Motility - Difficult Issues in Practice and How to Investigate

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The Issues (Upper GI)

- Difficult Dysphagia
- Non-Cardiac Chest pain
- ‘Reflux’ Symptoms
- Regurgitation
- Belching
The Tools

- Oesophageal Manometry
  - Solid state/Water perfused
  - +/- Measure of Transit
    - Impedance
    - Radiology – fluoroscopy
      - Anatomical detail
      - Volume estimate
      - Flow timing
      - Symptoms

- Oesophageal pH Study
  - Wired or wireless
  - +/- Impedance (non acid reflux)
  - 24hr/longer

Dysphagia/Odynophagia

- Physiology testing is not a first line investigation
  - Endoscopy (biopsy, dilatation)
  - Barium Swallow

- Physiology Studies
  - Variables to measure - Pressure, Transit, Anatomy
  - Manometry/Videomanometry/Impedance manometry
  - Different study required for pharyngeal vs oesophageal dysphagia

- Diagnostic possibilities
  - Achalasia
  - Oesophageal spasm
  - Ineffective oesophageal peristalsis
  - ?Nutcracker, ?Incomplete LOS relaxation
  - Missed anatomical problem
Achalasia

• Heterogeneous condition
  • Partially preserved peristalsis
  • Partial LOS relaxation or low pressure LOS
  • With spasm

• In difficult cases, a study with transit allows:
  • Measurement of pressure gradients across LOS during flow of liquid
  • Assessment of the level of holdup (associated spasm)
  • Videomanometry – Oesophageal dilation, wall motion
Videomanometry in Achalasia/Spasm

Spasm

- Routine Manometry may be sufficient
- Absence of spasm on routine manometry is not a good negative predictor
- Provocation
  - Solid boluses
  - Cold liquids
- Impedance/Videomanometry show bolus transit
- Videomanometry shows wall motion/diverticulae/allows correlation of transit with symptoms
Non-Cardiac Chest Pain

- **Diagnostic possibilities**
  - GORD
  - Oesophageal Spasm
  - Local pathology

- **Investigation/Management**
  - Endoscopy
  - Acid suppression (Therapeutic trial)
  - pH study probably of little value
    - Acid suppression very effective in reflux
    - Questionable value of fundoplication in PPI nonresponsive patient (esp with spasm)
  - Oesophageal Manometry + provocation (for diagnostic purposes)
  - Empirical antispasmodics – NO, Calcium channel
  - Pain Management - Endep

‘Reflux’ Symptoms

- **Classical, PPI responsive**
  - No role for manometry, pH studies unless for fundoplication (typical symptoms, incomplete control with acid suppression)

- **Atypical Symptoms (without response to PPI)**
  - Is abnormal reflux present?
  - What is the extent?
  - Does it correlate in time with symptoms?
  - Has the PPI been effective in controlling acidification?

- **Off PPI – standard pH – wired or wireless**
  - Acid exposure, symptom correlation

- **On PPI**
  - pH alone – acid control, symptom correlation only with acid
  - pH/impedance – detects non/low acid reflux, symptom correlation with both
Regurgitation

- Diagnostic possibilities
  - Achalasia
  - Spasm
  - Rumination

- Rumination
  - Classical clinical pattern
    - Effortless appearance of food, spat out or reswallowed, sometimes described as ‘vomiting’
    - Lasts approx 30 min, not acidic
  - Classical pattern on manometry
    - Abdominal pressurisation followed by swallow

- Management
  - Recognition
  - Explanation
  - Behavioural therapy

Belching

- Multiple mechanisms
  - Gastric belching - swallowed gas (gastric distention and belching)
  - Supragastric belching (closed glottis and diaphragm – inhalation into oesophagus)
  - Pharyngeal pumping

- May be associated with excess intestinal gas
  - Bloating, borborygmi, farting

- Investigation
  - Can define the mechanism and explain the symptoms, but does not provide a cure!
  - Videomanometry or impedance manometry (well described patterns)
  - Videomanometry also allows assessment of intestinal gas, pharyngeal activity
Belching

Physiological Investigations for Difficult Issues

• Can provide useful information, but are 2nd, 3rd line investigations
• Define contributions of different aspects of dysmotility to symptoms
• May help to explain symptoms to Doctor and Patient
  • Provide validation
  • Do not fix the symptoms, but may provide some guidance for treatment
• End fruitless investigations
• Prevent unhelpful procedures (fundoplication in patients whose symptoms are not due to reflux)