NewWave

THE OFFICIAL E-NEWSLETTER OF THE ASSOCIATION OF GI PHYSIOLOGY

JULY 2026

VOLUME 16 | ISSUE 3

ISN 1473-7493

BRITISH SOCIETY OF GASTROENTEROLOGY

AGIP

Contents

If you have any relevant articles or papers that you would like to be included in future issues, please contact Gemma Willis

AGIP Council Members 2026

Role	Council Member
President	Dr Rami Sweis
Upper GI Representative	Dr Jamal Hayat
Chair	Samantha Scott
Consultant Clinical Scientist Fellow Advisor	Warren Jackson
Education Secretary	John Gallagher
Communications Officer	Andres Vales
Accreditation Officer	Tanya Miller
Deputy Accreditation Officer	Joanne Hayes
Publication Secretary	Gemma Willis
Lower GI Representative	Mark Scott
Symposium Secretary	John Hayman
IQIPS Representative / Interim Minutes Secretary	Gianni Raise
Paediatric Representative	Lucy Griffin
National Standards Officer	Samantha Morris
Newly Elected Committee Member	Luisa Keen
Newly Elected Committee Member	Naomi Rune
Trainee Representative	Eve Self

From the Editor

Gemma Willis

Welcome to the Summer issue of NewWave!

As always, we've packed this edition with news, updates and a fantastic selection of articles from across our community. This issue has a strong BSG LIVE '26 theme, with contributors sharing the key messages and learning points from some of the most interesting sessions across the meeting. If you couldn't make it to Liverpool, missed a talk you wanted to see, or simply fancy a refresher, we hope these reviews help bring some of the conference highlights to you.

The BSG content touches on oesophageal physiology investigations and developments, reflux monitoring, colon capsule endoscopy, opioid-induced motility disorders and the long-term follow-up of landmark clinical trials. Alongside these reviews, we've included highlights from the 2026 AGIP AGM, welcomed our newly elected Council members, shared an update on the revised BSG membership categories, and highlighted the important campaign calling for Clinical Scientists to be included within Patient Group Directions. We also take a moment to celebrate the remarkable contribution of Patricia Lawlor following her retirement after more than 38 years dedicated to GI Physiology.

I'd like to take this opportunity to welcome Samantha Scott back from maternity leave. We're delighted to have her back with the Committee and hope she's enjoyed this very special time with her family. At the same time, a huge thank you goes out to Warren Jackson for stepping in to take the reins during Sam's absence. His support and leadership over the last year has been greatly appreciated and has ensured everything continued to run smoothly.

Finally, a big thank you to everyone who has contributed to this edition. Your willingness to get involved and support NewWave is so appreciated and helps to make each edition a useful resource.

Happy Reading!

Gemma

If you have any relevant articles or papers that you would like to be included in future editions, please contact Gemma Willis

Upcoming Events

August 2026	Optimising GI Care through Biofeedback 13th August 2026 Webinar Train the Brain, Free the Poo: Biofeedback in Children with Constipation 14th August 2026 Webinar
September 2026	Advanced HRM & Impedance pH Study Day 16th September 2026 Leeds 22nd ISDE World Congress for Esophageal Diseases 16th—18th September 2026 Kyoto, Japan Impedance/pH Reflux Testing & High Resolution Manometry Clinical Training Seminar 18th September 2026 London 2nd Edition of International Conference on Gastroenterology 24th—26th September 2026 London 18th Annual Sheffield Gastroenterology Symposium 25th September 2026 Sheffield HRM Oesophageal Patient Case Interpretation 29th September 2026 2-3pm Webinar
October 2026	Upper GI / Small Bowel Capsule Reading Course 5th October—14th December 2026 (weekly training) Online United European Gastroenterology (UEG) Week 17th—20th October 2026 Barcelona
November 2026	The Pelvic Floor Society 2026 Annual Meeting 4th—6th November 2026 Guildford Federation of Neurogastroenterology and Motility Meeting 5th—7th November 2026 Bogota, Colombia European Foregut Society Annual Congress 11th—13th November 2026 Zurich
December 2026	HRM Oesophageal Patient Case Interpretation 8th December 2026 2-3pm Webinar

The AGIP Annual General Meeting
23rd June 2026, Liverpool

The AGIP Annual General Meeting took place during BSG LIVE 2026 in Liverpool, and provided members with an opportunity to hear about the work undertaken by the Committee over the past year, celebrate recent achievements and discuss AGIP's future priorities and workstreams.

AGIP's New Identity

One of the key announcements was the introduction of AGIP's refreshed identity, which included a new logo and an updated name. Following discussions around ensuring AGIP better reflects the breadth of professionals working within GI Physiology, the Committee reviewed several options before agreeing on the Association of GI Physiology.

The new name reflects AGIP's commitment to representing everyone working within the specialty, regardless of professional background or job title, whilst providing a clear and recognisable identity that will support the members into the future.

