Welcome

With the introduction of accreditation, the AGIP committee thought it would be useful to produce guidelines for the procedures we perform within GI Physiology. One of the assessment domains (clinical) within the IQIPS standards states that ‘The service has agreed protocols that are applied for each category of diagnostic test’ and that ‘The service ensures protocols are kept up to date and grounded in best practice’. To help us all achieve this standard AGIP has produced its first guideline:

‘Agreed AGIP Guidelines for Oesophageal High Resolution Manometry’

AGIP hopes to produce further guidelines relating to other common procedures performed within GI Physiology over the coming months.

Agreed AGIP Guidelines for Oesophageal High Resolution Manometry:

I do not foresee any individuals, particularly those in research or clinical practices specializing in oesophagology deciding to leave behind high-resolution manometry (HRM) to return to conventional manometry – Professor Pandolfino (2010) Gastroenterology Hepatology, October; 6(10): p632–634
Patient Selection and Preparation in advance of procedure:

- Patients should ideally undergo an endoscopy prior to referral for oesophageal manometry. All patients with dysphagia should have an endoscopy with appropriate biopsies to rule out carcinoma and eosinophilic oesophagitis as the cause of symptoms and to assess for structural abnormalities such as oesophageal diverticulum, pharyngeal pouch or varices which increase the risks of the procedure (Barium radiology done with video recording by an experienced GI radiologist can give complementary information and may detect abnormalities (e.g. motility disorders, Shatzki rings) not appreciated by endoscopy)

- Patients should be informed of the date of their tests well in advance, to allow any medication which will affect the test results to be discontinued (as per local patient information leaflet)

- A light meal is allowed up to 4 hours before the test. Patients are not usually starved overnight (to prevent problems with diabetes, and changes in LOS due to MMC). If patient is suspected of having achalasia then longer fasting is advisable for patient’s comfort

Patient Preparation on attendance:

- Check patient details prior to starting the procedure

- Take a history from the patient. Assess and document any relevant symptoms, confirm and document that all relevant medication (if necessary) has been stopped and also what medication they are usually taking

- Explain in detail the procedure to the patient to allow full co-operation during the test. Written patient consent must be obtained prior to the start of the procedure. Inform the patient that they can withdraw consent at any time during the procedure

- Patients must be given an opportunity to have any questions or concerns they may have answered to their satisfaction before the procedure starts

- Check for any anaesthetic sensitivity or if alcohol is inappropriate for religious reasons

Equipment Preparation:

- It is important to ensure that the oesophageal catheter manufacturer has approved the chosen disinfectant as being compatible for use in decontaminating the catheter

- As per the ‘BSG guidelines for Decontamination of Equipment for Gastrointestinal Endoscopy’ (February 2008) before the start of each procedure the oesophageal catheter (if not disposable) should undergo a full cleaning cycle, unless last used and decontaminated within the preceding 3 hours. This should be undertaken by trained, competent staff. Relevant details should be entered into an appropriate (catheter) cleaning log

- Calibrate and zero catheter as per manufactures guidelines
Performance of the Procedure:

- The member of staff performing the procedure must be either fully trained and accredited in this procedure or supervised by a fully trained and accredited practitioner.

- Staff should wear appropriate protective clothing.

- Explain each step of the procedure to the patient to ensure compliance.

- Apply local anaesthesia to the nose (if required) and allow time to take effect.

- Apply lubrication gel to the tip of the catheter to improve patient comfort, being careful not to cover the sensors.

- Insert the catheter into the nares and gently advance the catheter through the nasal cavity to the back of the throat (approx 15cm). On the report, remember to mention the position of the patient during the procedure (i.e., supine, semi-supine or sitting).

- Ask the patient to tilt their head slightly down towards their chest and start taking very small continuous sips of water through a straw (to aid catheter and help avoid retching/vomiting).

- Gradually intubate the catheter until the visual display indicates the correct positioning of the catheter; ideally with both the UOS and LOS within view (occasionally not possible on tall patients) and secure catheter in place with hypoallergenic tape.

- Allow adequate time for the patient and equipment to stabilise before proceeding (minimum 2 minutes, patient-dependent). The test requires the patient to be as settled as possible without continually swallowing, coughing, etc., allowing longer if needed.

- Start recording and document on the trace the depth of the catheter by referring to the markings on the catheter.

- Take a landmark assessment of LOS and UOS resting pressures prior to test swallows.

- Give the patient 5ml of room temperature water from a syringe. Mark (with event marker) precisely when the patient swallows, ask the patient not to swallow again, talk, cough, retch, move or belch and wait for 30 seconds from the onset of the last swallow before administering the next 5ml bolus. Repeat this process to ensure 10 individual swallows are assessed.

