

1

Upper GI Tract Course

Live

Approach to the patient with dysphagia



Part 2

Manometry in the assessment of dysphagia

48 minutes

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RUH Bath



NHS

South West

The Primary Care Society
for Gastroenterology



Oesophageal function

- **Normal function**

Requires co-ordinated **Peristalsis** and **Relaxation** of UOS and LOS

- **Abnormal function**

Dysphagia

Chest pain

Regurgitation

Investigation

- **Endoscopy**
- **Barium swallow**
- **High Resolution Manometry**
 - High Resolution with Impedance (HRiM)
 - High Resolution with pH (HRMpH)
- **FLIP** - Functional Lumen Imaging Probe

Causes for dysphagia

- **Dysphagia to solids**

Often mechanical (stricture, cancer)

Causes for dysphagia

- **Dysphagia to solids**

Often mechanical (stricture, cancer)

- **Dysphagia to liquids (+/- solids)**

Often **motility**, but can be mechanical

Causes for chest pain

“Oesophageal spasm”

Only **1-2%** of patient having manometry have a spastic disorder

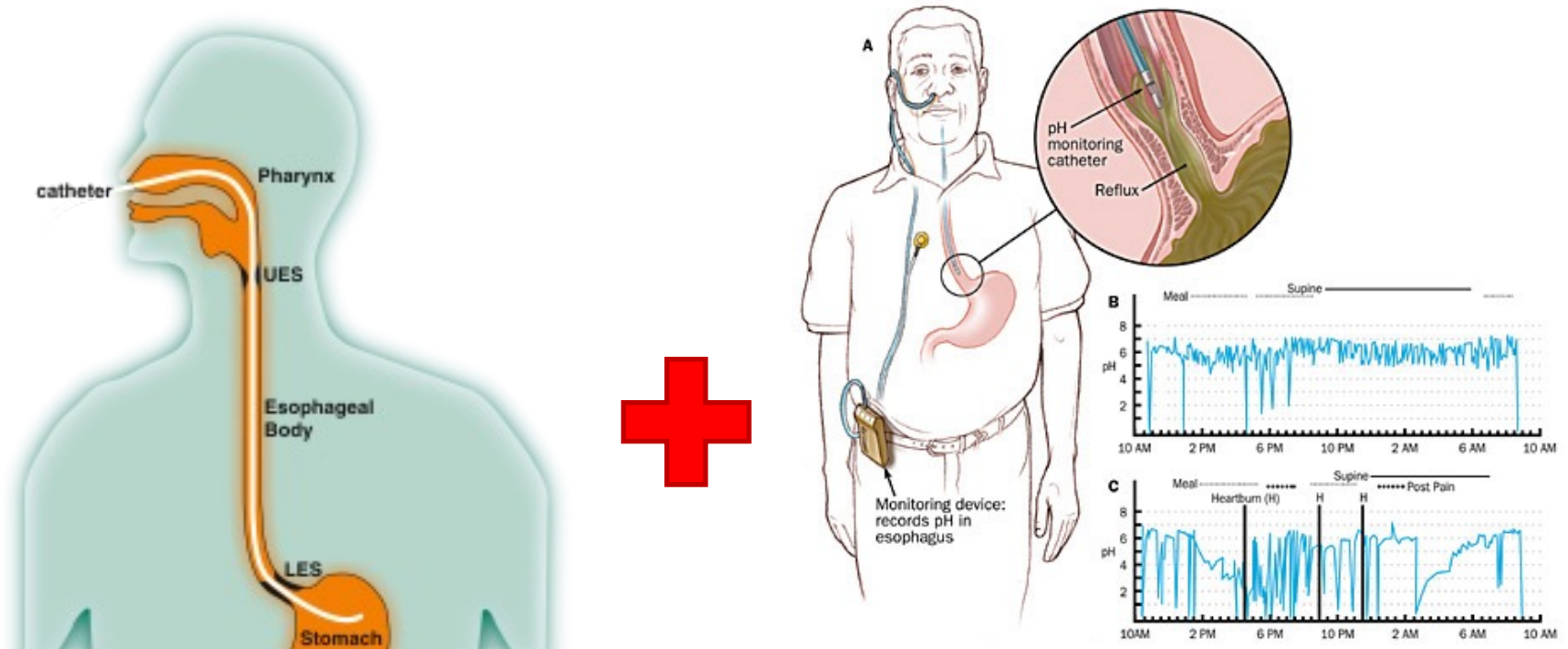
If chest pain is solo symptoms

Exclude cardiac (1 in 4 deaths)

Exclude reflux (1 in 3)

Background

- Oesophageal Manometry & 24hrs reflux monitoring



Technologies & equipment

Two main technologies

Solid-state

Water perfused

Standard resolution manometry uses 4 – 8 sensors

Need “pull-through” due to small sensor number

High resolution manometry

21 – 36 sensors for measurement

Technologies & equipment

Upper GI – Standard Resolution

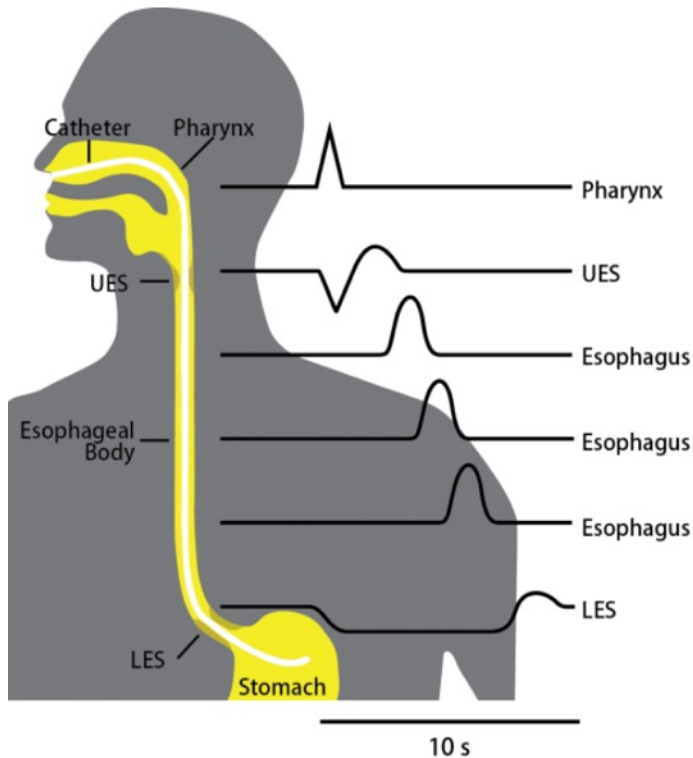
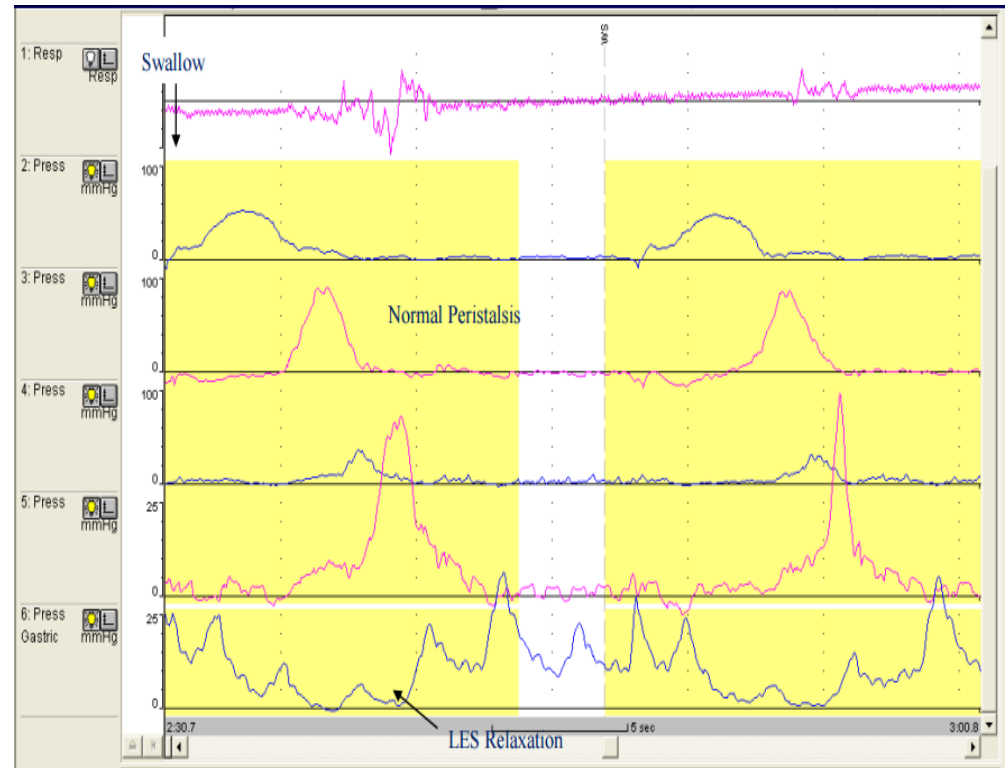
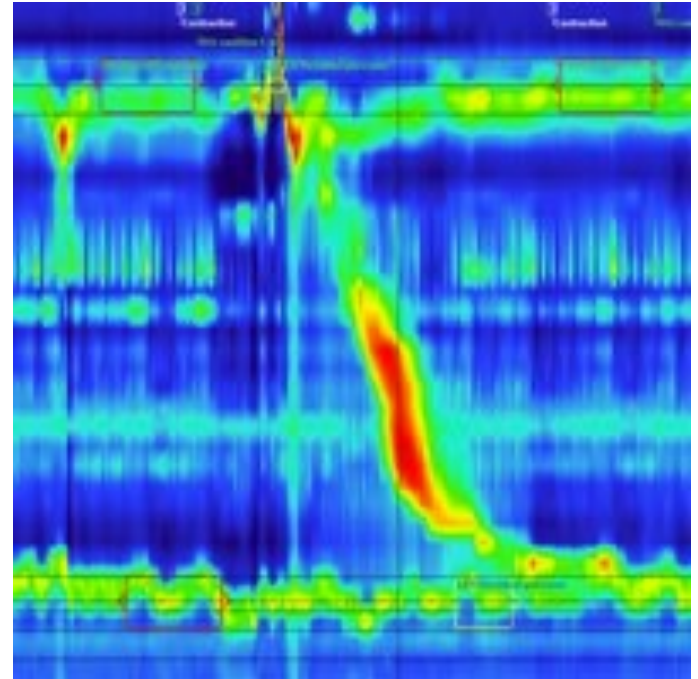
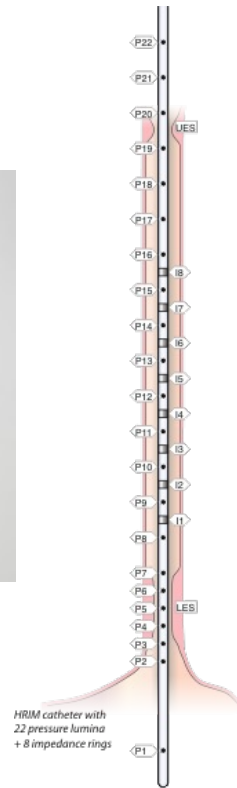