Supporting Clinical Practice

Members were updated on the expanding library of AGIP guidance documents, which continue to support greater consistency in GI Physiology practice. As new guidance is developed and approved, it is published on the BSG website and made freely available to members.

Committee Updates

The AGM welcomed several new members to the AGIP Council following this year's elections and committee recruitment process. The Committee also announced appointment to the Four Nations Lead Contacts, who will help strengthen communication and engagement across England, Scotland, Ireland and Wales.

AGIP Masterclasses

Following the success of the 2025 Masterclass series, members were pleased to hear that the programme received extremely positive feedback, with the majority of attendees rating the sessions as excellent or good. Thanks to the continued support of AGIP sponsors and the BSG, the Masterclasses will remain free for AGIP members and will now be delivered biannually.

What's Next?

The Committee reflected on several ongoing priorities for AGIP, including addressing continued workforce challenges, expanding access to GI Physiology services, supporting accreditation, reducing variation in service provision and strengthening the future workforce through robust education and training pathways.

These priorities will continue to guide AGIP's work over the coming year as the Association seeks to support members and promote high-quality GI Physiology services.

A Thank You

The AGM concluded by recognising the contribution of colleagues who have supported AGIP throughout the year, including those stepping down from Committee roles. Their commitment and dedication to advancing GI Physiology were acknowledged with sincere thanks.

Sign the Petition to Allow Clinical Scientists to use Patient Group Directions

A new UK Government petition is calling for the legal framework surrounding Patient Group Directions (PGDs) to be extended to include Clinical Scientists and Biomedical Scientists. If successful, this would allow appropriately trained and statutorily regulated professionals to supply and administer specified medicines under an approved PGD, bringing Clinical Scientists in line with other registered healthcare professions such as nurses, pharmacists and many Allied Health Professionals.

What is a PGD?

A PGD is a written instruction that allows specified registered healthcare professionals to supply and/or administer a medicine to a predefined group of patients without the need for an individual prescription. PGDs are subject to strict legal requirements and can only be used within an approved governance framework by appropriately trained and competent healthcare professionals.

Why is this Important?

Clinical scientists are already responsible for delivering highly specialised diagnostic services, making complex clinical decisions and working autonomously within multidisciplinary teams. As the role of the clinical scientist continues to evolve, so too must the legislation that supports safe and effective patient care.

The Commission on Human Medicines (CHM) considered this issue in 2023, and supported the use of diagnostic PGDs by Clinical Scientists and Biomedical Scientists, subject to appropriate governance, training and competency requirements.

This petition asks the Government to build on that recommendation by extending the legal framework to include therapeutic PGDs, enabling appropriately trained professionals to supply or administer medicines where clinically appropriate.

What Could This Mean for GI Physiology?

For many GI Physiology services, access to PGDs has the potential to remove unnecessary barriers to care. Depending on local service models, PGDs could support the timely administration of medicines used within investigations, reduce delays, avoid additional appointments and streamline patient pathways.

Modernising legislation to reflect contemporary practice would help ensure that services can continue to develop safely and efficiently, while making the best use of an increasingly skilled workforce.

Expanding access to PGDs could help:

- Reduce unnecessary delays in treatment and investigations
- Avoid additional referrals or repeat appointments
- Improve the patient journey
- Make better use of the Clinical Scientist workforce
- Support more efficient and flexible service delivery
- Enable services to continue evolving in line with modern healthcare needs

Importantly, any future use of PGDs would continue to require robust governance, appropriate training, competency assessment and local organisational approval.

Every Signature Counts. There are 10,000 signatures requires a formal Government response. 100,000 signatures means the petition will be considered for debate in Parliament. If you believe Clinical Scientists should be able to use PGDs where appropriate, we encourage you to sign and share the petition with colleagues.

Please support the Campaign, and sign the petition by clicking here

The petition closes on 15 January 2027.

AGIP Council Spring Election 2026 Results

Following the recent election process, we are pleased to announce the appointment of two newly elected Committee Members, one re-elected Committee Member, and a new Trainee Representative.

Committee Members

- Luisa Keen
- Naomi Rune
- Gemma Willis

Trainee Representative

- Eve Self

Congratulations to all those elected. We look forward to working with you as you help support AGIP's ongoing work.

We would also like to thank everyone who stood for election. The willingness of members to contribute their time, experience and enthusiasm is vital to the continued success of AGIP, and we greatly appreciate everyone who put themselves forward.

Updates to BSG Membership

Following feedback from members, the BSG has introduced revised AGIP membership categories, creating a clearer distinction between members working at Band 5 and below and those at Band 6 and above.

This change aligns AGIP membership with the wider BSG membership structure, ensuring colleagues earlier in their careers can access membership at a reduced subscription rate while continuing to enjoy the benefits of being part of the national GI Physiology community.

