

Oesophageal Motility Disorders

Esther Chan

16th August 2016

34/Chinese/Male, business researcher

Comm-A, ADL-I

NKDA

Nil PMHx or PSHx

April 2015

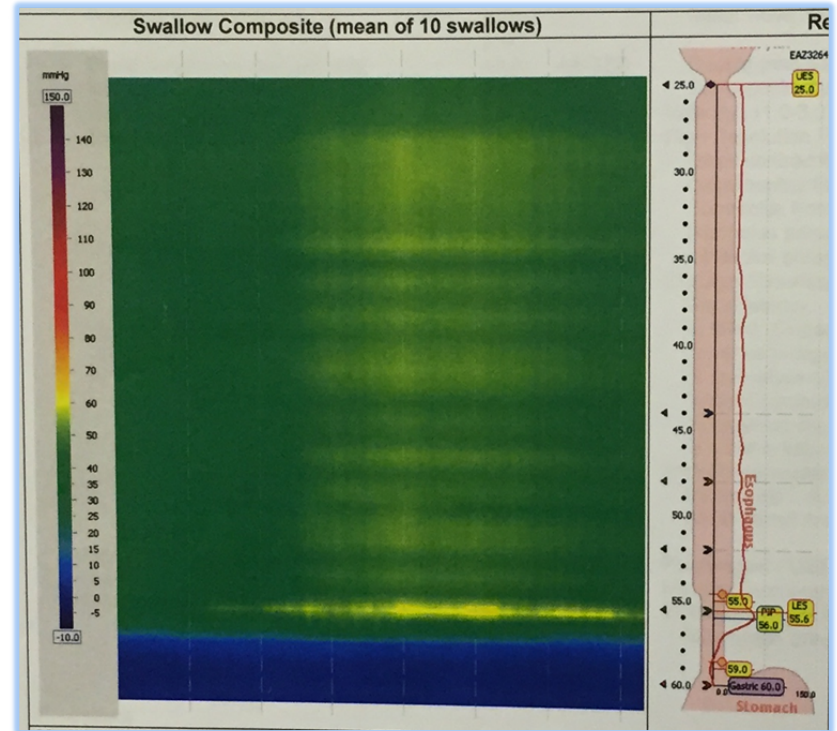
- Presented with difficulty in swallowing, PR bleeding and small calibre stools
- C/o food and liquid stuck in chest a/w regurgitation, compensated by taking liquids to push food down, nocturnal burning of throat
- FHx: breast cancer (maternal aunt)
- OGD and Colono (13/05/15)
 - OGD: grossly dilated oesophagus with large amounts of food residue, functional hold-up at GEJ, scope went through easily to stomach. Stomach and duodenum normal. CLO test positive.
 - Histo: cardia – hyperplastic squamous mucosa, no dysplasia or malignancy
 - Colono: Diverticulosis of right colon

- Given triple therapy
- Urea breath test (2/7/15): Negative
- Water-soluble contrast swallow (28/5/15)



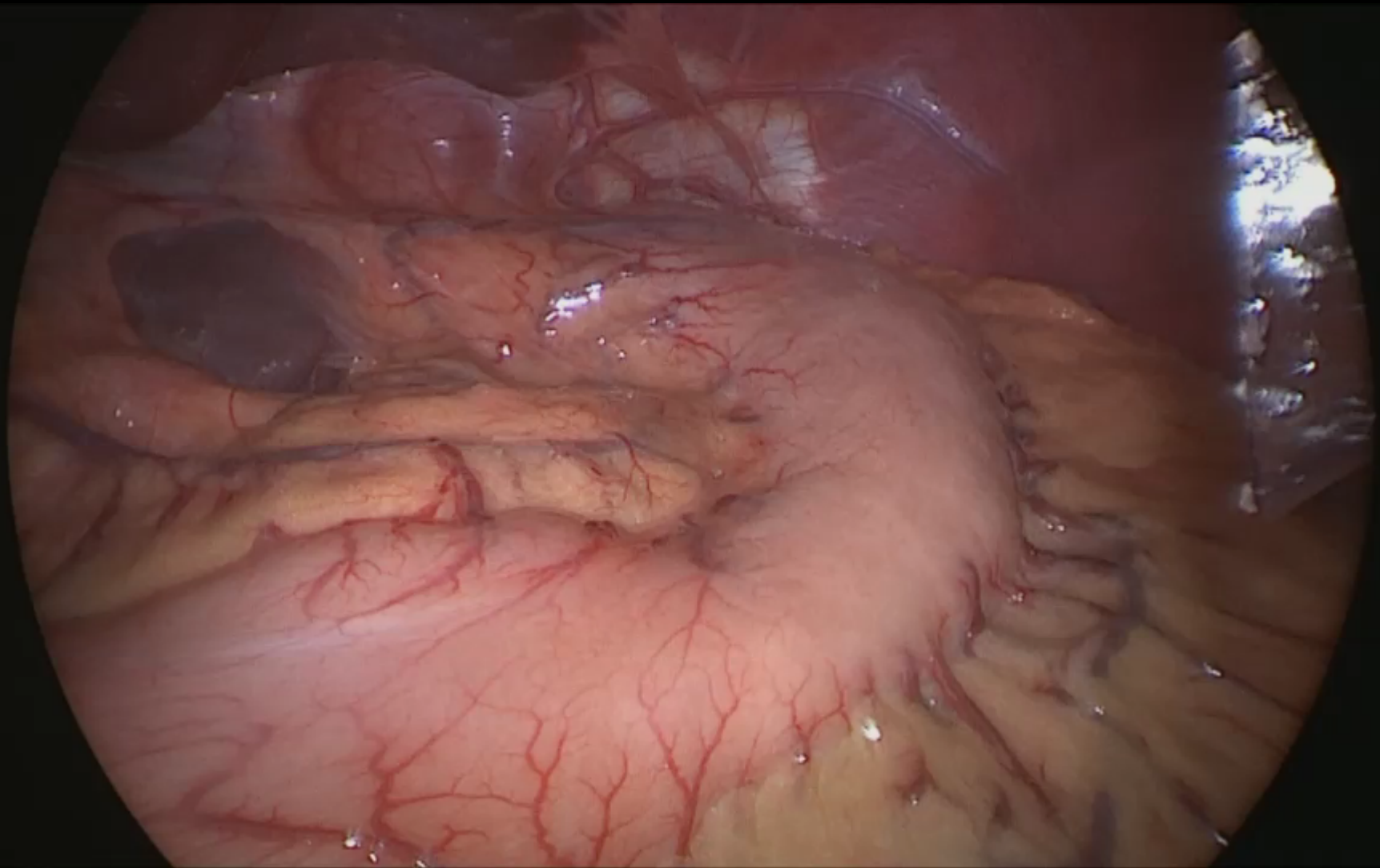
High Resolution Oesophageal Motility Study 23/06/15