Image Credit: Laborie



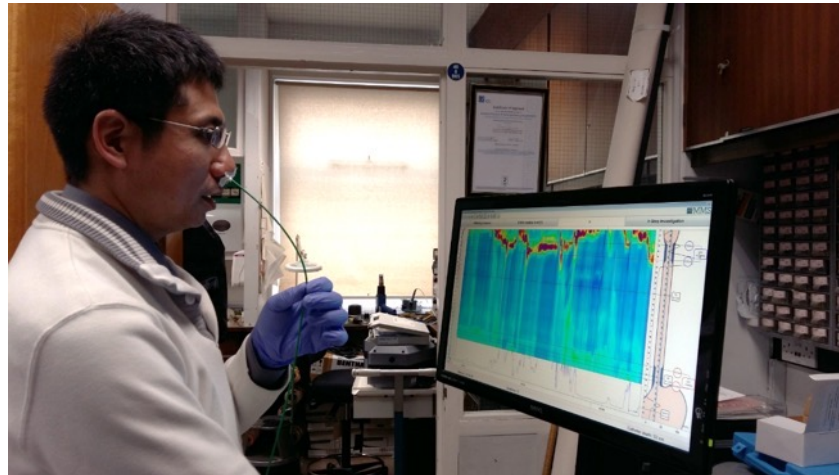
Technologies & equipment

Upper GI – High Resolution



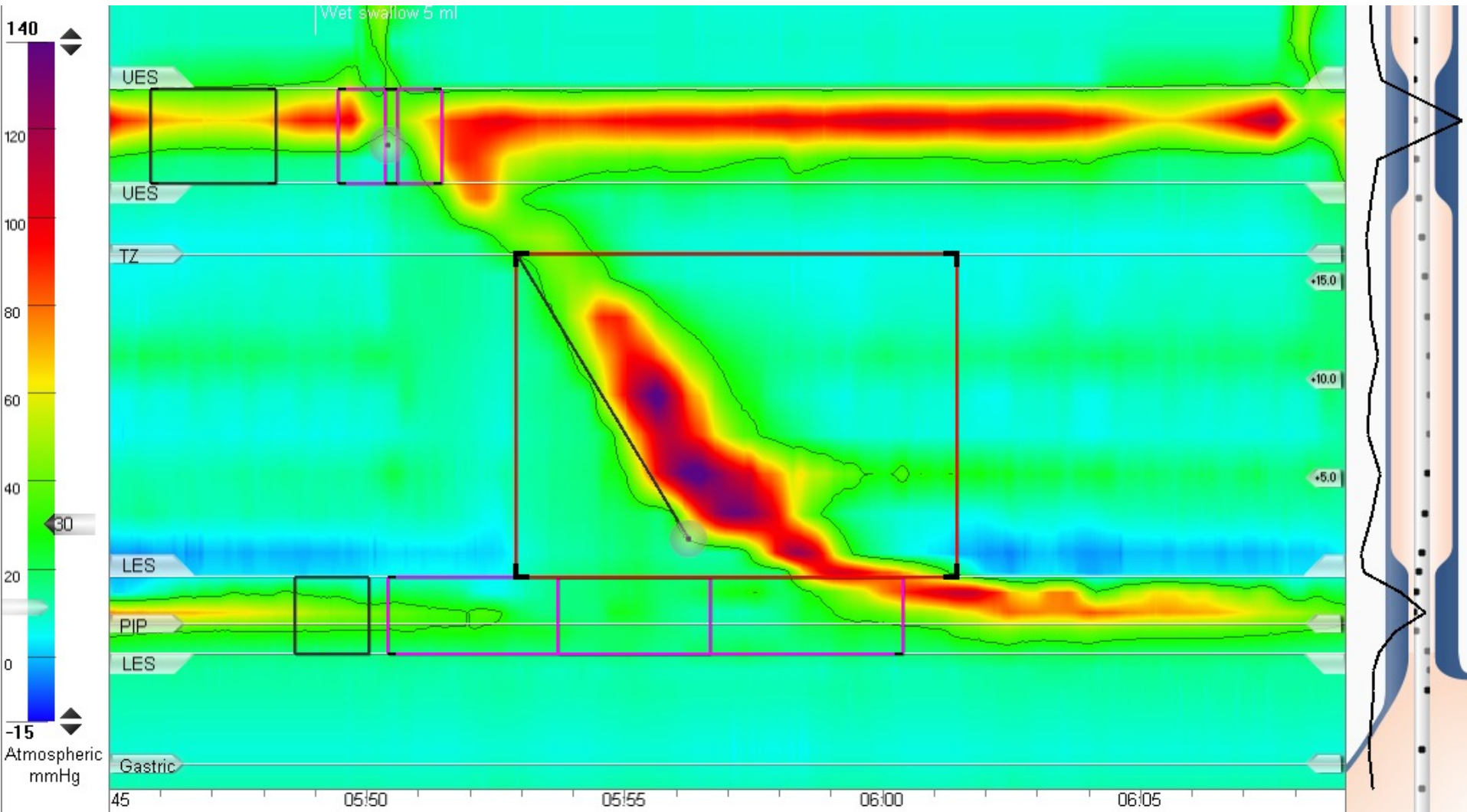
Technologies & equipment

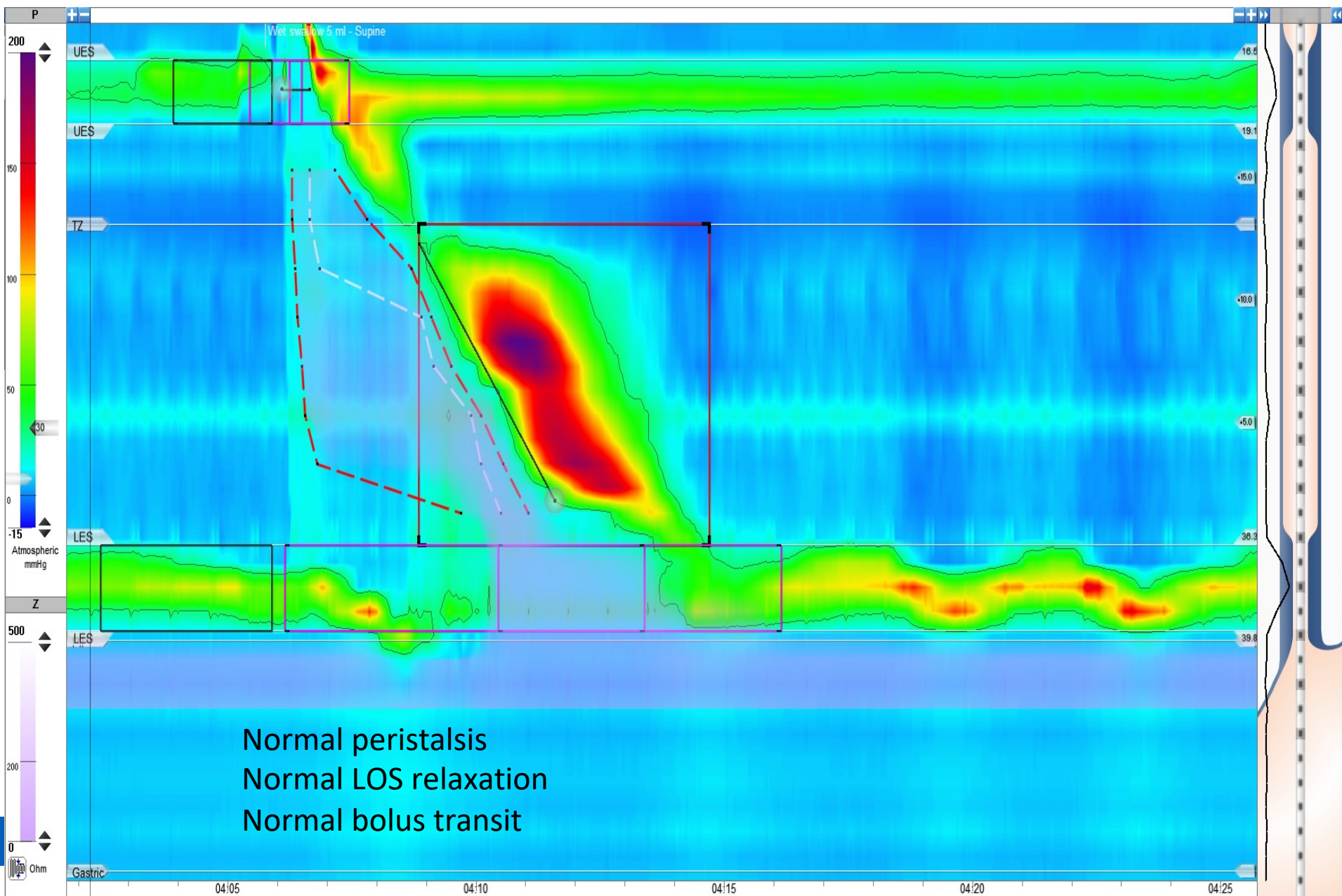
- The RUH system (since 2019):
 - 36 channels pressure
 - 12 channels impedance
 - Catheter size 8 fr
 - Currently only 3 hospitals have this ultra-thin catheter size (12 fr is the standard size)