Membership Categories

Band 5 and Below	Band 6 and Above
£34 per year	£62 per year

AGIP membership provides access to a wide range of professional benefits, including:

- Networking, learning and sharing ideas with colleagues who have common specialist interests at regional, national and international level.
- Staying up to date with the latest clinically authoritative information, best practice and research in gastroenterology and hepatology.
- Up to 30% discount on all BSG-endorsed events, including the BSG Annual Meeting.
- Access to masterclass videos.
- Access to the latest GI Physiology guidance and resources.
- Eligibility to apply for AGIP bursaries, awards and elected committee positions.

In addition, Band 6 and above membership includes:

- Free online and flipping book access to Gut.
- Free online and flipping book access to Frontline Gastroenterology.
- Free online access to Open Gastroenterology.
- Free online access to Gut Science.
- Free online access to Alimentary Pharmacology & Therapeutics (AP&T).

For more information on BSG membership, click here.

Already a Member?

Please encourage colleagues within your department to join and take advantage of the educational resources, networking opportunities and member benefits available through AGIP.

Farewell to Patricia Lawlor After Over 38 Years!

By Lillian Barry, Chief II GI Physiologist
Bon Secours Hospital, Co. Cork, Ireland

Patricia Lawlor retires after over 38 years of exceptional service and dedication to Gastrointestinal Physiology and Clinical Science at St James's Hospital in Dublin, Ireland, where she served as Chief II GI Physiologist. As Ireland's first Gastrointestinal Physiologist, Patricia was a pioneer in her field, working in the first GI Physiology laboratory established in Ireland and helping to shape a profession that was then in its infancy.

Throughout her career, Patricia demonstrated an unwavering commitment to advancing GI Physiology and raising the profile of the profession nationally. Equally important was her dedication to education and mentorship. For almost four decades, she trained, guided, and inspired generations of physiologists, generously sharing her expertise and supporting the development of many careers. Personally, over 20 years ago, I remember being welcomed to the GI Function Unit, St James's Hospital, Dublin, by Trish and her colleagues as a newly hired trainee from another hospital trying to establish another GI Physiology department. She patiently advised and guided me through those initial years and still, as an established physiologist, I would go to her for advice and guidance.

Patricia's contribution extended beyond clinical practice. Her commitment to professional advancement was reflected in her leadership within the Irish Institute of Clinical Measurement Physiologists, where she served on two occasions as President, championing excellence and advocating for the profession. She was widely respected for her calm leadership, professionalism, and steady guidance, qualities that earned the trust and admiration of colleagues throughout her career.

Patricia leaves a lasting legacy through the standards she set, the colleagues she mentored, and the profession she helped build. As she begins her retirement, we acknowledge her remarkable contribution and wish her health, happiness, and fulfilment in the years ahead.

Review: Digestive Diseases Week 2026

Catherine Sykes, Clinical Scientist
The Newcastle Upon Tyne Hospitals NHS Foundation Trust

I was invited to speak at a satellite symposium on the Investigation and Treatment of Dysphagia in Eosinophilic Oesophagitis (EoE), hosted by Profs John Pandolfino, Dustin Carlson and Mark Fox at Northwestern University in central Chicago. I was amazed to learn that the skyscraper next to us was the hospital. It was extremely daunting to be delivering a talk to many of the people who wrote the Oesophageal Physiology 'handbook'. But it was also nice to put faces to names of those who author the papers we read!

Dr Rami Sweis and I presented a talk titled: Causes of Dysphagia in Eosinophilic Oesophagitis: Insights from High-Resolution Manometry. Dr Sweis set the scene for the prospective work that we have done in this space as part of my PhD NIHR Fellowship (the SWALLeOeW Study). He explained how the classification systems for oesophageal manometry have evolved over the years, with the latest edition acknowledging the use of solid food as a mode of assessment. He then gave examples of how solids can demonstrate peristaltic function in cases of absent contractility to liquid swallows and how in cases of dysphagia it can give insight to abnormalities associated with patient symptoms.

My talk was a brief summary of the motility findings from the SWALLeOeW Study. I explained the aim of the study: To investigate the use and acceptability of physiological assessment of oesophageal function in EoE, and then discussed the recruitment figures for the study and who we included. We consented 51 participants, with 46 and 42 undergoing pre-treatment High-Resolution Impedance Manometry and ambulatory pH/Impedance monitoring respectively. Those who went onto treatment had a 2-4 month course of oro-dispersible budesonide (Jorveza) and then 30 and 24 repeated the HRIM and pH/impedance investigations. Participants were 40% female, 61% had a new diagnosis of EoE but all had evidence of active disease and there was a median symptom duration of 10 years.

I then discussed a review on oesophageal motility in EoE that we published in 2023[1] and compared this to another review published at the same time[2]. Whilst motility findings were broadly similar, the review by Reddy et al picked up a slightly higher proportion of Oesophagogastric Outflow Obstruction (OGJOO) at 10%, which I acknowledged. I explained that I expect that this was because they analysed a sub-set of 14 of the studies in their review that could be analysed using Chicago Classification v3.0[3] by meta-analysis. Our cohort was therefore larger and more heterogeneous, including older studies using conventional manometry. The data from these reviews was all based on liquid swallows, with the SWALLeOeW Study aiming to address this by assessing motility during eating, given that solid-food dysphagia is the most common symptom in adults with EoE.