- IRP (Integrated Relaxation Pressure) elevated
- Absent peristalsis
- Panoesophageal pressurisation seen following every wet swallow
- Intrathoracic pressure higher than intrabdominal pressure
- Incomplete bolus clearance 80%
- Upper oesophageal sphincter residual pressure 22.4mmHg (N<12.0)



Type II Achalasia

- Offered following options:
 1. Endoscopic pneumatic dilation
 2. POEM (Per Oral Endoscopic Myotomy)
 3. Cardiomyotomy with partial fundoplication
- Patient opted for option 3
- Underwent **Laparoscopic Heller's cardiomyotomy and Dor's anterior fundoplication** on 18/11/15



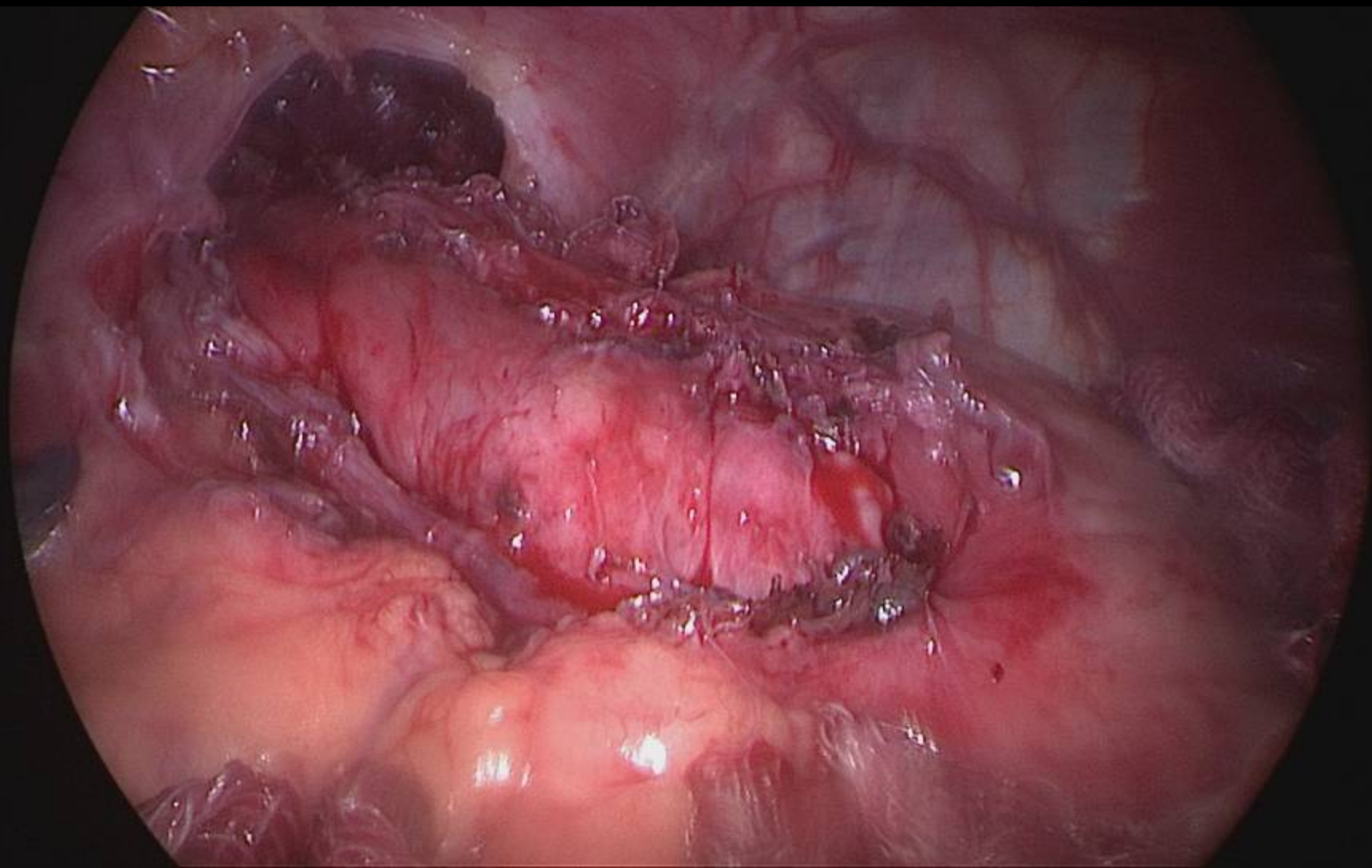
Intra-Operative Findings

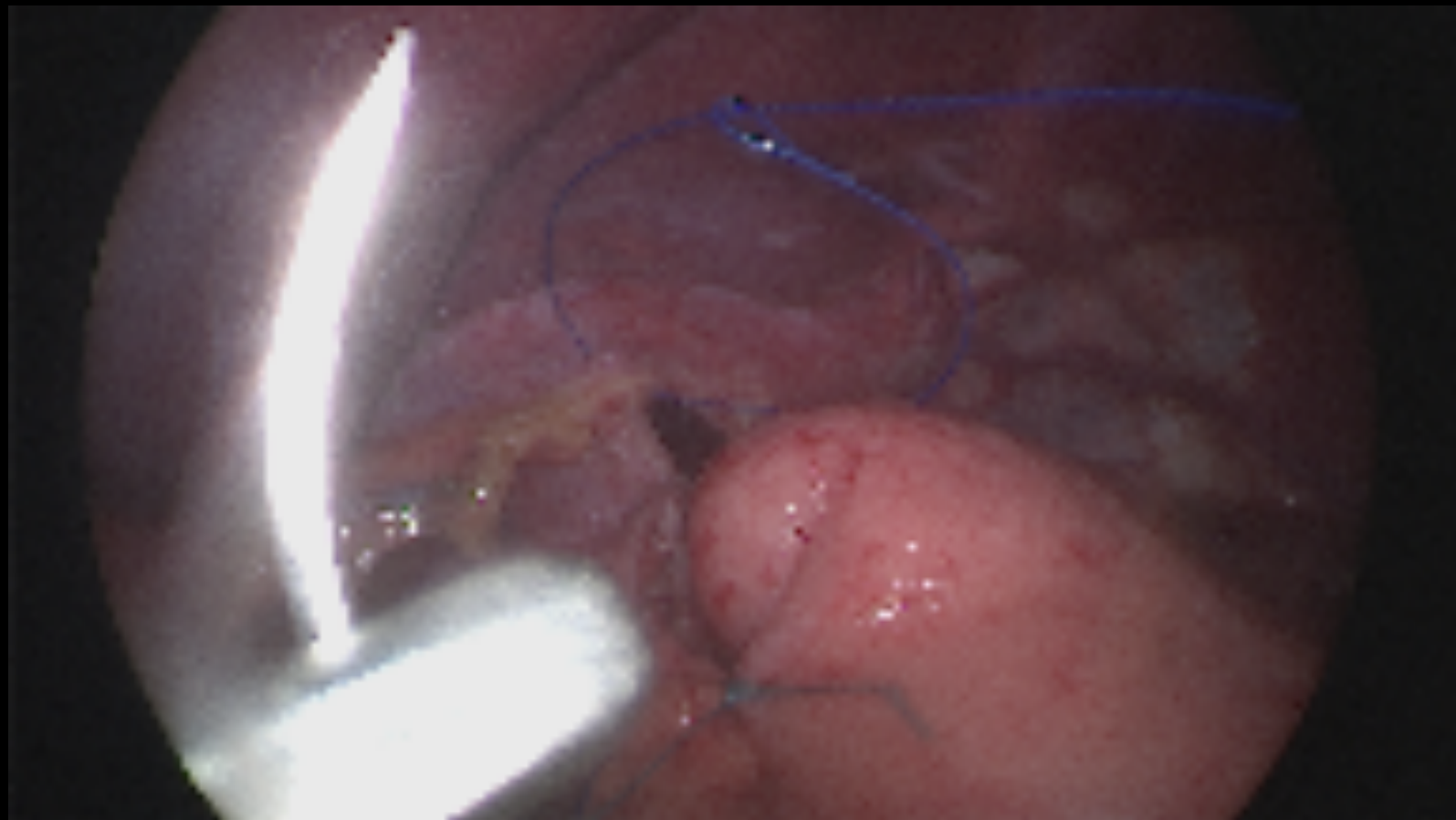
Laparoscopic findings

- Dilated oesophagus
- Thickened oesophageal muscle

Intra-operative OGD

- Gastroscopy attempted but food residue ++
- No leak noted on insufflation





Post-Operative Recovery

POD 0:

- General ward
- NBM - sips of water and ice chips for comfort

POD 2:

- Water soluble contrast meal: No contrast leak at surgical site. Oesophagus appears dilated but contrast able to flow freely into stomach
- Started on feeds

POD 3:

- Soft diet, tolerated well
- Discharged home



DISCUSSION

Oesophageal Motility Disorders

Achalasia

Spastic motility disorders

- Diffuse oesophageal spasm
- Nutcracker oesophagus
- Hypertensive lower oesophageal sphincter

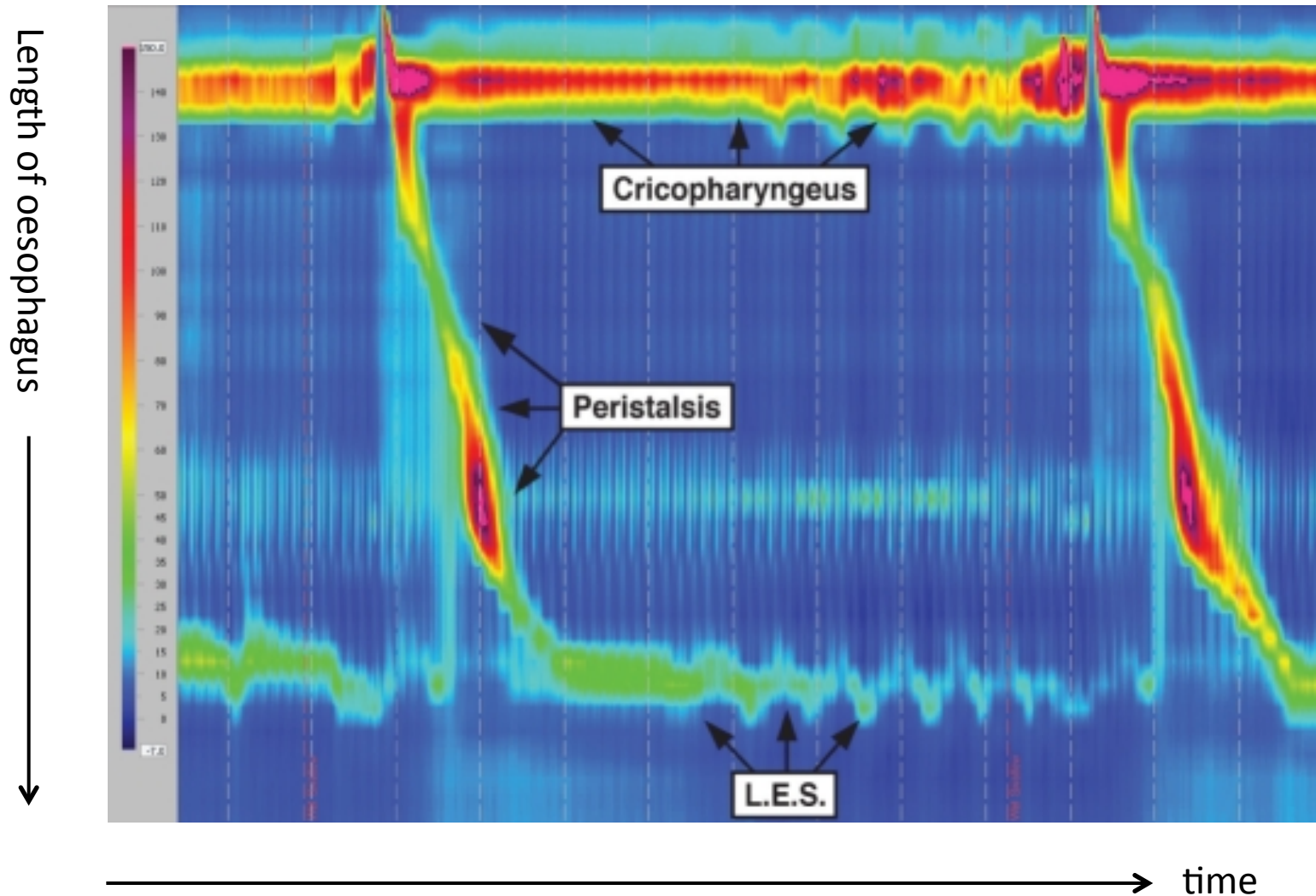
Non-specific oesophageal motility disorders