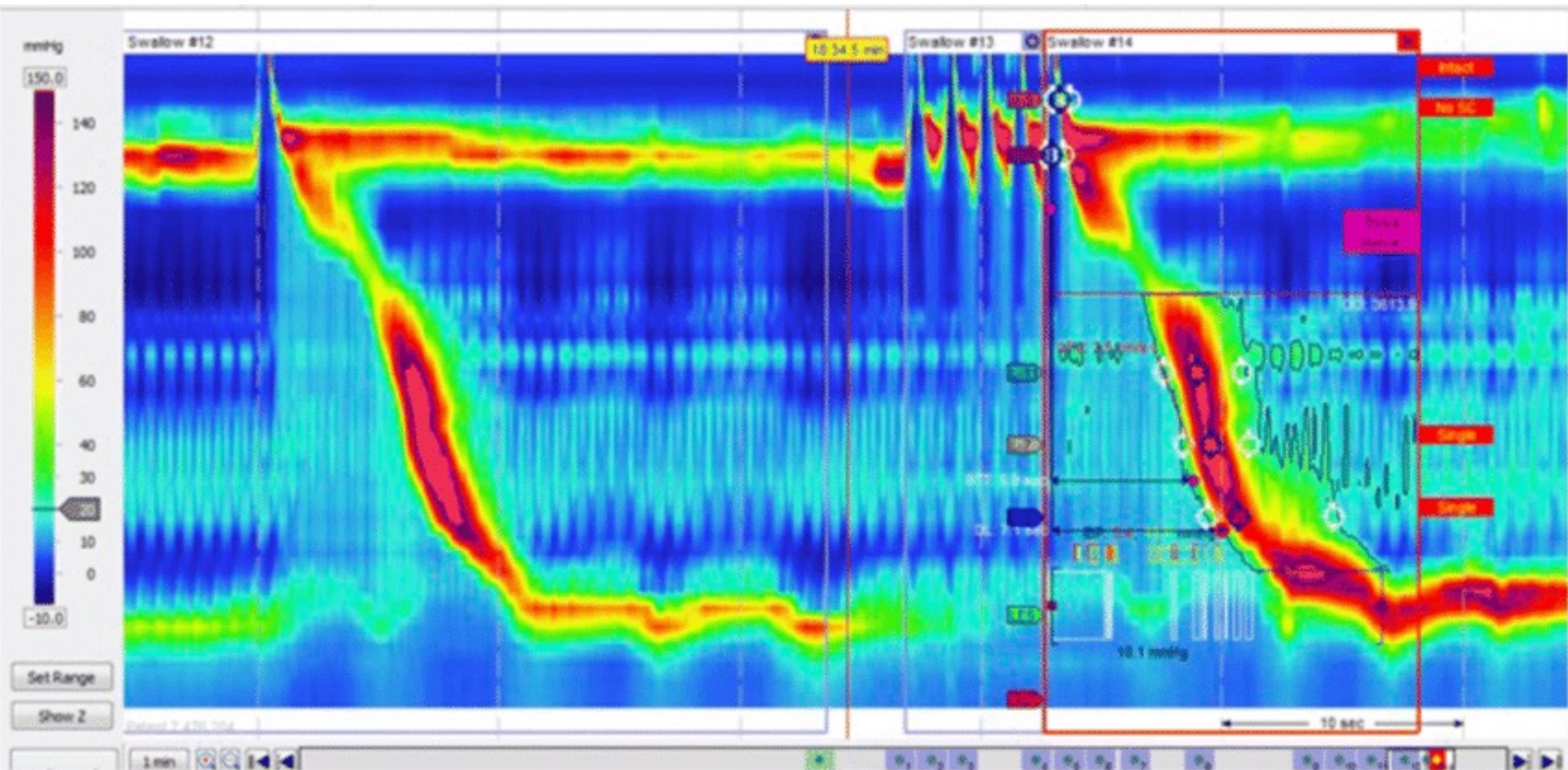


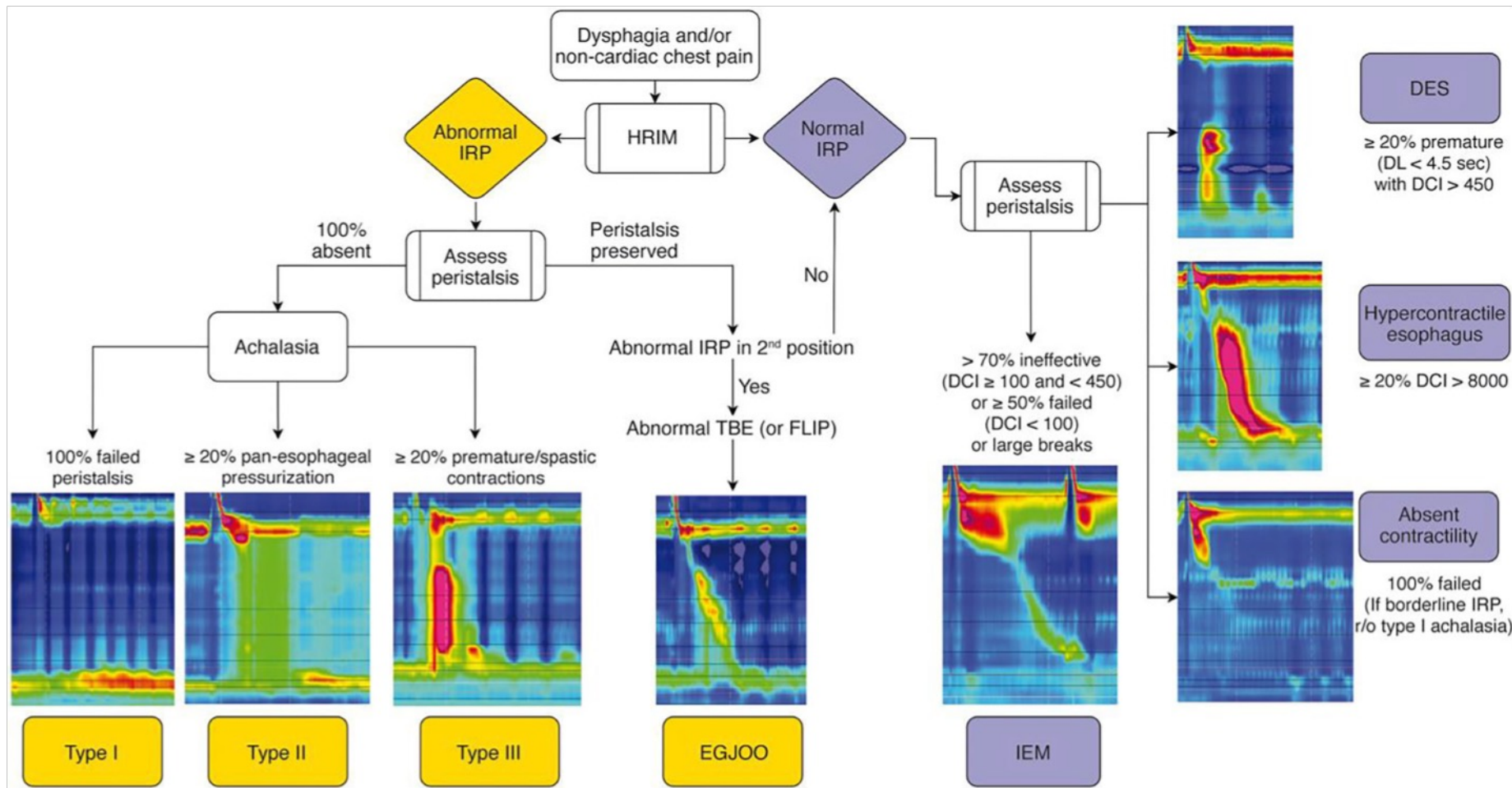
HRM Metrics

- **Integrated relaxation pressure (IRP)**
 - adequacy of swallowing induced LOS relaxation
- **Distal contractile integral (DCI)**
 - assess oesophageal smooth muscle contraction including length , amplitude and duration