I showed the data from upright liquid swallows from the SWALLeOeW study, which was similar to the review data and then contrasted this with the data from when participants were given a solid test meal (bowl of rice) to eat. Rates of normal motility and Ineffective Motility dropped and OGJOO and hypercontractility notably increased. I then showed what happened to the various participants in terms of manometric categories following treatment (Figure 1).

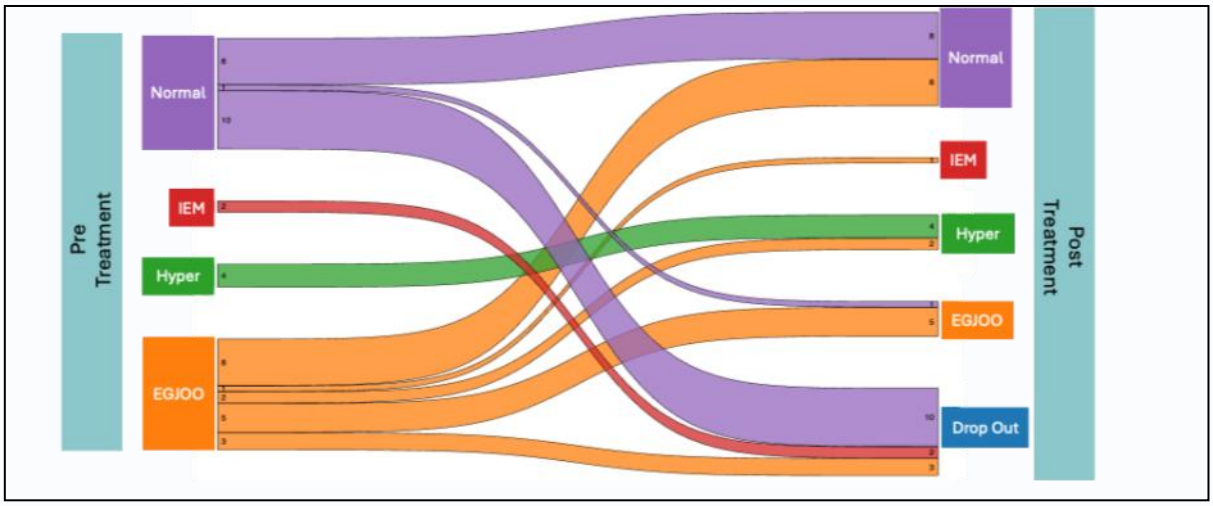


Figure 1 *– Manometric categories in response to solid test meal in the SWALLeOeW Study. Categories on the left are pre-treatment and those on the right are following a course of oro-dispersible budesonide. This was used as a visual tool to explain what happened to motility following treatment.*

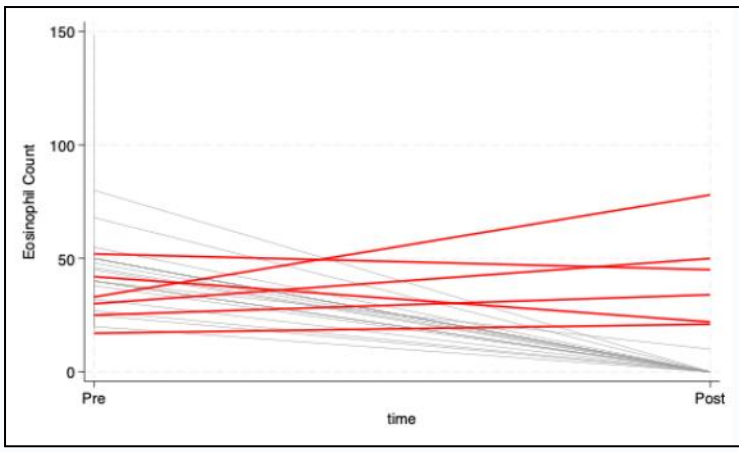
I went on to describe 3 broad phenotypes we saw in those with OGJOO in response to solids: the pan-oesophageal pressurisation group, obstruction secondary to obstruction and those with normal peristalsis but with an elevated IRP. Interestingly, despite appearances of significant obstruction at times in this group, no rings or strictures were picked up on endoscopy in 2/3 of cases.

I then went into a discussion about symptoms. In summary, the study found no difference between motility groups in terms of patient-reported symptoms using the brief oesophageal dysphagia questionnaire. This questionnaire asks individuals to recall symptoms from the last 2 weeks. However, when we challenged participants with a rice meal during HRIM, those with clinically relevant motility disorders were much more likely to reproduce their typical EoE symptoms. I suspect that this difference may be because of adaptive eating. In normal life many individuals with EoE avoid certain foods, eat very slowly, drink lots of water or use other strategies to aid in eating. In contrast, in a more experimental context where everyone is given the same thing to eat, it did seem that those with motility abnormalities were more symptomatic. I provided a quote to exemplify this idea of adaptive eating from one of the qualitative interviews which formed an element of the study:

"*[You'd] have toast for breakfast, but you'd have to be really careful how you'd eat. You'd have to drink a whole lot of water with it and pause between taking many mouthfuls and make sure you drink enough.*
….you'll probably be the last person to finish your meal because everyone will eat a lot quicker than you will."