Inefficient oesophageal motility disorder

Secondary oesophageal motility disorders

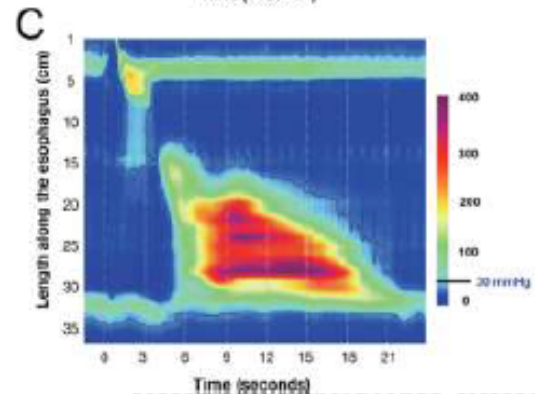
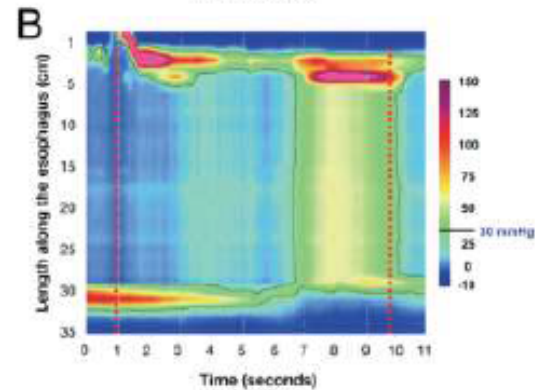
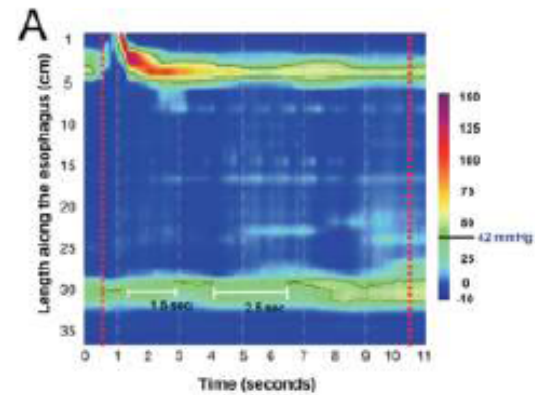
- Scleroderma
- Diabetes mellitus
- Alcohol consumption
- Psychiatric disorders
- Presebyesophagus

