



רמב"ם  
הקריה הרפואית  
לבריאות האדם

# A CURIOUS CASE OF HYPERTENSIVE LES

*Erez Hasnis*

*Department of Gastroenterology  
Rambam Health Care Campus*

# *CASE DESCRIPTION*

- 63yo, F, single, attending nurse.
- PMH includes T2DM (Sitagliptin/Metformin), Hyperlipidemia
- Early 2014: Solid dysphagia, Epigastric discomfort, weight loss
- Gastrosocopy: HP-related antral gastritis, received TT
- Normal colonoscopy (+ive OBT)
- Normal CTE

# *CASE DESCRIPTION CONT.*

- 02/2015 – 20 Kgs lost
- Conventional manometry performed:
  - LES pressure up to 75mmHg with swallow
- Diagnosed as Hypertensive LES
- Treated with Adalat

- 2wks after starting Adalat, feels better, no weight gain
- 8wks later, no weight gain, feels pulsating epigastrium
- Sent to Rambam for HR manometry

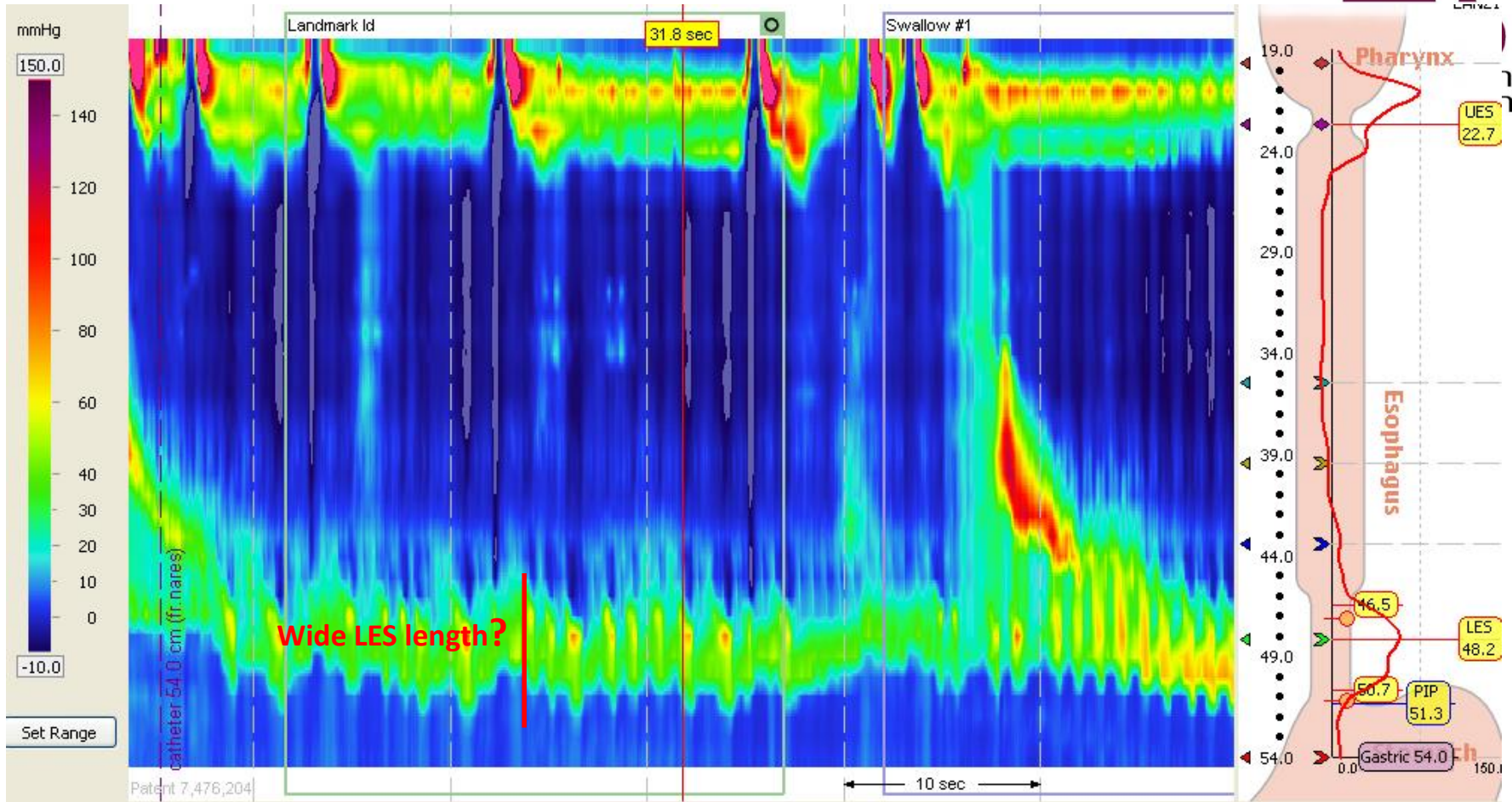
# *IN OUR EXAMINATION*

- Very thin, cachectic patient
- Solid food dysphagia, mainly with oranges and bananas. Early satiety and epigastric pain