Interestingly this quote was from a patient with severe pan-oesophageal pressurisation to solids but reported a low symptom burden.

Finally, I had a slide showing that those whose eosinophil count remained over 15/high-powered field (hpf) post-treatment tended to continue to have a clinically relevant motility disorder following a course of treatment (Figure 2). I summarised the findings and then opened the floor to questions.



Participants where eosinophil stays >15/hpf	Pre	Post
P003_UC	EGJOO	EGJOO
P004_UC	Hyper	Hyper
P019_UC	EGJOO	Hyper
P034_UC	Hyper	Hyper
P011_CD	Normal	Normal
P005_UC	No solids	No solids

Figure 2 – Eosinophil count before and following a course of orodispersible budesonide. Participants indicated in red are those in whom the post-treatment eosinophil count remained above 15/hpf. The table summarises the motility findings in these patients, with those with persistent eosinophilia tending to continue to have a clinically relevant motility disorder.

My talk was followed by Professor Rena Yadlapati who gave an excellent talk on the role of acid reflux and mucosal integrity in EoE. The two pathologies have an interesting history in terms of clinical understanding of whether they are related or independent. She encouraged the audience not to think of this in a binary way and instead to consider that in some patients it may be relevant, and may be an aggravating factor. This is something that can be looked at in the SWALLeOeW Study data, as 36% of our cohort had a positive pH/impedance study.

Professor Nirmala Gonsalves gave an interesting talk on diet in EoE and different step-up or step-down approaches to management. She also shared a pragmatic approach to treatment whereby patients on elimination diets take short courses of medication during periods that it is difficult to follow these strict diets, such as when travelling. Thomas Greuter then treated us to an excellent overview of medication in EoE and new pharmaceuticals in the pipeline. Finally, Profs Dustin Carlson and Dr Corey Ketchem gave a fantastic presentation on the physio-mechanical impact of EoE.

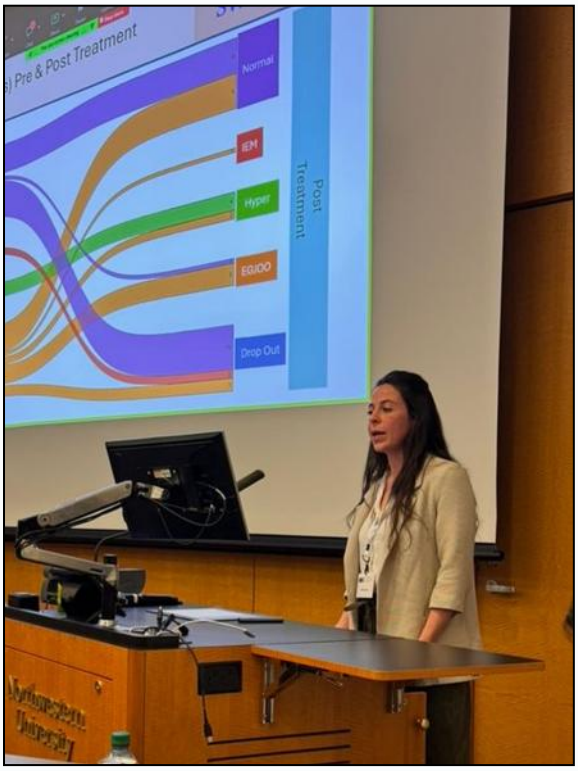
At the end Professor Mark Fox was awarded an honorary title of ‘The Maestro’, recognising his contributions to the field, bringing people together and orchestrating events such as these symposia. A well-deserved trophy.