High Resolution Oesophageal Motility Study

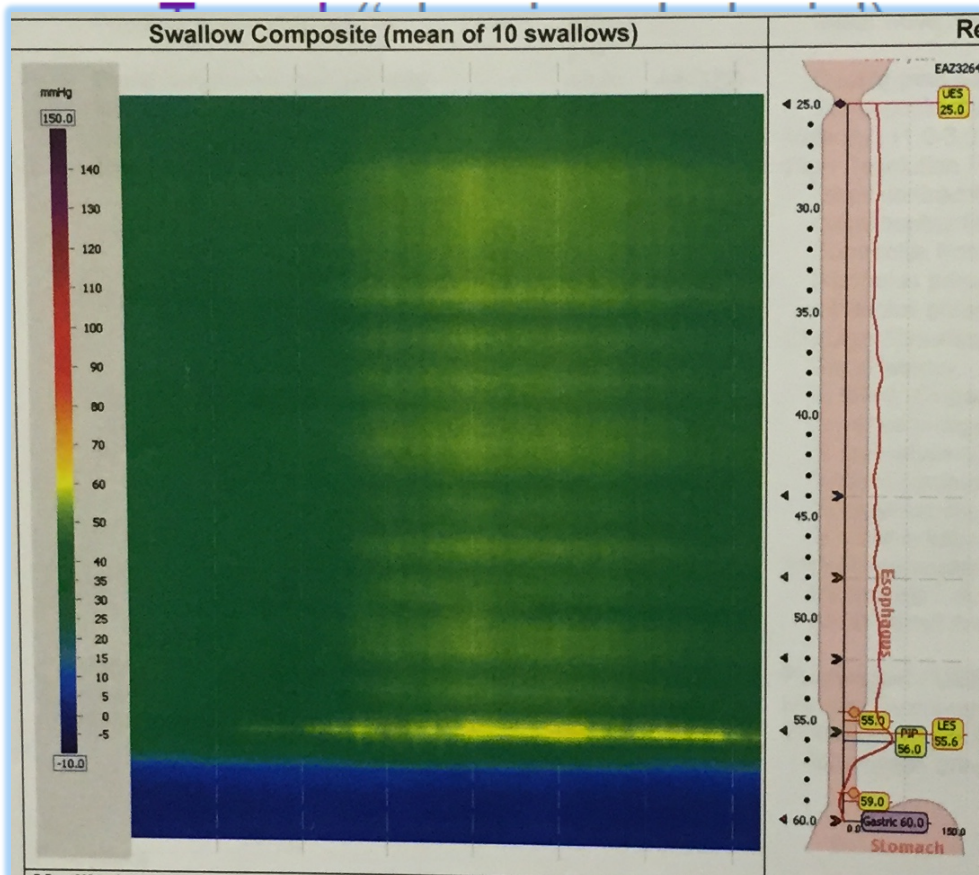


Achalasia Subtypes: Chicago Classification**

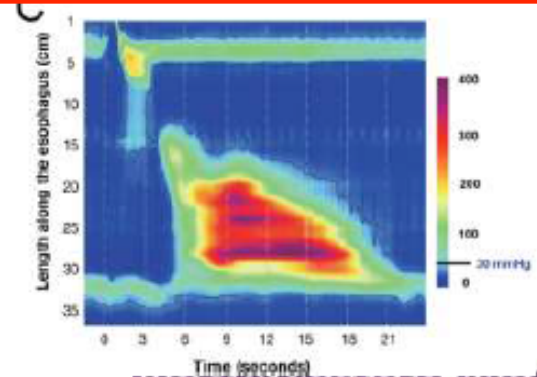
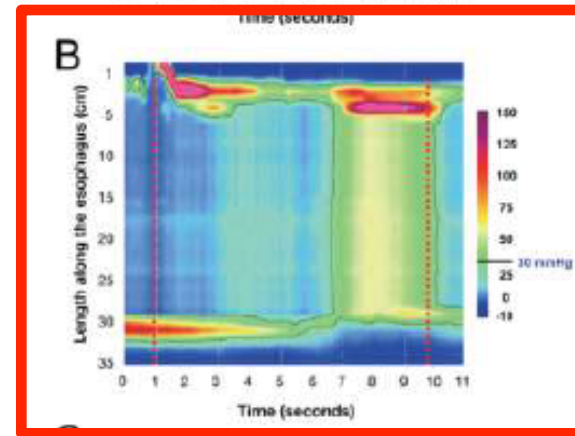
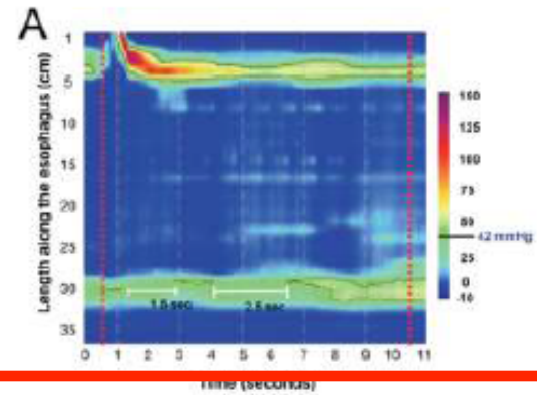
- Type I ('classic achalasia'): absence of esophageal pressurization
- Type II: panesophageal pressurization
- Type III: spastic contractions