# HIGH RESOLUTION ESOPHAGEAL PRESSURE TOPOGRAPHY

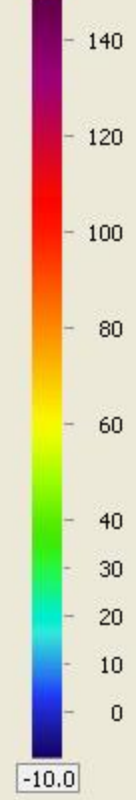


הקור  
לכר

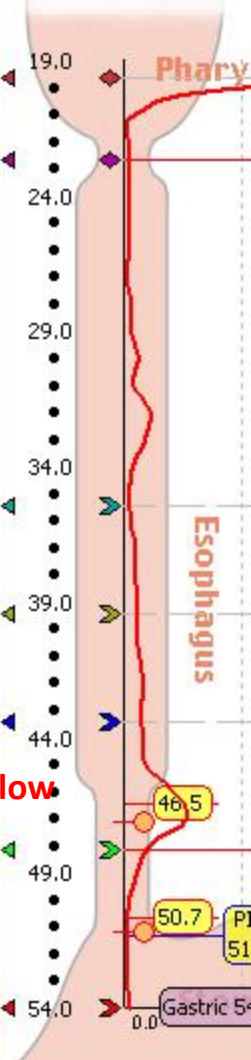
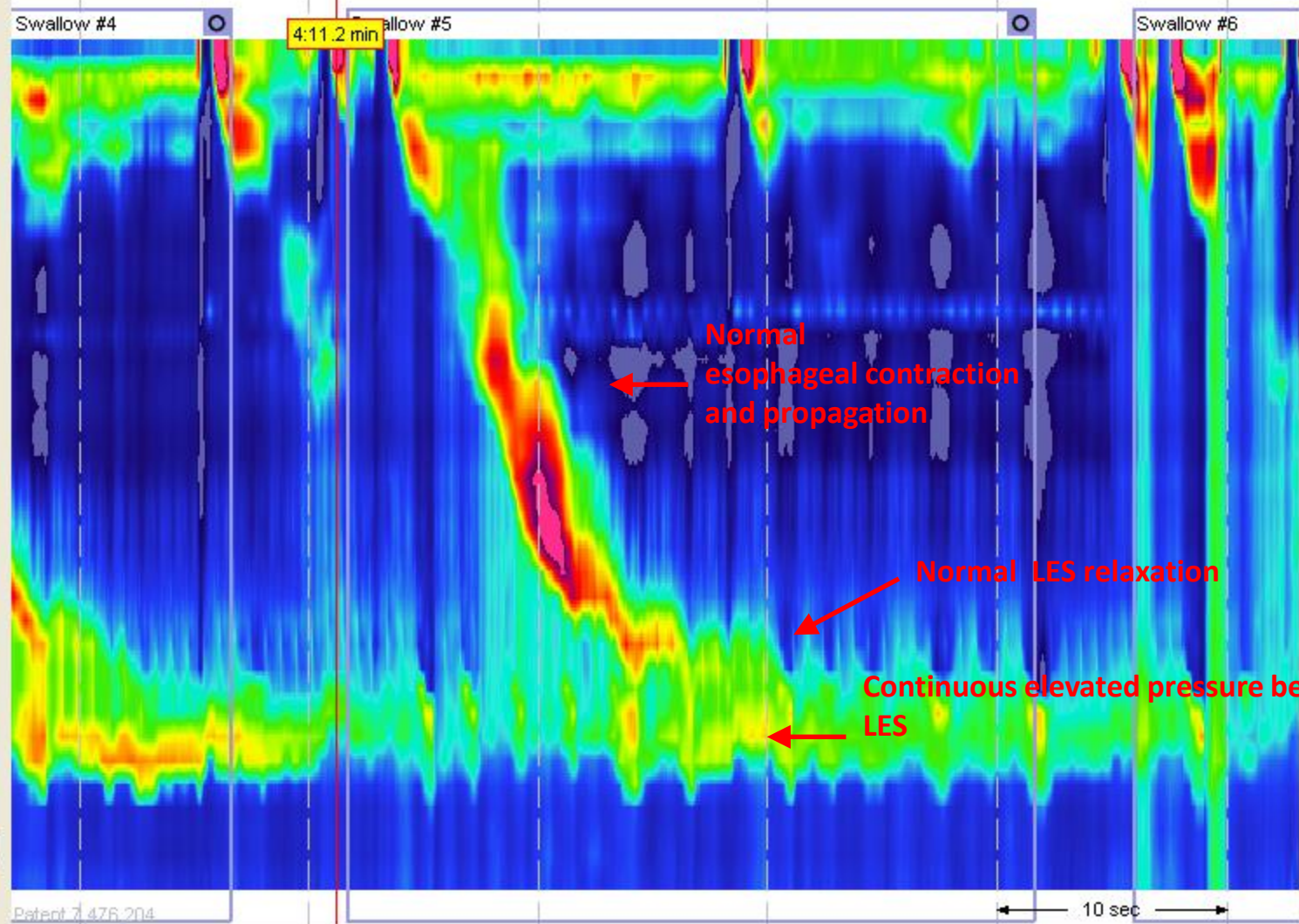