- **Distal latency**
 - measure timing of peristalsis

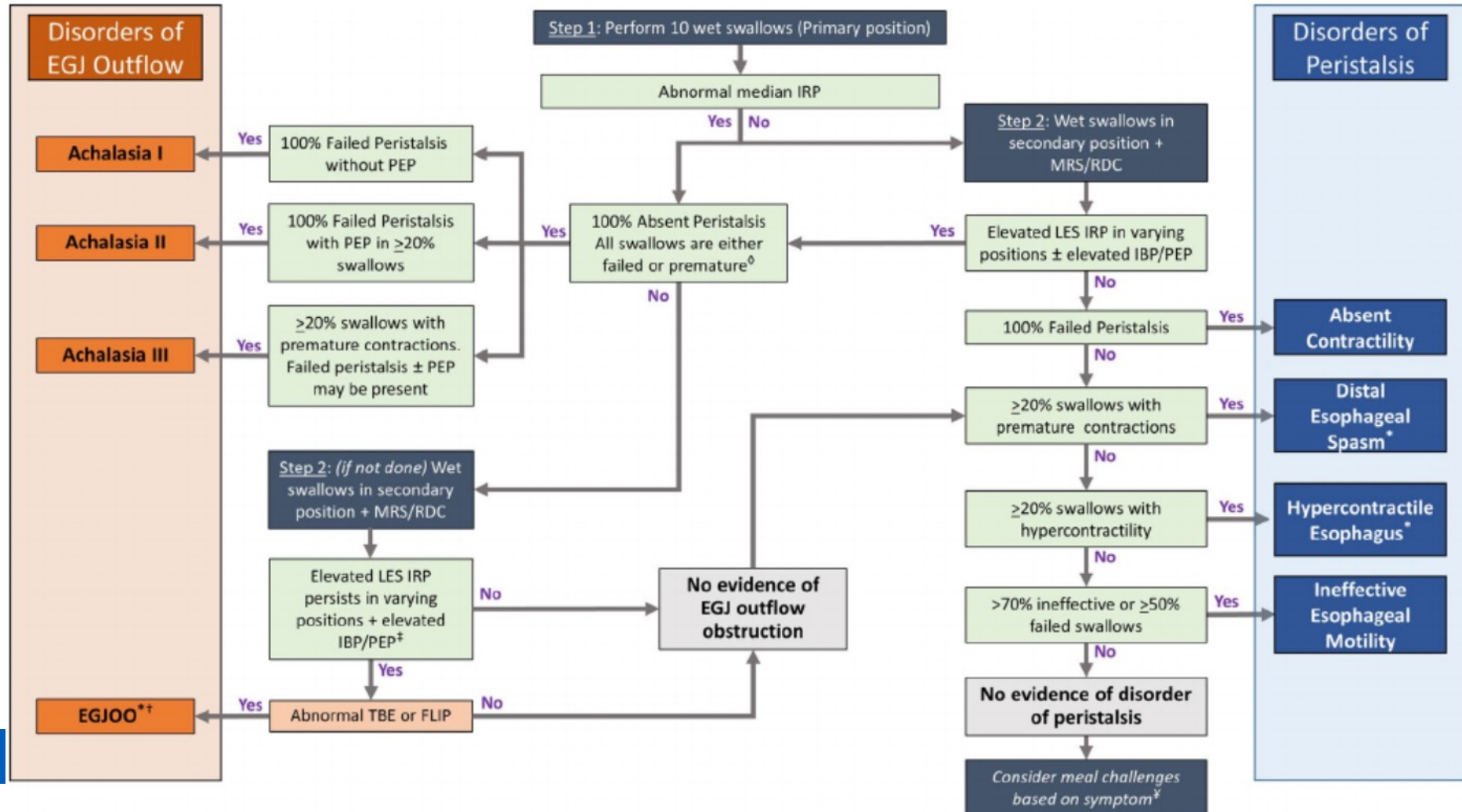








Chicago Classification



Disorders of Oesophagogastric junction **Outflow**

- **Achalasia**
- **Oesophagogastric Junction (OGJ) Outflow Obstruction (OGJOO)**