- **Pandolfino and Kahrilas



Achalasia Subtypes: Chicago Classification**



- **Pandolfino and Kahrilas



northwestern medicine™

(NJ Soper, 2013)

Treatment Options

Least invasive

Most invasive

Medical

- Nitrates/ Calcium-channel blockers

Endoscopic

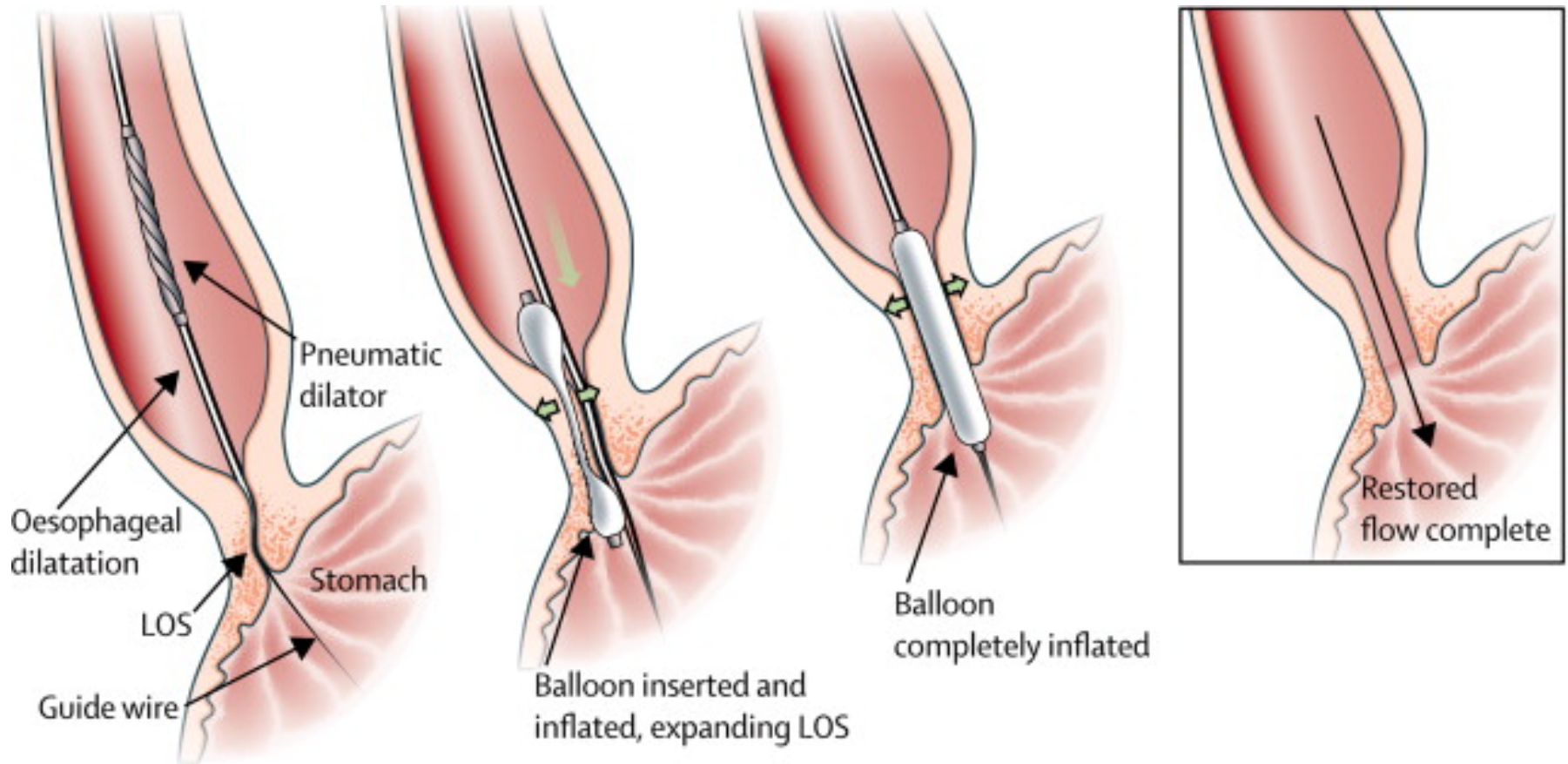
- Endoscopic botox injections
- Pneumatic balloon dilatation
- POEM (Per Oral Endoscopic Myotomy)