mmHg

150.0



Set Range



Display Mode

Play

Atmosph



Trace Channel Snapshot

Log Data

Landmark & Pressures

Swallows (avg)

Hide Data

00:04:11  
19.7: 148.9  
22.7: 2.7  
35.5: 3.3  
39.5: 7.3

LES Press(resp min): 27.3 mmHg  
LES Press(mean): 39.4 mmHg  
LES Length: 4.2 cm  
LES Intraab Seg: 0.0 cm  
LES Pressure: 33.7 mmHg

LES Resid Press: 24.1 mmHg  
DCI: 2194.5 mm  
CFV: 2.8 cm/s  
Distal Latency: -2.2 s  
Intrabolus P (@LESR): 13.9 mmHg

Fr. Nares  
Mode  
Gastric

Catheter Position: 5

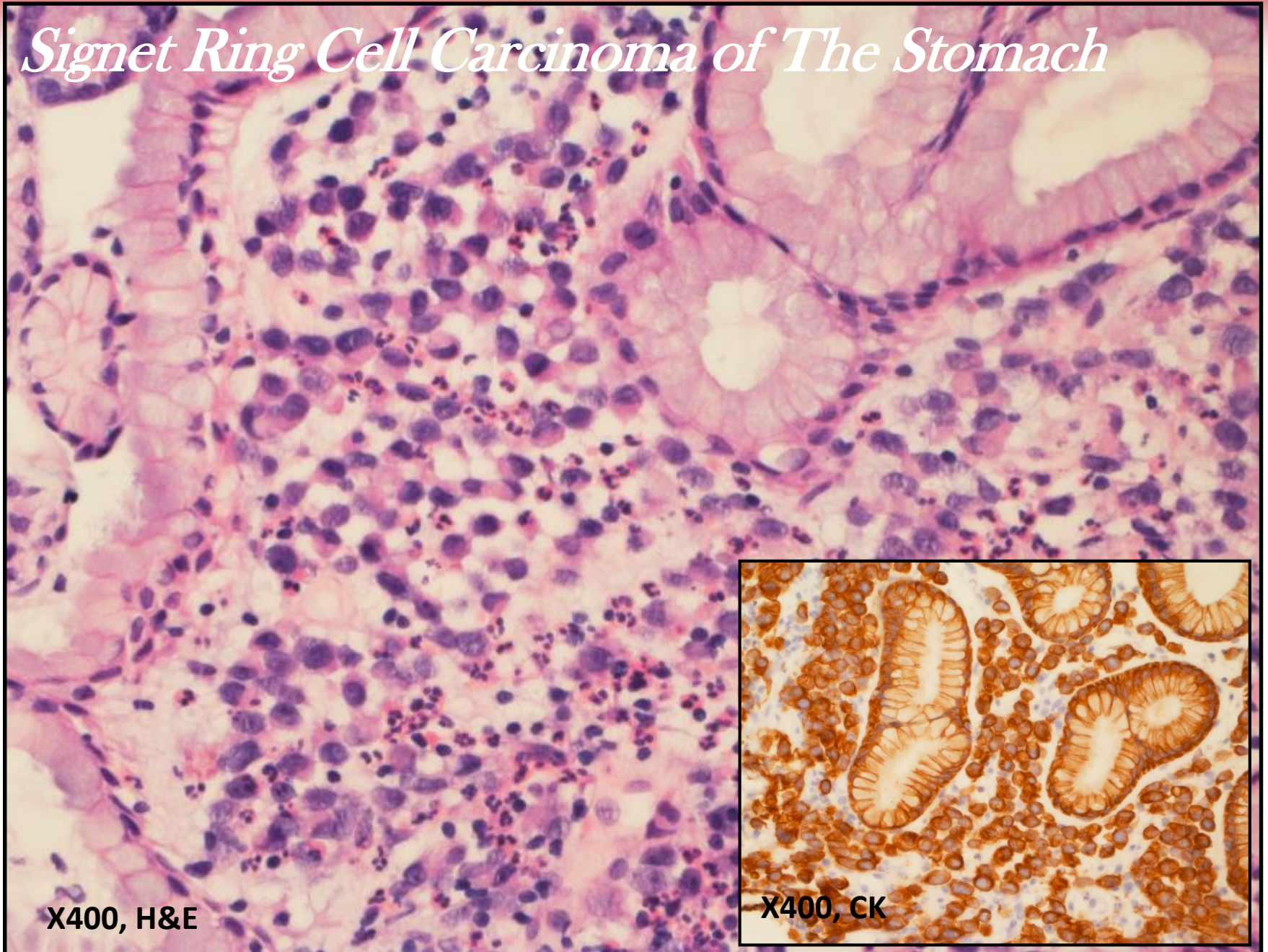
Patient ID: 5052898-3

Patient Name: Samira Na

- Gastroscopy: Thickened gastric cardiac folds
- EUS: Thickened gastric folds - diffuse