Disorders of Oesophageal **Peristalsis**

- **Spastic Motor Disorders**
 - Distal Oesophageal Spasm
 - Hypercontractile Oesophagus
- **Hypomotility Disorders**
 - Ineffective oesophageal motility
 - Absent contractility

Mucosal Disease, Systemic Disease, Medications

Impact On Motility

- **Eosinophilic Oesophagitis**
- **Connective tissue disorders**
- **Opioid induced oesophageal dysfunction (OIED)**

Post Surgical Oesophageal Motility Disorders

- **Fundoplication**
- **Bariatric surgery**

Achalasia

Achalasia

- Selective loss of inhibitory neurones
- Unopposed excitatory activity
- Localised decrease in inhibitory activity
- Failure of LOS relaxation and disrupted peristalsis

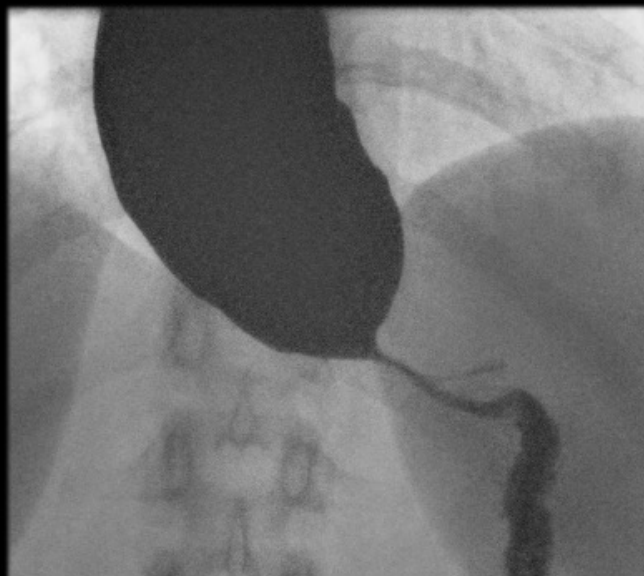
Achalasia

- Selective loss of inhibitory neurones
 - Unopposed excitatory activity
 - Localised decrease in inhibitory activity
 - Failure of LOS relaxation and disrupted peristalsis
-
- Progressive dysphagia (solids and liquids)
 - Regurgitation
 - Chest pain
 - Heartburn
 - Weight loss



40 YEAR
F

Barium Swallow
Barium Swallow
18/02/2021 10:37:10
RD124450335



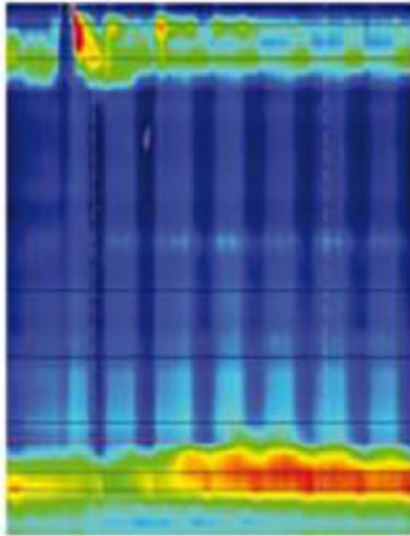
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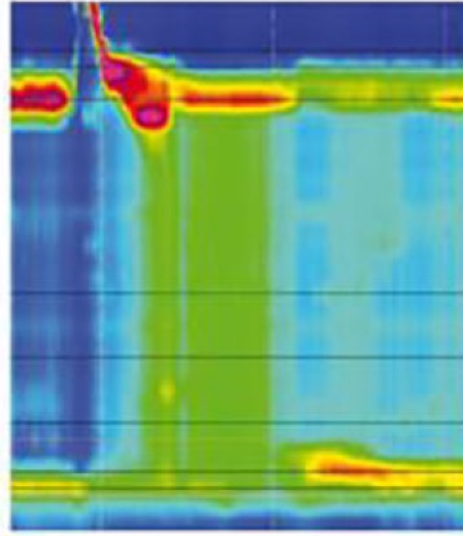
Achalasia