- Give the patient 5x2mls of water with 2-second intervals. The fifth swallow should be the last, and no swallowing, talking, coughing, retching, moving, or belching should take place within the 30 seconds following the fifth swallow. Mark (with event marker) precisely when the patient swallows. There should be normal inhibition of peristalsis during the rapid swallows followed by an effective clearance contraction after the multiple swallows, demonstrating normal neuromuscular function. If no effective clearance contraction post multiple rapid swallows is evident after the multiple swallow, this would suggest hypomotility and compromised neuromuscular function.
The patient should then be given a series of solid (bread/bread roll) swallows in order to assess the response of the oesophagus when the system is put under increased load. Ask the patient to take a normal bite, chew until they are ready to swallow and swallow once only. Mark (with event marker) precisely when the patient swallows, repeat this at least 5 times, (ask the patient not to swallow again, talk, cough, retch, move or belch in-between the swallows), then…..

Immediately allow the patient to free swallow 200mls water (within a maximum of 30seconds) post solid swallows. Solid swallows (bread, test meal) are now considered extremely important as many patients have no explanation for their symptoms with just water

If required a test meal may be given at this point (as per local guidelines)

End recording as per manufacturer’s protocol

Ask patient to blow air through the nose into a tissue and gently but quickly remove the catheter

Hold catheter still for a few seconds, ensuring sensors are not touching anything to allow for the thermal compensation process (if required)

Disconnect catheter from equipment/ save recording

Post Procedure:

If using a reusable HRM catheter (solid state or water perfused) then a trained, competent member of staff needs to immediately clean the catheter as per manufacture’s recommendations and enter relevant details into an appropriate (catheter) cleaning log. If a single use water perfused HRM catheter has been used then place it straight into the appropriate coloured bag for disposal

The patient may go home or progress onto a 24hour pH (+/-impedance) study as required

Analysis of the recording and subsequent reporting should be in line with the most recent “Chicago Classification” (currently 2012)

Document in the report if symptoms occurred during the study especially if the symptom was associated with any dysmotility. It is also important to document if symptoms did not correspond with any dysmotility, if that is the case

[AGIP Committee, March 2013.]
[Review Date: March 2015]
Patients on PPI’s who continue to experience symptoms such as cough, heartburn, regurgitation and chest pain often are difficult to diagnose using traditional acid (pH) monitoring approaches. In fact, a recent study states that physicians using only acid (pH) monitoring for diagnostics, lack the capability of accurately diagnosing GORD in 35% of their patients.

The ZephR® Impedance/pH Reflux Monitoring System employs impedance to detect ALL reflux activity and uses pH to categorize each episode as acid or nonacid for Total Reflux Monitoring. Comprehensive analysis quantifies all reflux patterns and symptom associations in patients studied on or off acid suppression medication.

Having introduced impedance/pH monitoring to the G.I. market, Sandhill continues to evolve this unprecedented technology... delivering all the information you need for a precise, comprehensive assessment of acid and nonacid reflux as well as the correlation between reflux and symptoms.

**Indications for combined impedance/pH testing**
- Persistent symptoms while on acid suppressive therapy
- Primarily postprandial symptoms
- Reflux symptoms and frequent meal ingestion (i.e., infant)

**Small size... Big Performance**
Small BUT powerful! Your patients will appreciate the large, easy to understand controls including our well known symptom buttons that make reporting as easy as 1-2-3.

**Are you currently getting all the data?**

- **POSSIBLE GERD SYMPTOMS**
- **ANTIREFLUX MEDICATION TRIAL**
- **SUCCESSFUL SYMPTOM RELIEF**
- **PERSISTENT SYMPTOMS**
- **IMPEDEANCE/pH MONITORING (ON MEDICATION)**
  - **10%** SYMPTOM ASSOCIATION BREAKTHROUGH ACID REFLUX
  - **35%** SYMPTOM ASSOCIATION NONACID REFLUX
  - **55%** NO SYMPTOM ASSOCIATION

**Get TOTAL REFLUX monitoring ANALYSIS**

**Treatment Conclusions**
- Patients with non acid reflux identified by impedance/pH whose symptoms have not responded to PPI therapy may benefit from the use of other medications.
- Clinical trials have established that nonacid reflux can be associated with GORD symptoms. In addition, ZephR® provides a true negative study by identifying patients with no reflux association.
- Positive symptom index for nonacid or acid reflux using impedance/pH predicts successful response to Laparoscopic Nissen Fundoplication.