# *Signet Ring Cell Carcinoma of The Stomach*



X400, H&E

X400, CK

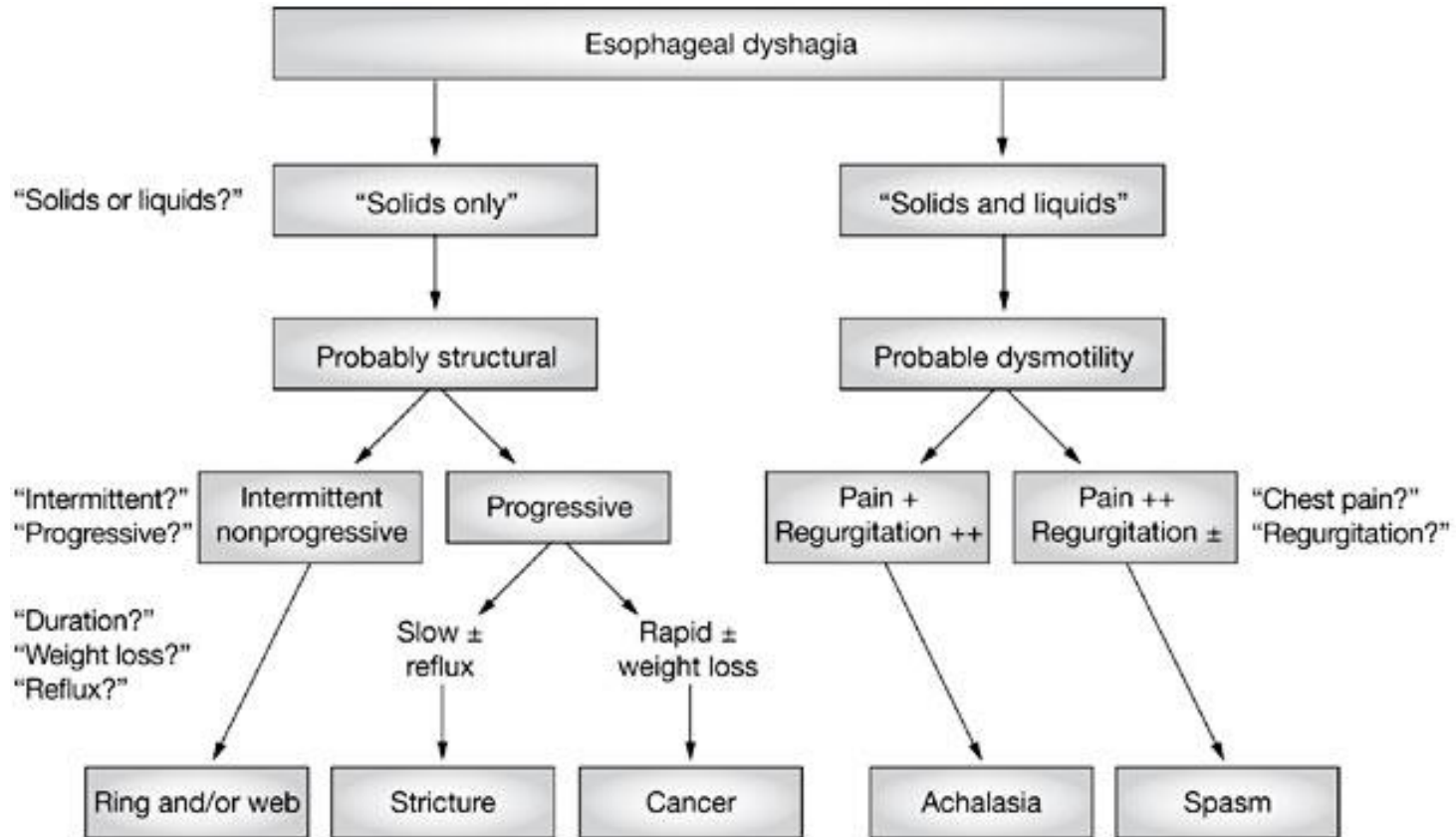
# *CT SCAN*



Thickening of  
gastric wall →

- Patient underwent total gastrectomy with esophagojejunostomy

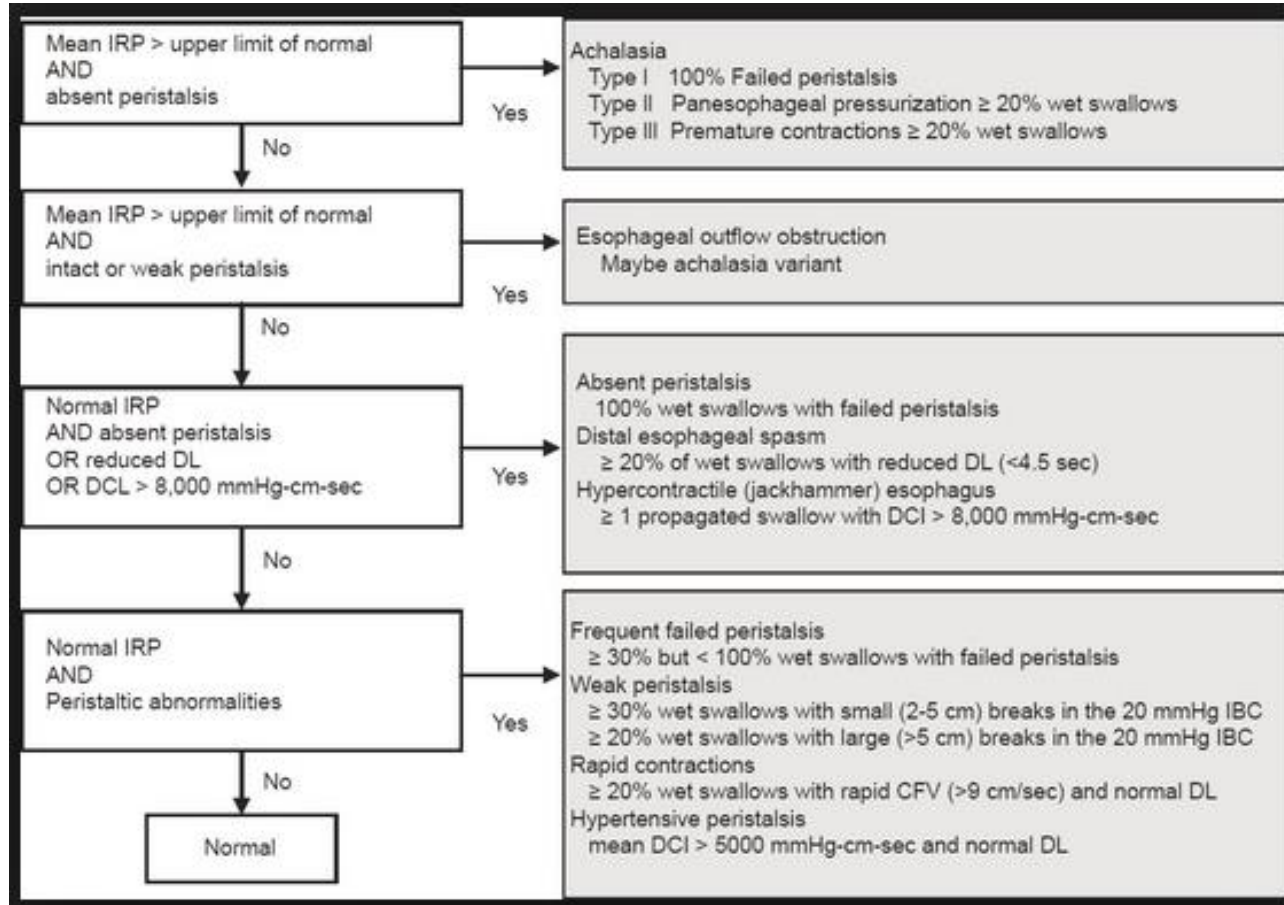
# ESOPHAGEAL CAUSES FOR DYSPHAGIA



Cook I et al; *Nat Clin Pract Gastroenterol Hepatol*, 2008

# DIFFERENTIAL DIAGNOSIS

## The Chicago Classification of Esophageal Motility Disorders (2011)<sup>1</sup>



**Achalasia**  
Type I (classic)  
Type II (compressive)  
Type III (spastic)

**Chagas' disease**

**Achalasia variant**

**Pseudoachalasia**

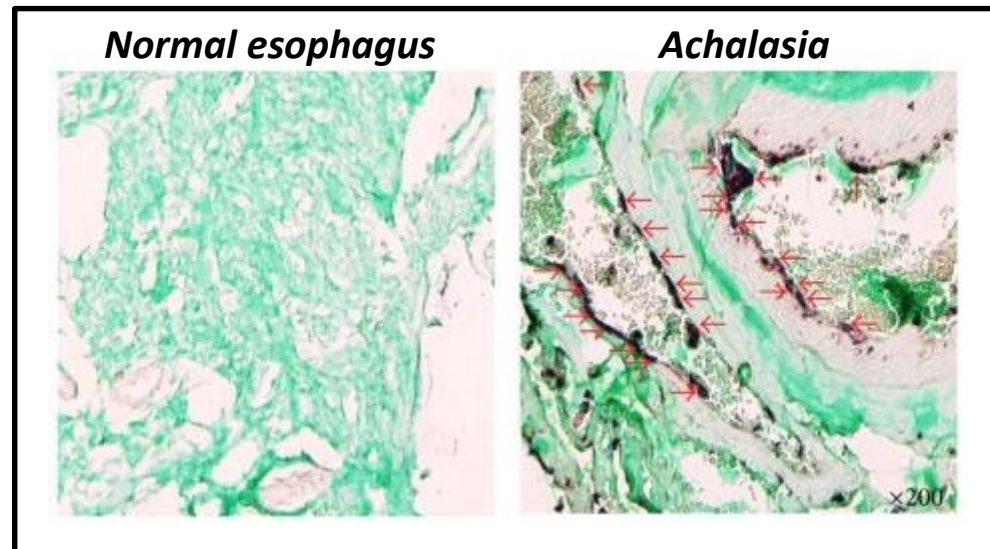
