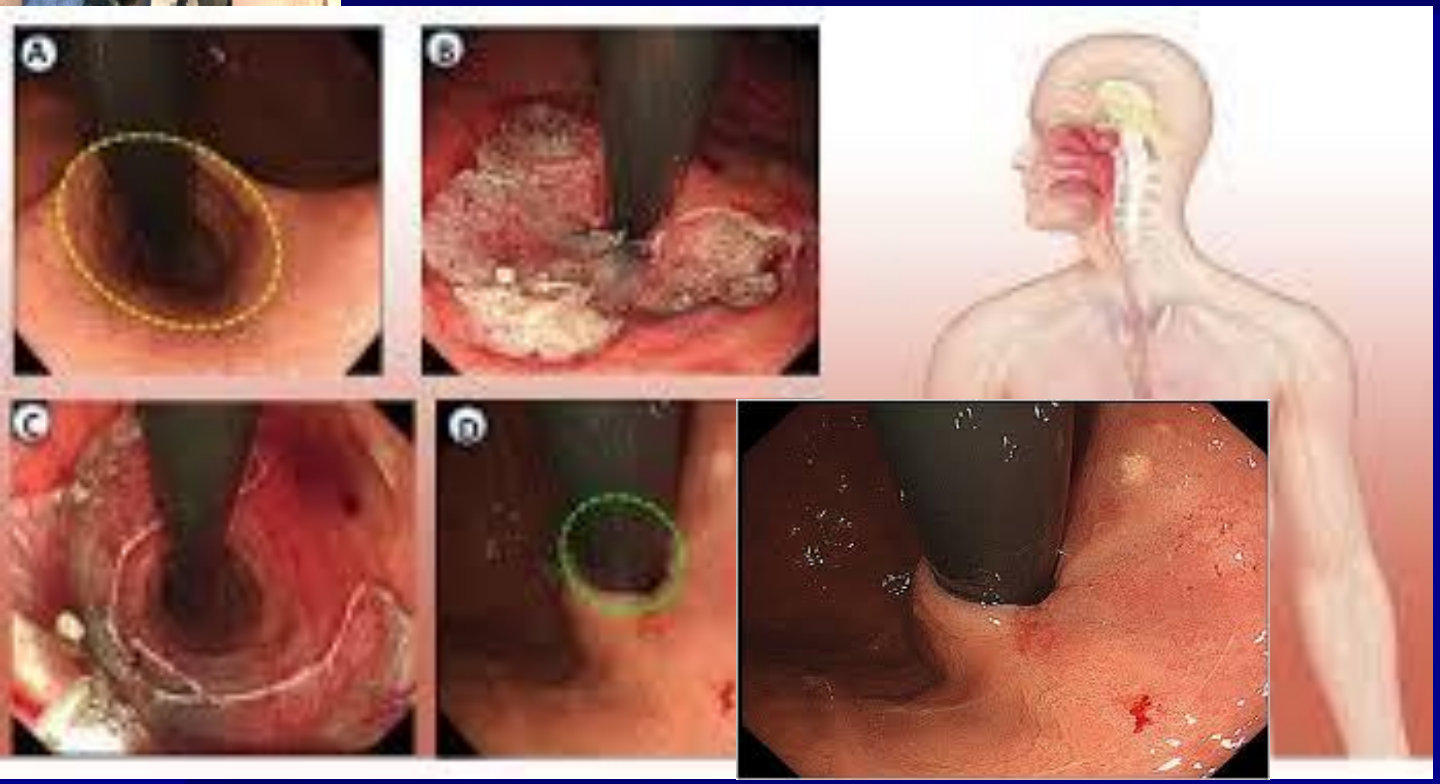


Band Mucosal Resection System

Similar to Barrett's resection set

Submucosal injection of saline with indigo-carmine at gastric cardia. (B) Application of snare over the mucosa with cap-endoscopic mucosal resection technique. (C) Completion of near circumferential (2/3) resection of gastric mucosa. (D) Actively bleeding spurter during mucosectomy procedure. (E) Effective control of bleeding vessel with coagrasper.

Anti-Reflux Mucosectomy (ARMS)



Band Mucosal Resection System

GOOD , needs No special Machines
Needs to decide better about the amount of resections
Need further studies

Summery GERD 2019 "Endoscopic Therapy"

- PPIs has many side effects. We have to look for alternative.
- Surgery: bloating, inability to belch or vomit, and dysphagia.
- Invasiveness of a surgery remains a concern for the patients.
- The last decade has witnessed the fall and rise of many endoscopic devices for GERD. Major endoscopic strategies include radiofrequency ablation and endoscopic fundoplication devices. Current **endoscopic devices score high on subjective improvement, but have been unimpressive in objective improvement like esophageal acid exposure**.

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CONCLUSION

- **Selecting the methods depends on:**

  - ✔ **Patient's desire,**
  - ✔ **Doctors experience**
  - ✔ **Availabilities of the method.**

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Team Work


Shout Loud
Propaganda

Al-Kafeel Endoscopy Family

شكراً
فائز
Fayez

؟!

مجردُ ورقةٍ وقعتِ على الأرضِ
فصنعتْ أجملَ ابتسامة
Just a leave , fell on ground
And makes the most beautiful smile