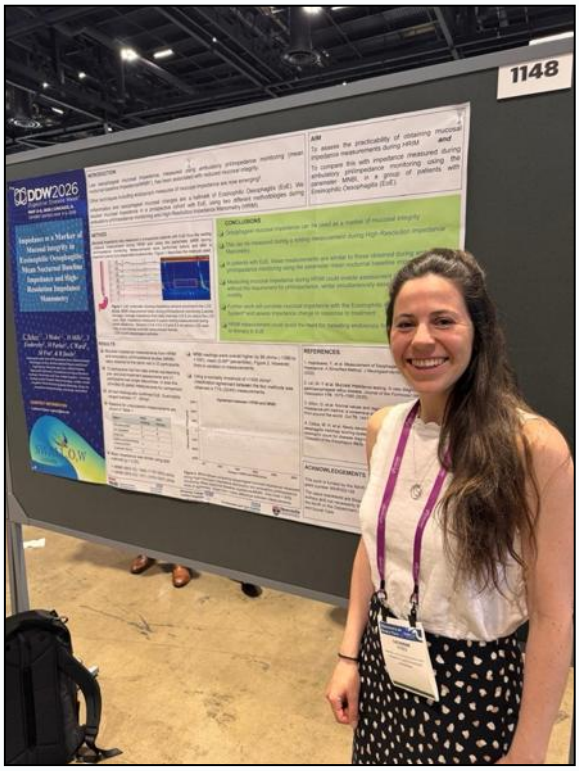
At DDW itself, in the field of breath analysis some interesting data was shared from Professor Mark Fox’s group and from the Atmos biosensor group. The Swiss group reported data from 470 patients referred for lactulose breath test for abdominal symptoms. They combined the breath test with abdominal imaging of a contrast agent to determine oro-caecal transit time, finding SIBO in 8.7%, normal findings in 38.5%, and what they defined as carbohydrate intolerance in 52.8%. Carbohydrate intolerance was defined as a hydrogen increase detected on breath testing when the lactulose substrate had reached the caecum, in conjunction with the patient’s abdominal symptoms. They concluded that without imaging, they would have been unable to distinguish SIBO from carbohydrate intolerance based on a rise in breath hydrogen of >20 ppm. A study using the Atmo Capsule was also presented looking at response to Rifaximin in patients with unexplained upper GI symptoms. They collected duodenal aspirates and patients also ingested the Atmo Capsule alongside glucose infusion. They found that despite only picking up hydrogen in the small bowel in one patient, response to Rifaximin was observed in 51% of the patients. They concluded that Rifaximin may be acting via a non-specific reduction in bacterial density within the intestine, rather than specifically within the small bowel.

I learned a huge amount during the trip, getting to see how the international GI Physiology network works and organises itself, and how research ideas are born in these collaborative moments where people step out of their day-to-day work. It was also a unique opportunity to get input from others about my own research, enabling me to consider next steps for writing up a thesis and publications. I was also fortunate to sample some great food and take a moment to explore Chicago’s towering metropolis. I am truly grateful for the support both from AGIP for this trip and for the NIHR for funding my fellowship and enabling these opportunities.

References:

1. Sykes, C., Fairlamb, G., Fox, M. & Sweis, R. Assessment of Esophageal Motility in Patients With Eosinophilic Esophagitis. J. Clin. Gastroenterol. 57, 10–30 (2023).
2. Reddy, S. B., Ketchem, C. J., Dougherty, M. K., Eluri, S. & Dellon, E. S. Association between eosinophilic esophagitis and esophageal dysmotility: A systematic review and meta□analysis. Neurogastroenterology & Motility https://doi.org/10.1111/nmo.14475 (2022) doi:10.1111/nmo.14475.
3. Kahrilas, P. J. et al. The Chicago Classification of esophageal motility disorders, v3.0. Neurogastroenterology & Motility 27, 160–174 (2015).





Review: An Overview of Capsule Endoscopy and Where We Are Now

Lottie Keyse, Trainee Clinical Scientist
Manchester University NHS Foundation Trust

In the Colorectal Session on Tuesday 23rd June, Dr Angus Watson, Chair of Surgery at the University of Aberdeen, provided an enthusiastic overview of colon capsule endoscopy (CCE).

As GI Physiologists, many of us are familiar with small bowel capsule endoscopy; however, this session explored the world of CCE, which comparatively, few of us will have encountered.

Figure 1: Image of the Medtronic PillCam COLON 2 capsule (Image Credit: Medtronic, 2026)

The Need for Colon Capsule Endoscopy:

Dr Watson opened his talk with some striking statistics: colorectal cancer is the third most common cancer worldwide, with approximately two million new diagnoses each year, and is the second leading cause of cancer-related death. However, when detected early, it is largely preventable or highly treatable, highlighting the importance of effective diagnostic pathways.

Technology:

Remarkably, the first colon capsule was swallowed in 1999. The technology of the Medtronic PillCam COLON 2 is very similar to the Medtronic PillCam SB 3 system used in small bowel endoscopy. The patient swallows a capsule containing an LED light and two cameras, each providing a 170° field of view (Figure 1) (Medtronic, 2026). The capsule captures up to 35 images per second, transmitting them wirelessly to a recorder worn on a belt around the patient's waist (Figure 2). The recorded images take approximately 45–60 minutes to review (Medtronic, 2026).

Figure 2: The Medtronic SmartPill COLON 2 system including recorder and patient belt (Image Credit: Watson et al., 2023)

Healthcare professionals interested in reporting CCE studies can undertake a ten-week online training programme through IMIGe, which includes theoretical teaching alongside simulated reporting cases (IMIGe, 2026).

ScotCap:

Dr Watson spoke passionately about ScotCap, the first major collaborative innovation programme of its kind, which brought together NHS boards, universities, governments, with the overarching aim of piloting CCE in practice (MacLeod et al., 2024). This project resulted in the publication of the ScotCap Playbook, an interactive blueprint which remains freely available online for centres wishing to establish a CCE service (Watson et al., 2023).