100% failed
peristalsis



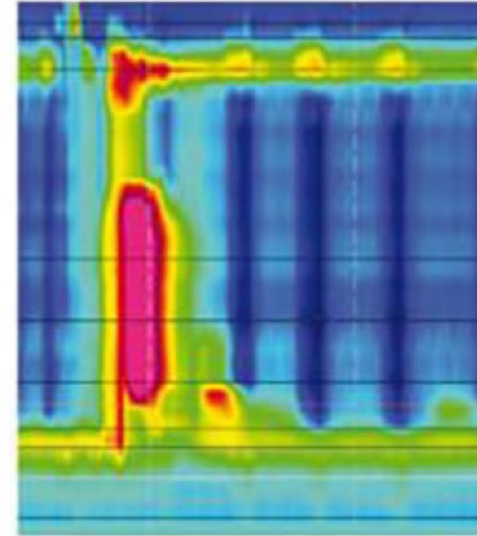
Type I

$\geq 20\%$ pan-esophageal
pressurization



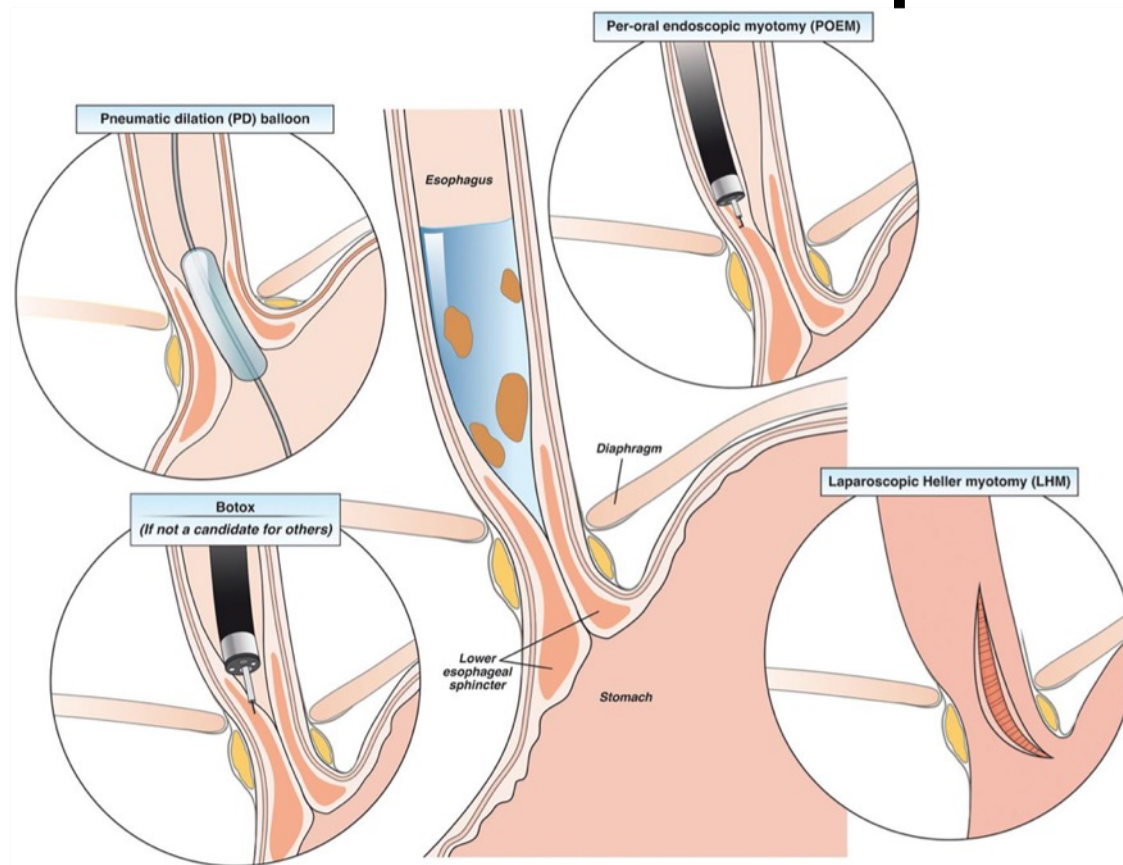
Type II

$\geq 20\%$ premature/spastic
contractions



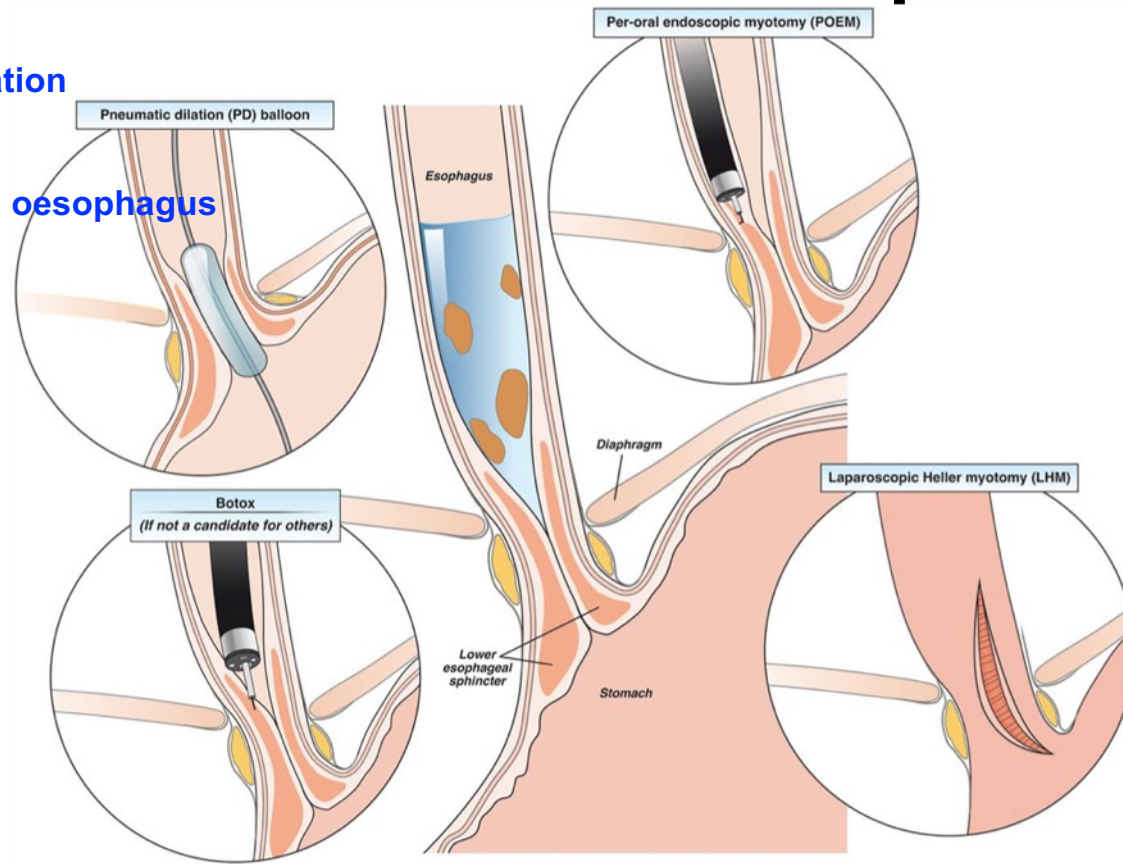
Type III

Achalasia Treatment Options



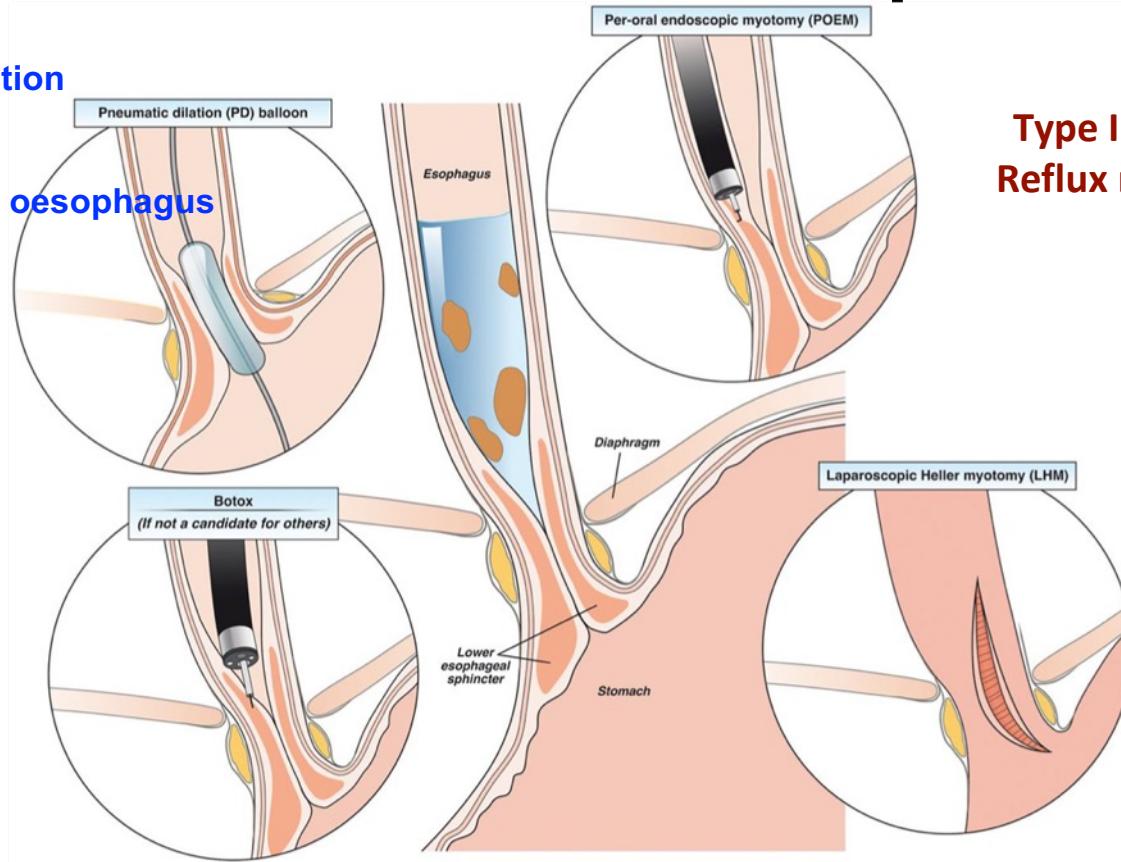
Achalasia Treatment Options

Small risk of perforation
Over 45 yrs
Female
Narrow / non dilated oesophagus
Type II
Can repeat