Surgical

- Heller's cardiomyotomy +/- Fundoplication
- Excision
→ oesophagectomy + gastric pull-up/ colonic interposition*

*Howard et al, 2011

Pneumatic Dilatation



POEM

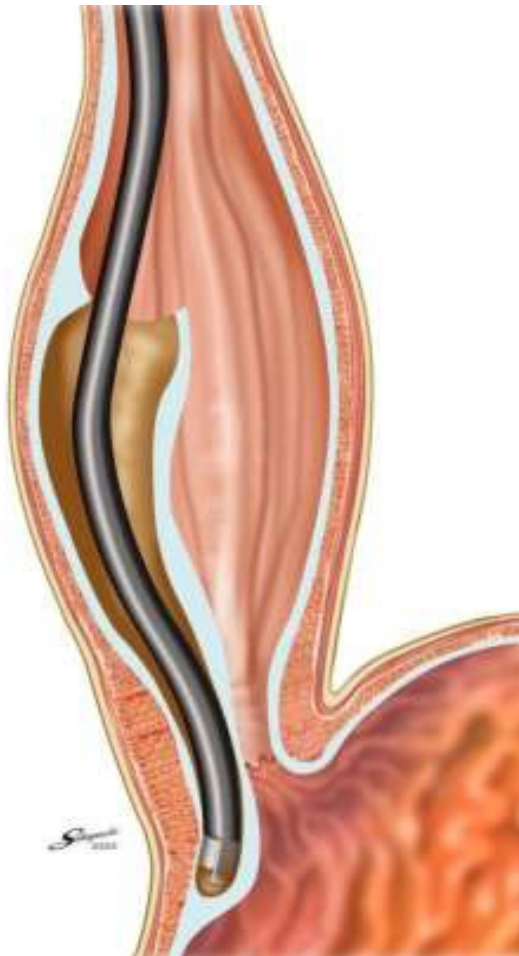
- First reported in literature in 2007 (Pasricha et al) in an experimental model
- Subsequently modified by H Inoue and applied clinically in 2009 (Inoue et al)

POEM

1. Submucosa entered in mid-oesophagus



POEM



2. Submucosal tunnel created, approx half of oesophageal circumference

POEM



3. Myotomy from ~3cm distal to point of entry to ~6cm above GEJ

POEM



3. Myotomy from ~3cm
distal to point of entry to
~6cm above GEJ

Myotomy completed

POEM

4. Endoscopic clips to mucosa



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*Howard et al, 2011

Laparoscopic Heller's myotomy versus pneumatic dilation in the treatment of idiopathic achalasia: a meta-analysis of randomized, controlled trials

Mohammad Yaghoobi, MD, MSc, FRCPC,¹ Serge Mayrand, MD, FRCPC,¹ Myriam Martel, BSc,¹
Ira Roshan-Afshar,¹ Raheleh Bijarchi, MD,¹ Alan Barkun, MD, MSc, FRCPC^{1,2}

Montreal, Quebec, Canada

- Meta-analysis of RCTs
- LHM provides greater response rates compared to PD
- LHM has lesser rates of major adverse events 1 year after Tx
- Additional data needed to confirm validity in long term follow-up

Treatment Options

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Most invasive

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*Howard et al, 2011

A Comparative Study on Comprehensive, Objective Outcomes of Laparoscopic Heller Myotomy With Per-Oral Endoscopic Myotomy (POEM) for Achalasia

Neil H. Bhayani, MD, MHS, Ashwin A. Kurian, MD,* Christy M. Dunst, MD,† Ahmed M. Sharata, MD,*
Erwin Rieder, MD,* and Lee L. Swanstrom, MD*†*

- Retrospective data analysis (64 Heller, 34 POEM)
- POEM has shorter hospitalization than Heller
- Patient symptoms and oesophageal physiology improved equally with both procedures
- Post-op reflux 39% for POEM and 32% for Heller (P = 0.7)
- POEM comparable with laparoscopic Heller myotomy for safe and effective treatment of achalasia

CME

ACG Clinical Guideline: Diagnosis and Management of Achalasia

Michael F. Vaezi, MD, PhD, MSc, FACP¹, John E. Pandolfino, MD, MSCI² and Marcelo F. Vela, MD, MSCR³

Achalasia is a primary motor disorder of the esophagus characterized by insufficient lower esophageal sphincter relaxation and loss of esophageal peristalsis. This results in patients' complaints of dysphagia to solids and liquids, regurgitation, and occasional chest pain with or without weight loss. Endoscopic finding of retained saliva with puckered gastroesophageal junction or barium swallow showing dilated esophagus with birds beaking in a symptomatic patient should prompt appropriate diagnostic and therapeutic strategies. In this ACG guideline the authors present an evidence-based approach in patients with achalasia based on a comprehensive review of the pertinent evidence and examination of relevant published data.