ScotCap recruited 5793 patients consisting of two cohorts: those who were symptomatic with a faecal immunochemical test (FIT) <150µg Hb/g, and surveillance patients awaiting colonoscopy (MacLeod et al., 2024). 34–35% required colonoscopy following their CCE, <20% required flexible sigmoidoscopy, whilst 43% required no further investigation (MacLeod et al., 2024). Sensitivity per polyp per capsule was also impressive – thirteen colorectal cancers were recorded during the trial, with every case initially detected by CCE. Crucially, very similar outcomes were reproduced in subsequent pilot studies by NHS England (Turvill et al., 2025).

Together, ScotCap and NHS England concluded that CCE is a safe investigation with a high sensitivity for clinically significant pathology (Figure 4).

Further Analysis:

Several studies have further characterised the health economics of CCE. These came at a crucial time when endoscopy services were suffering from unprecedented backlogs from the COVID pandemic.

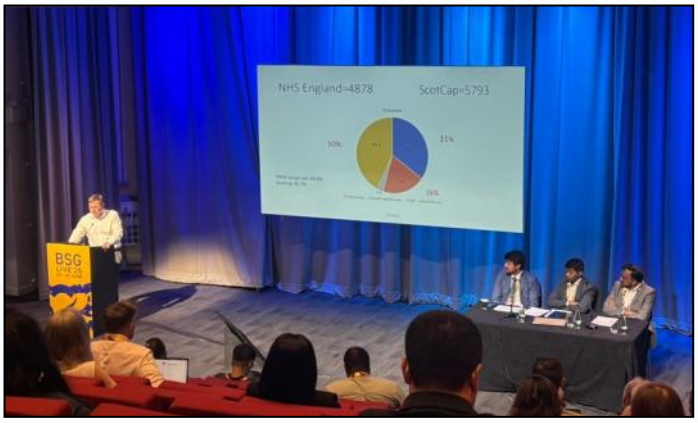


Figure 3: Summary pie chart of the ScotCap and NHS England pilot's outcomes presented by Dr Watson during his talk (Image Credit: Watson, 2026)

A cost-efficacy analysis estimated the cost of colonoscopy as approximately £900, compared to £747 for CCE (Healthcare Innovation Scotland, 2024). However, cost-effectiveness varied between patient groups. In symptomatic patients, CCE was essentially cost neutral, but was cost incurring in the surveillance group due to over-detection of small benign polyps (Healthcare Innovation Scotland, 2024). However, it is estimated that a reduction of ~25% in the price of CCE systems would make it cost neutral overall (Healthcare Innovation Scotland, 2026).

It is widely acknowledged that many patients have uncomfortable experiences of colonoscopy. In terms of patient acceptability, most studies favour CCE by 5–6%, even when patients required subsequent colonoscopy (Deding et al., 2021). In terms of safety profile, CCE also has an excellent safety profile, with Dr Watson quoting the greatest risk being obstruction, occurring in around three per 1000 patients (MacLeod et al., 2024).

Limitations:

Despite its promising results, CCE has not yet been widely implemented, unlike its small bowel counterpart. Dr Watson acknowledged he still needs to convince some commissioners and gastroenterologists, suggesting that CCE is inherently disruptive to current practice. Gastroenterologists invest years in learning advanced endoscopic skills, so naturally many continue to favour investment in this field.

However, Dr Watson believed the 'Achilles heel' of CCE is the inadequate bowel prep and completion rate. Even with the addition of prucalopride, adequate bowel preparation could only be achieved in up to 80% of patients (MacLeod et al., 2024). Preparation quality also varied greatly between sites, which could be attributed to differences in patient information, local protocols and patient demographics.

Another limitation is the tendency for pathology to be double counted, resulting in a high sensitivity but a low specificity. 30–40% of patients still require a follow-up endoscopy. Additionally, audience members raised concerns regarding the high minor pathology pick-up rate with CCE, and the discrepancy in polyp size estimation between CCE, colonoscopy and histology. Audience members were particularly concerned about the clinical, psychological and potentially legal implications for patients. Dr Watson recognised that identifying a polyp on CCE that cannot be found on subsequent colonoscopy can create a conundrum for further management for the clinician and significant patient anxiety.

Future Development:

Currently, the main priority for CCE is to determine the diagnostic accuracy. Dr Watson updated the audience that the Colo-CAP study has so far recruited 250 patients across 30 sites to swallow a pill in the morning and have a colonoscopy in the afternoon, with the aim of directly quantifying sensitivity and specificity. Additional sub-studies are evaluating intra- and inter-observer error, alongside further cost-efficacy analysis. Dr Watson also welcomes the perspectives of both sceptical and proponent clinicians to volunteer for an interview study, for which he shared a QR code (University of York, 2024).

There is also considerable scope for technological advancement. One example is developing a recorder patch in lieu of the current black belt, which would be much more comfortable for patients and easier to post. Similar technology is already being used in small bowel capsule endoscopy. AI reporting could also greatly reduce reporting time and improve diagnostic accuracy. The CESCAIL study has already identified nine different AI algorithms to improve the efficiency of CCE reporting (Lei et al., 2023).