**Other abnormalities not meeting manometric criteria**

# *THE HYPERTENSIVE LOWER ESOPHAGEAL SPHINCTER (HTLES)*

- An uncommon, poorly characterized motility disorder of unknown clinical significance, associated with chest pain and dysphagia.
- Definitions:
  - Mean LES resting pressure greater than 26 mm Hg (ninety-fifth percentile of normal)
  - Normal peristalsis
- Gockel et al., J Gastrointest Surg 2003, described 100 cases:
  - 80% females
  - Mean age 54.7 years ( 23 - 89 years)
  - Symptoms: Regurgitation (75%), heartburn (71%), dysphagia (71%), and chest pain (49%).
  - Most common presenting symptoms: Heartburn and dysphagia.
  - Increased intrabolus pressure (manometric measure of outflow obstruction)
  - Increased residual LES pressure (during LES relaxation induced by a water swallow)
  - Only 26% had increased distal esophageal acid exposure in 24-hour pH monitoring
  - Tx. Options:
    - Anticholinergics and smooth muscle relaxants are often used but are of unproven value.
    - Low-dose tricyclic antidepressants improve the chest pain in these patients
    - Cognitive behavioral therapy
    - Nissen fundoplication for hypertensive LES with GERD or type III hiatal hernia
    - Myotomy with partial fundoplication for isolated hypertensive LES

