Unravelling the Mysteries of Esophageal Manometry
What is High Resolution Esophageal Manometry?

Manometry is the study of pressures, specifically pressures throughout the esophagus, including the upper and lower esophageal sphincters.

This allows the physician to see the dynamics of the entire swallow.
Mystery # 2

Getting the catheter in place
- Procedure is performed with the patient in a semi-recumbent position
- Patient is given 5 ml sips of water with each swallow evaluation
- Collect images and data from 10 swallows
Mystery # 3
Why do we perform manometry?
Gastroesophageal Reflux Disease (GERD)

Conditions associated with GERD that may lead to esophageal motility dysfunction:

- Hiatal Hernia
- LES Hypotension
- Loss of Peristaltic Function
Dysphagia

Conditions associated with dysphagia that may lead to esophageal motility dysfunction

Achalasia
Scleroderma
Ineffective Esophageal Motility
“Manometry should be performed in all patients being considered for antireflux surgery to exclude achalasia. Manometry can be useful to tailor antireflux surgery as patients with frequent failed peristalsis and/or weak peristalsis with peristaltic defects can have less dysphagia with partial fundoplication.”¹
Non-Cardiac Chest Pain

Conditions associated with dysphagia that may lead to esophageal motility dysfunction

- Esophageal Spasm
- Achalasia with Spasm
- Visceral (esophageal) Hypersensitivity
MYSTERY
No. 4
ANATOMY OF A SWALLOW
Resting Esophagus
Role of the Nurse in Catheter Placement

- Nurse role is to look at color plot and determine correct anatomy and placement of the catheter
- Is the probe coiled?
- Are the needed landmarks present? (UES, body of esophagus, LES)
- Are the pressure sensors past the diaphragm?
Mystery # 5

Chicago Classification
Chicago Classification

“The Chicago Classification (CC) of esophageal motility disorders, utilizing an algorithmic scheme to analyze clinical high-resolution manometry (HRM) studies, has gained acceptance worldwide.”
Mystery # 6
What happened to normal?
Abnormalities
Hiatal Hernia

- LES
- Hiatal Hernia
- Diaphragm
Scleroderma

- **Esophageal aperistalsis**
- **Lower esophageal sphincter hypotension**
Ineffective Esophageal Motility

Gap in peristaltic contraction

https://acgcasereports.gi.org/ineffective-esophageal-motility-progressing-into-distal-esophageal-spasm-and-then-type-iii-achalasia/
Ineffective Esophageal Motility - Weak Peristalsis
Achalasia

Type I
Without Pressurization

Type II
Pan-Eosophageal Pressurization

Type III
Achalasia with Spasm
Achalasia Type 1
Achalasia Type 2

Pan-Esophageal Pressurization

Type II
Achalasia Type 3
Pseudoachalasia
Spasm in the esophagus – Diffuse Esophageal Spasm

HIGH-RESOLUTION MANOMETRY - DIFFUSE ESOPHAGEAL SPASM

Normal peristaltic contraction

Simultaneous contraction
Spasm in the esophagus - Nutcracker

http://drdennisorr.com/heart-burn/
Spasm in the esophagus - Jackhammer