*An Analysis of Persistent Symptoms in Acid-Suppressed Patients Undergoing Impedance-pH Monitoring: Sharma, Agrawal, Freeman, Vela & Castell, Clinical Gastroenterology and Hepatology 2008;6:xxx*

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Improving Quality in Physiological
diagnostic Services (IQIPS)

Peer Assessors Appointed by UKAS
for Gastro-Intestinal Physiology

As you will all now be aware IQIPS is a professionally-led programme with the aim of improving services, care and safety for patients undergoing physiological science service tests, examinations and procedures. The United Kingdom Accreditation Service (UKAS) has been licensed by the Royal College of Physicians to manage and deliver an assessment and accreditation service for eight physiological diagnostic specialism’s, including Gastro-Intestinal Physiology.

Assessment for accreditation will be against the IQIPS standards which are developed and owned by the professionals and scientific community. Each UKAS assessment team will include a minimum of one peer assessor. Potential assessors go through a short listing process, pre training and interview workshop prior to completing an assessor training course. If successful they may be chosen and appointed by UKAS. The first two peer assessors for Gastro-Intestinal physiology have recently been appointed by UKAS, they are Ann Smythe and Warren Jackson.

Future Meetings

Forthcoming Events:

We hope to publicise forthcoming meetings and educational events. We would like to invite interested parties to contact the NewWave editor (warren.jackson@hey.nhs.uk) to have their details included in future issues.

May - Dec 2013  Medical Measurement Systems (MMS) web seminar schedule for 2013:

15th May 2013  Paediatric High Resolution Manometry (HRM)
18th June 2013  Impedance-pH studies
11th Sept 2013  High Resolution Manometry (HRM)
22nd Oct 2013  Anorectal manometry (HRAM) & Colonic manometry
6th Nov 2013  Paediatric Impedence-pH Studies
19th Nov 2013  Impedance-pH studies
4th Dec 2013  Paediatric High Resolution Manometry (HRM)

Each session is FREE of charge;:
www.mmsinternational.com/int/1599/mms-education-web-seminars-2013

8th - 10th May 2013  Short Course in Lower GI Physiology
Newcastle University
Enquiries, fees and information contact Naomi Virgo on 0191 222 7223 or email pgcvrs@newcastle.ac.uk

18th - 21st May 2013  Digestive Diseases Week (DDW)
Orlando, Florida, USA
Website: www.ddw.org
24th - 27th June 2013 **BSG Annual Meeting**  
Scottish Exhibition and Conference Centre (SECC), Glasgow  

1st - 3rd July 2013 **Association of Coloproctology of GB & Ireland 2013 Annual Meeting**  
BT Convention Centre, Kings Dock, Waterfront, Liverpool  
Website: [www.acpgbi.org.uk/annual-conference-2013](http://www.acpgbi.org.uk/annual-conference-2013)

27th Sept 2013 **Eosinophilic Gut Diseases: A Case Study Approach**  
UCL Institute of Child Health, London  
[www.a-p-g.org/COURSES/egd2013](http://www.a-p-g.org/COURSES/egd2013)

12th - 16th Oct 2013 **United European Gastroenterology (UEG) Week**  
ICC Berlin, Germany  
Website: [www.ueg.eu/week](http://www.ueg.eu/week)

14th - 15th Nov 2013 **Capsule Endoscopy in Clinical Practice Autumn 2013**  
Lumley Castle Hotel, County Durham  

6th - 8th Nov 2013 **Synmed Ltd are holding a variety of training events at the Charing Cross Hotel, London**  
High Resolution Anorectal Manometry (HRaM)  
High Resolution Impedance Manometry (HRiM)  
Impedance/pH Reflux Testing  
For more information, please email: Eleni.Kyriacou@synmed.co.uk

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### Esophageal Manometry
- Swallowing Disorders  
- Function Evaluation  
- Pre-Anti-Reflux Surgery  
- Measurement for Catheter Placement

### Wireless pH
- PPI Non-Responder  
- Clear EGD  
- Heartburn  
- Regurgitations

### pH Impedance
- PPI Non-Responder  
- Negative pH Study • Clear EGD  
- Cough • Beltch • Voice Disorders  
- Regurgitation • Pediatric Reflux

### Anorectal Manometry
- Constipation  
- Anal Incontinence  
- Pre-Surgery Evaluation

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**ManoScan™ 360**  
**Bravo®**  
**Digitrap® pH-Z**  
**ManoScan™ 360 AR and 3D AR**

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**Esophageal Manometry New ManoView 3.0 Software**  
*Chicago Classification Analysis Option*

**Wireless pH New AccuView 5.2 Software**

**pH Impedance**

**Anorectal Manometry**

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