# ***ACHALASIA***

- Impaired LES relaxation + esophageal aperistalsis
- Relaxing LES hypertension in 60%
- Loss of ganglion cells within the myenteric (Auerbach's) plexus
- solid food dysphagia with variable degrees of liquid dysphagia
- Regurgitation, chest pain, weight loss, aspiration pneumonia
- Gradual onset of symptoms (2ys to diagnosis)
- Paradoxical heartburn – due to bacterial fermentation of retained food
- Etiology may be related to HSV-1 infection in predisposed population<sup>2</sup>



# *ACHALASIA VARIANT*

- The revised Chicago classification published in 2011 classifies some presentations as variant achalasia
- Almost as common as the classic type<sup>3,4</sup> :
  - Dysphagia 82% (c) vs. 48% (v)
  - Mean age 62 ±19y (c) vs. 53±14y (v)
- Three variant patterns emerged:
  - Impaired LES relaxation with normal/hypertensive peristalsis
  - Impaired/borderline LES relaxation with mixed peristalsis/simultaneous contractions
  - Impaired/normal LES and aperistalsis with occasional short segment peristalsis

---

3. Almansa et al. *Dis Esophagus*, 2015

4. Galey et al. *J Am Coll Surg*, 2011



# *CHAGAS' DISEASE*

- Brazil, Venezuela, Argentina and USA
- Etiologic agent: *Trypanosoma cruzi*
- Chronic destruction of autonomic ganglion cells throughout the body, 20yrs after acute infection
- Most common - chronic cardiomyopathy
- Esophageal involvement indistinguishable from achalasia, but LES involvement occurring late

# ***PSEUDOACHALASIA***

- 5% of manometry-defined achalasia are tumor-related
- Clues (but poor predictors):
  - Age > 50y
  - Symptoms duration < 1y
  - Early weight loss > 7kg
  - Resistance to endoscope passage of GEJ
- Endoscopic biopsy, CT, MRI, EUS should be applied
- 50% of cases – GEJ Adenocarcinoma
- Non malignant:
  - Amyloidosis
  - Eosinophilic gastroenteritis
  - Sarcoidosis
- Only very rarely due to paraneoplastic syndrome
- Pseudoachalasia secondary to bariatric surgery<sup>5</sup>