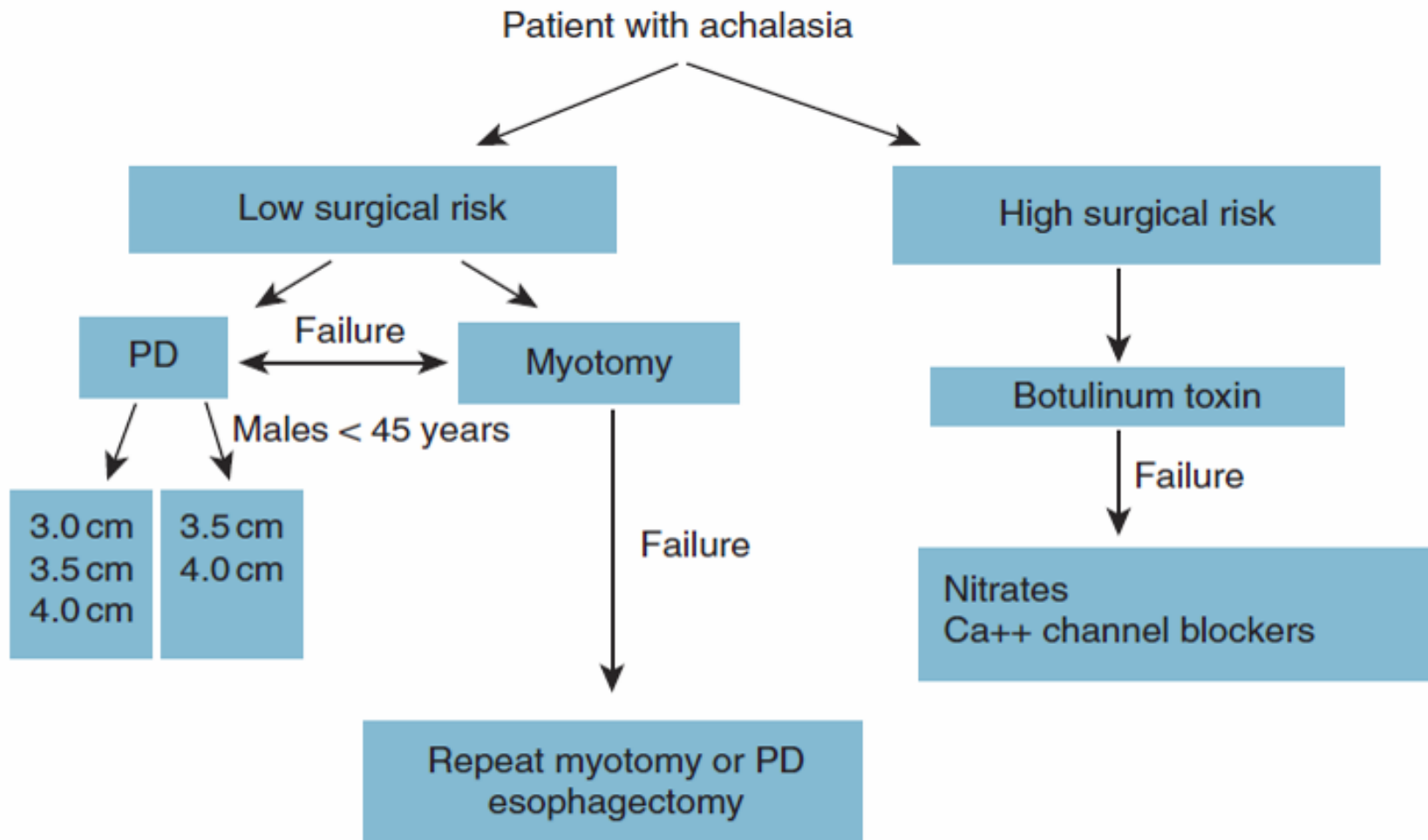


Figure 2. Recommended treatment algorithm for patients with achalasia. PD, pneumatic dilation.

*POEM should only be performed in the context of clinical trials with the understanding that other effective well-studied alternatives are available

Review

Achalasia

A Systematic Review

John E. Pandolfino, MD, MSCI; Andrew J. Gawron, MD, PhD, MS

- Manometry should be performed if achalasia suspected
- RCTs support treatments focused on disrupting LOS:
 - Pneumatic dilatation 70-90% effective
 - Laparoscopic myotomy 88-95% effective
 - Variable prognosis after endoscopic or surgical myotomy based on subtypes
 - Type II 96% > Type I 81% > Type III 65% favourable outcomes

Summary



- Pneumatic dilatation highly operator dependent and inferior to myotomy
- Laparoscopic Heller's myotomy with partial fundoplication current gold standard
- POEM emerging as promising alternative but steep learning curve and requires more RCTs and long-term data

References

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- Vaezi et al. ACG Clinical Guideline: Diagnosis and Management of Achalasia. *Am J Gastroenterol* 2013; 108:1238–1249; doi: 10.1038/ajg.2013.196; published online 23 July 2013
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