Achalasia Treatment Options

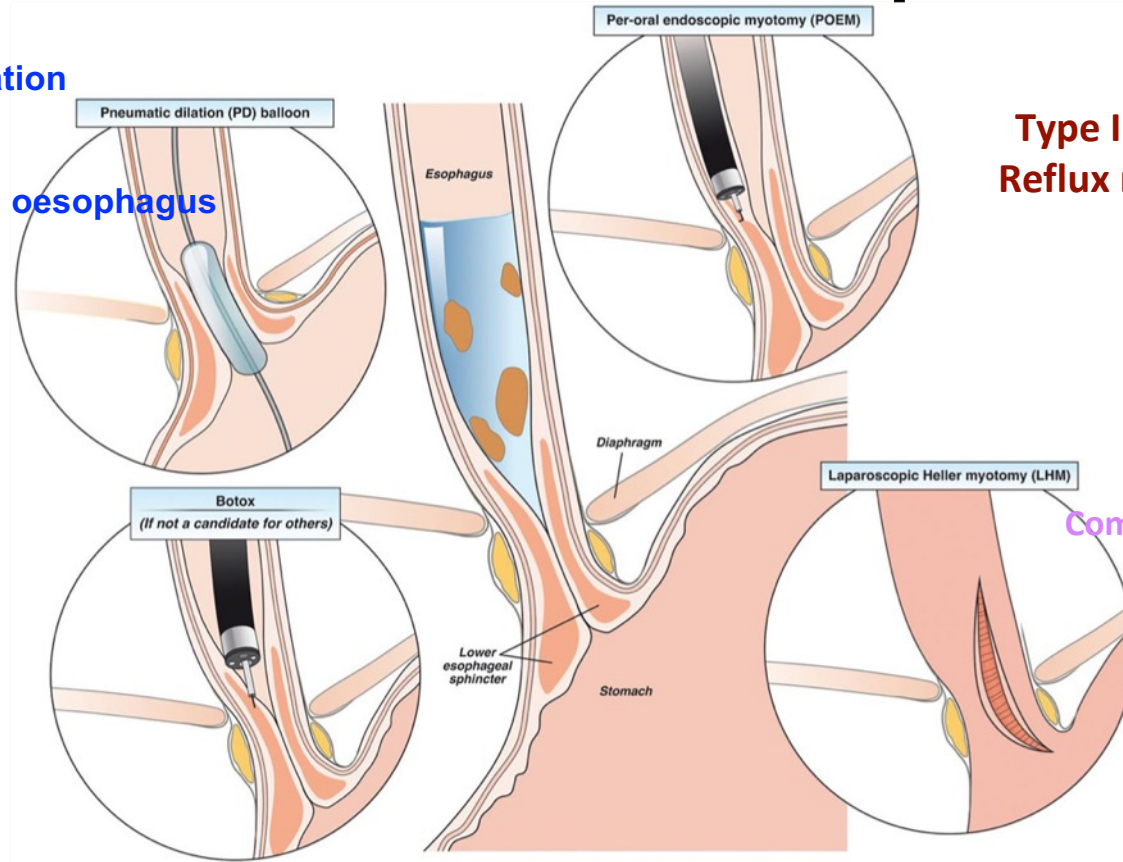
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Type III achalasia
Reflux more likely

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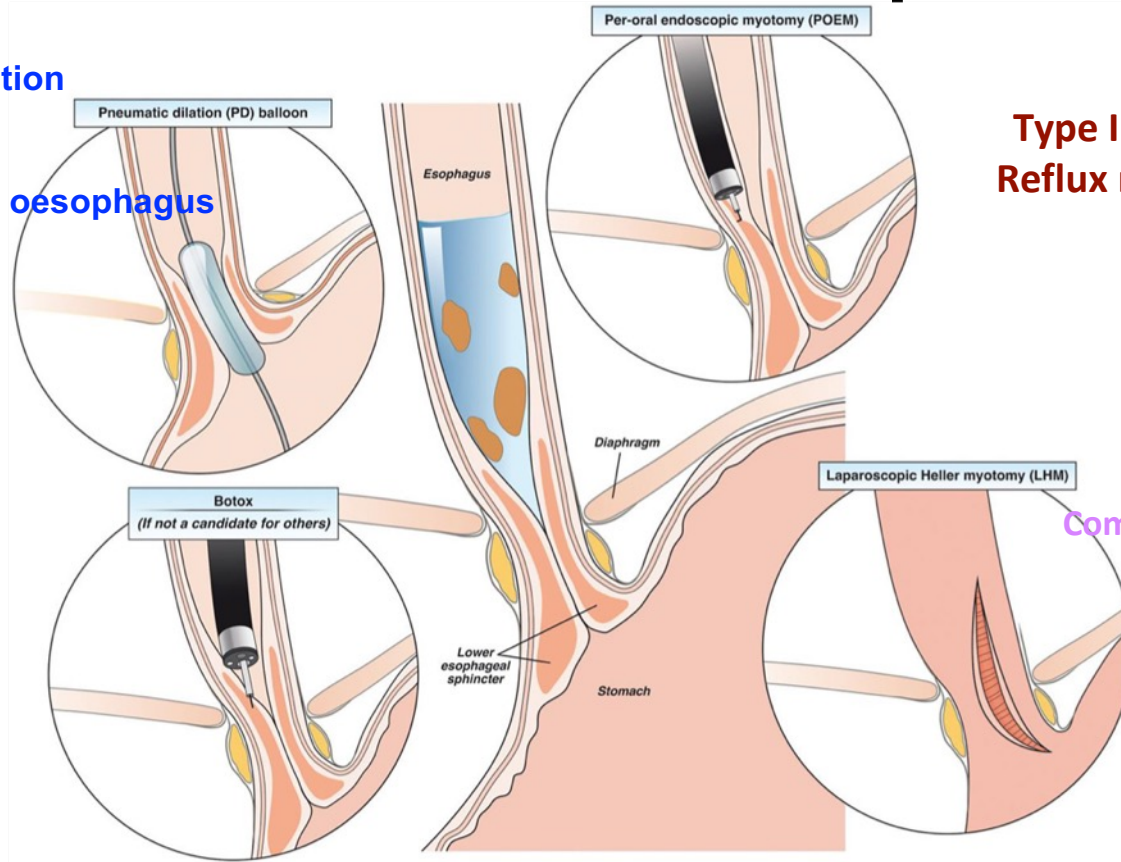
Type III achalasia
Reflux more likely

Combine with fundoplication
Young men
Tortuous oesophagus
Diverticulum
Type II better

Achalasia Treatment Options

Small risk of perforation
Over 45 yrs
Female
Narrow / non dilated oesophagus
Type II
Can repeat

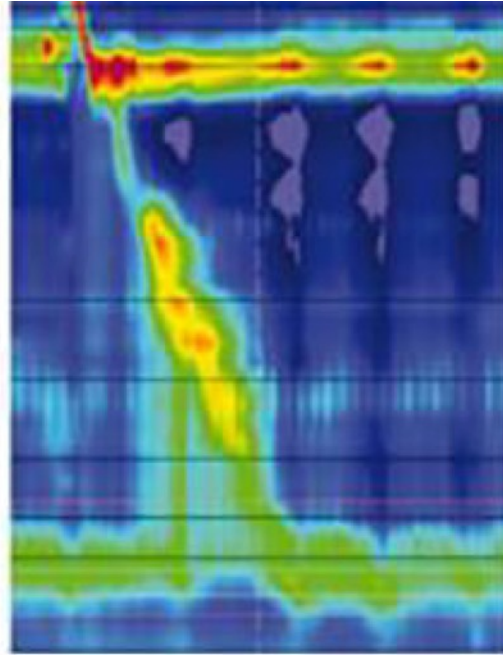
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Type II better

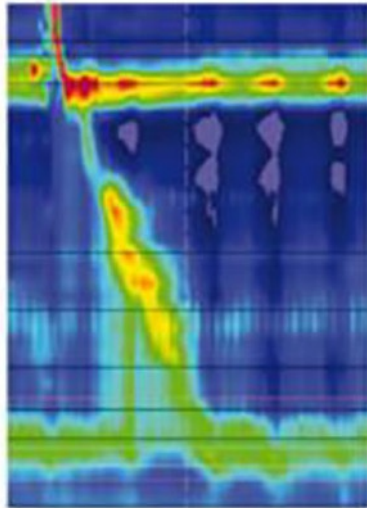
If not fit
80% 1/12
70% 3/12
50% 6/12
40% 12/12

Oesophagogastric Junction Outflow Obstruction



EGJOO

Oesophagogastric Junction Outflow Obstruction



EGJOO

- Non mechanical dysphagia (**endoscopy**)
- Not achalasia
- Could be variant of achalasia