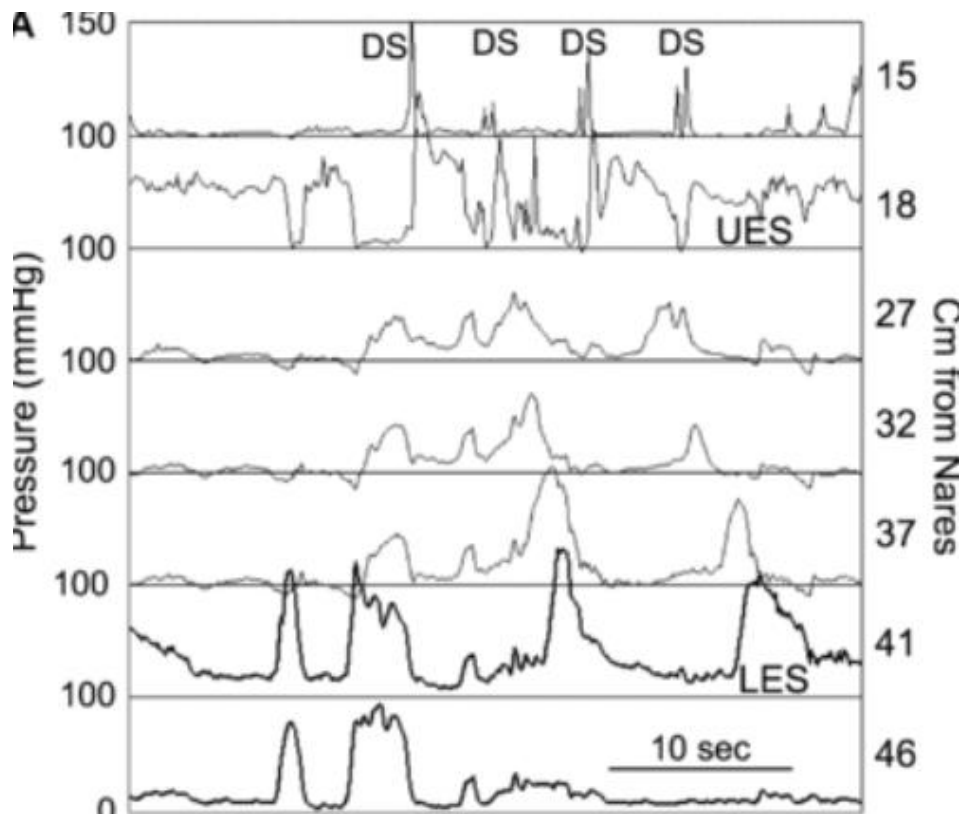
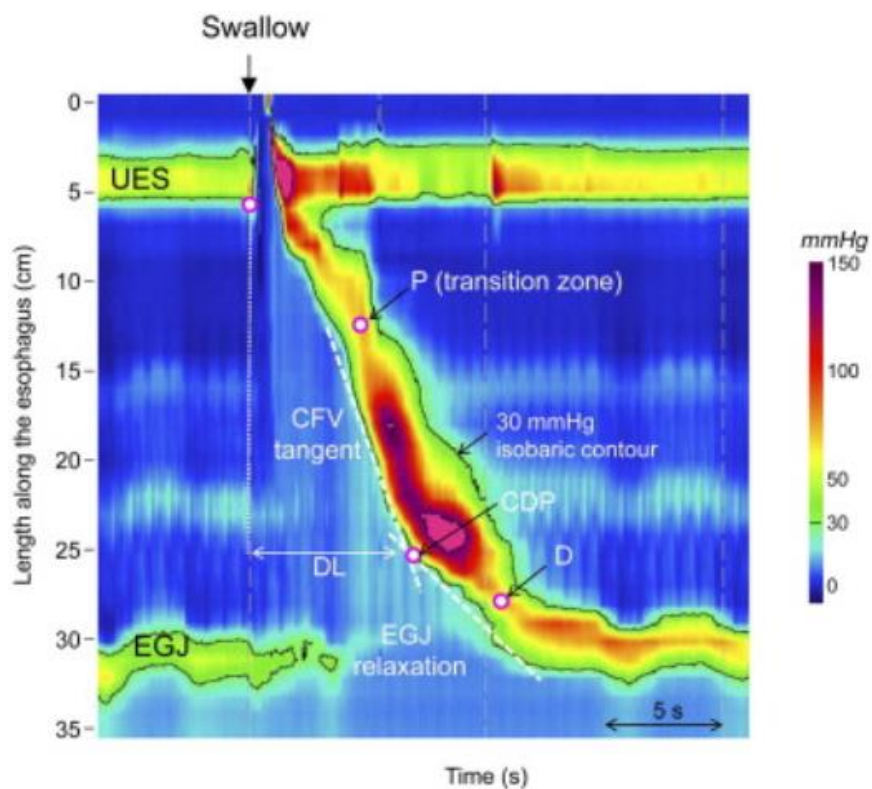
# INDICATIONS FOR ESOPHAGEAL MANOMETRY<sup>6</sup>

- Patients whose symptoms and other investigations suggest a motor disorder
- It is not a primary investigation and should be performed only when the diagnosis has not been achieved by careful history, barium radiology, or endoscopy.
  1. Evaluation of noncardiac chest pain or esophageal symptoms not diagnosed by endoscopy / after GERD has been excluded
  2. Evaluation for nonobstructive dysphagia (e.g. Achalasia, DES... )
  3. Preoperative evaluation for correction of GERD (r/o scleroderma, achalasia)
  4. Postoperative evaluation for correction of GERD
  5. Evaluation of esophageal motility problems associated with systemic diseases

---

6. Wang et al. *Gastrointest Endosc*, 2012

# HIGH-RESOLUTION VS. CONVENTIONAL MANOMETRY



# ADVANTAGES OF HR MANOMETRY<sup>7</sup>

- The pressure sensors are placed closer together, and the overall number of pressure sensors is increased. With these modifications, more information can be acquired.
- Dynamic representation of the entire pressure pattern and pressure dynamics throughout the entire esophagus, reduces movement artifact.
- Improve outcomes in achalasia (diagnosis of 3 subtypes)
- distinguishing clinically relevant subtypes of Nutcracker esophagus and distal esophageal spasm.
- Easier to use for locating the lower esophageal sphincter or esophageal gastric junction.
- Reproducibility increased.
- Much easier for motility technicians or nurses to use.

---

7. Pandolfino et al. *Gastroenterol Hepatol*, 2010

***THANK YOU!***