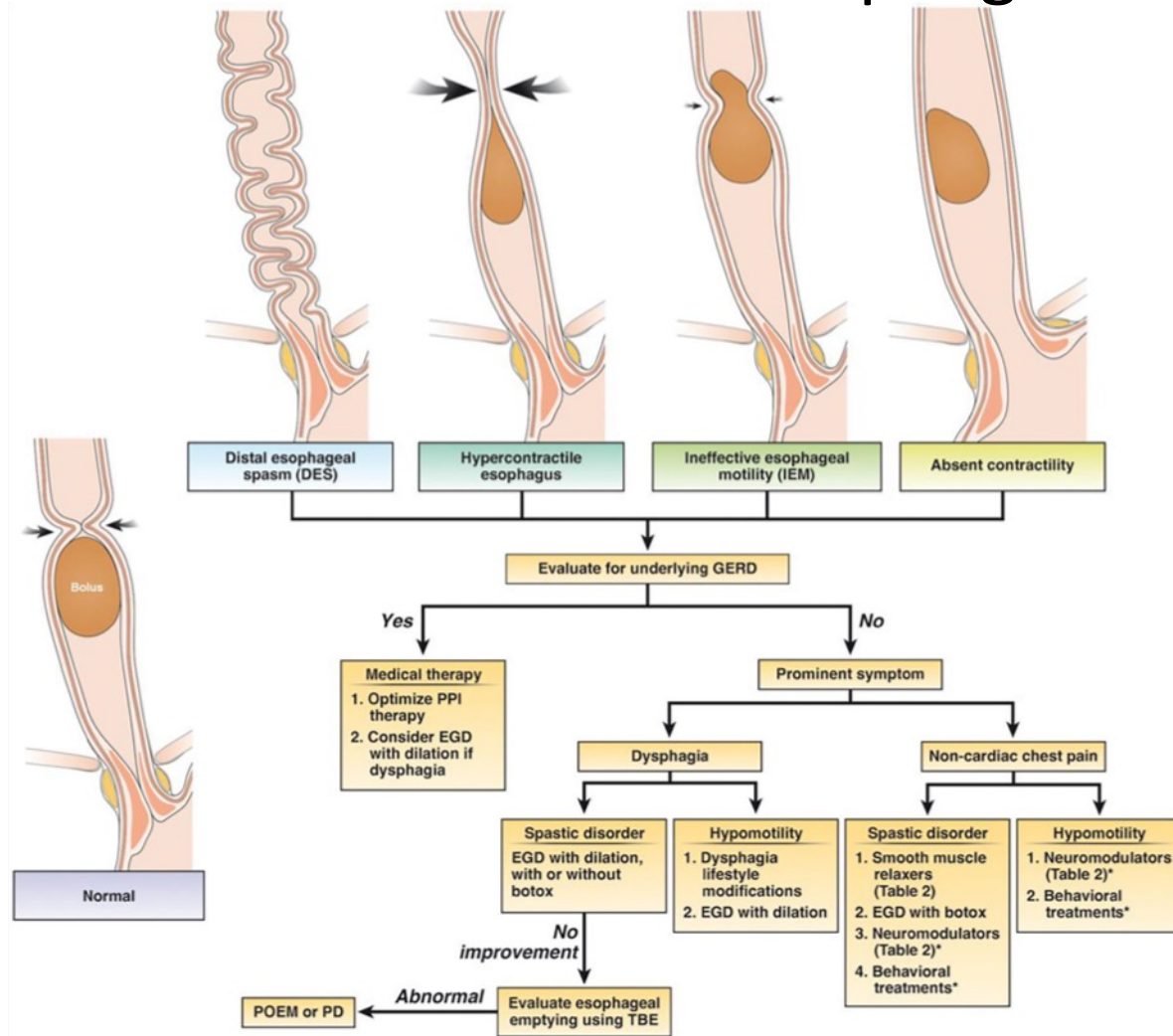
Could be artefact

- Fundoplication
- Bariatric Surgery
- Hiatus hernia
- Obesity
- Cancer

To confirm diagnosis

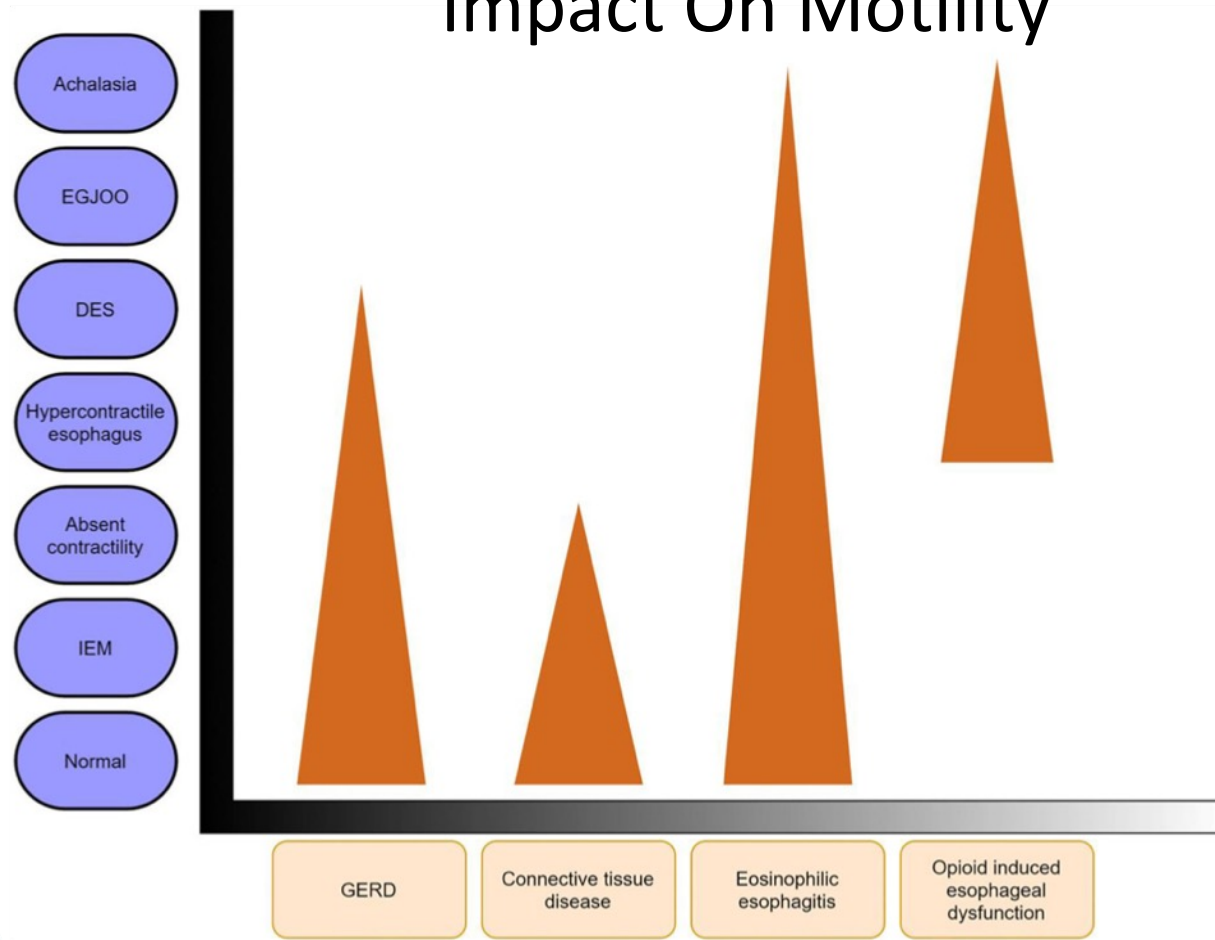
- HRM
- Symptom - Dysphagia or Pain
- 2nd test - Barium Swallow or FLIP showing hold up

Treatment for disorders of Oesophageal Peristalsis



Mucosal Disease, Systemic Disease, Medications

Impact On Motility



Approach to Management of Dysphagia

- Good history
 - Dysphagia
 - Chest pain
 - Reflux
 - Secondary causes
 - Drugs
 - Surgery
 - CT disorders
- OGD and biopsies
- Barium Swallow

Approach to Management of Dysphagia

- High Resolution Manometry
- Consider pH studies
- LOS problems
 - Achalasia – Good treatment options
 - EGJOO – Rare - probably something else
- Motility (Peristalsis) problems
 - Mostly asymptomatic – reassure, do nothing
 - Exclude secondary causes – Reflux, Drugs, Oesophagitis
 - Dysphagia – Botox, Balloon dilatation
 - Chest pain - Neuromodulators

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Approach to the patient with dysphagia



End of Part 2 Manometry in the assessment of dysphagia

Any questions?

Please email richard.krystopik@nhs.net



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