Discussion with the audience also highlighted the importance of co-developing CCE alongside ColoFit, which is a novel at-home test designed to stratify colorectal cancer risk. According to Dr Watson, currently just 1.5% of patients placed on a 2-week-wait list for colonoscopy are ultimately diagnosed with colorectal cancer. A future model of patients with a positive FIT undergoing CCE in primary care would reserve colonoscopy in secondary care for those requiring therapeutic intervention. Therefore, if these technologies were scaled up and delivered in the community, the incidence of colorectal cancer could be fundamentally reshaped.

Take Home Messages:

- Colon capsule endoscopy is an effective triage investigation that can safely reduce demand for colonoscopy without compromising cancer detection.
- Patients generally prefer CCE to colonoscopy, although bowel preparation and incomplete examinations remain important challenges.
- Advances in AI and technological innovation are expected to improve diagnostic accuracy, reporting efficiency, and support wider NHS implementation.
- From a physiologist's perspective, CCE is likely to become an important part of the initial work-up of colorectal patients, with earlier exclusion of organic pathology potentially increasing the proportion referred for lower GI physiology investigations.

References:

1. Deding U, Cortegoso Valvidia P, Koulaouzidis A, Baatrip G, Toth E, Spada C et al. Patient reported outcomes and preferences for colon capsule endoscopy and colonoscopy: a systematic review with meta-analysis. Diagnostics (Basel). 2021. 11(9): 1730.
2. Healthcare Innovation Scotland. 2024. Colon capsule endoscopy (CCE) for the detection of colorectal polyps and cancer. Available from: https://shtg.scot/media/2430/20240109-cce-update-v10.pdf?utm_source=chatgpt.com [Accessed: 6th July 2026]
3. IMIGe. 2026. Professional Courses. Available from: https://imige.co.uk/our-professional-courses/ [Accessed: 6th July 2026].
4. Lei I, Tompkins K, White E, Watson A, Parsons N, Noufaily A et al. Study of capsule endoscopy delivery at scale through enhanced artificial intelligence-enabled analysis (the CESCAIL study). Colorectal Dis. 2023; 25(7): 1498-1505.
5. MacLeod C, Rajapaksha N, Brown C, Hudon J, Asid Z, Watson A. The ScotCap registry: An evaluation of 1000 colon capsule endoscopy procedures carried out in Scotland. Colorectal Dis. 2024; 27(1): e172271
6. Medtronic. 2026. PillCamÔ COLON 2 system. Available from: https://www.medtronic.com/en-us/healthcare-professionals/products/digestive-gastrointestinal/capsule-endoscopy/endoscopy-systems/pillcam-colon-2-system.html [Accessed: 6th July 2026]
7. Turvill J, Haritakis M, Pygall S, Bryant E, Cox H, Forshaw G, Musicha C, Allgar V, Logan R, McAlindon M. Multicentre Study of 10369 Symptomatic Patients Comparing the Diagnostic Accuracy of Colon Capsule Endoscopy, Colonoscopy, and CT Colonography. Aliment Pharmacol Ther. 2025; 61(9): 1532-1544.
8. University of York. 2024. ColoCap. Available from: https://york.qualtrics.com/jfe/form/SV_5hwoIgVP1vu1UB8 [Accessed: 6th July 2026]
9. Watson A, MacLeod C, Beltzbacher A. ScotCap Playbook. 2023. Available from: https://learn.nes.nhs.scot/61073 [Accessed: 6th July 2026]

Review: LPS and LPRD—The San Diego Consensus

Ella Moore, Trainee Clinical Scientist
Sandwell and West Birmingham Hospitals NHS Trust

Dr Radu Rusu is a Consultant Gastroenterologist and specialist in Oesophageal Medicine at the Royal Free Hospital in London. During the AGIP GI Physiology session, he delivered an interesting presentation on *LPS and LPRD – The San Diego Consensus* to inform the referral process and management of patients with laryngopharyngeal symptoms.

He outlined how laryngopharyngeal symptoms are associated with significant healthcare costs, primarily due to diagnostic uncertainty and prolonged double-dose PPI administration despite a lack of objective reflux evidence. This highlights the importance of unequivocally defined concepts and the necessity of a clear diagnostic pathway.

The previous paradigm of laryngopharyngeal reflux (LPR) assumed that acid reflux causes laryngopharyngeal symptoms, in which the label of LPR would be presumptively applied to patients presenting with non-specific throat symptoms. However, this led to prolonged, ineffective trials of acid suppression therapy, with response rates of <50%.

Alternatively, the new paradigm of the San Diego Consensus considers laryngopharyngeal symptoms (LPS) as throat and upper airway symptoms that may have a reflux component but often do not. The label of LPS now describes the presentation rather than the cause. The San Diego Consensus introduces laryngopharyngeal reflux disease (LPRD) as a definitive, objective diagnosis that requires demonstration of gastro-oesophageal reflux disease (GORD) in patients with LPS.

Defining LPS

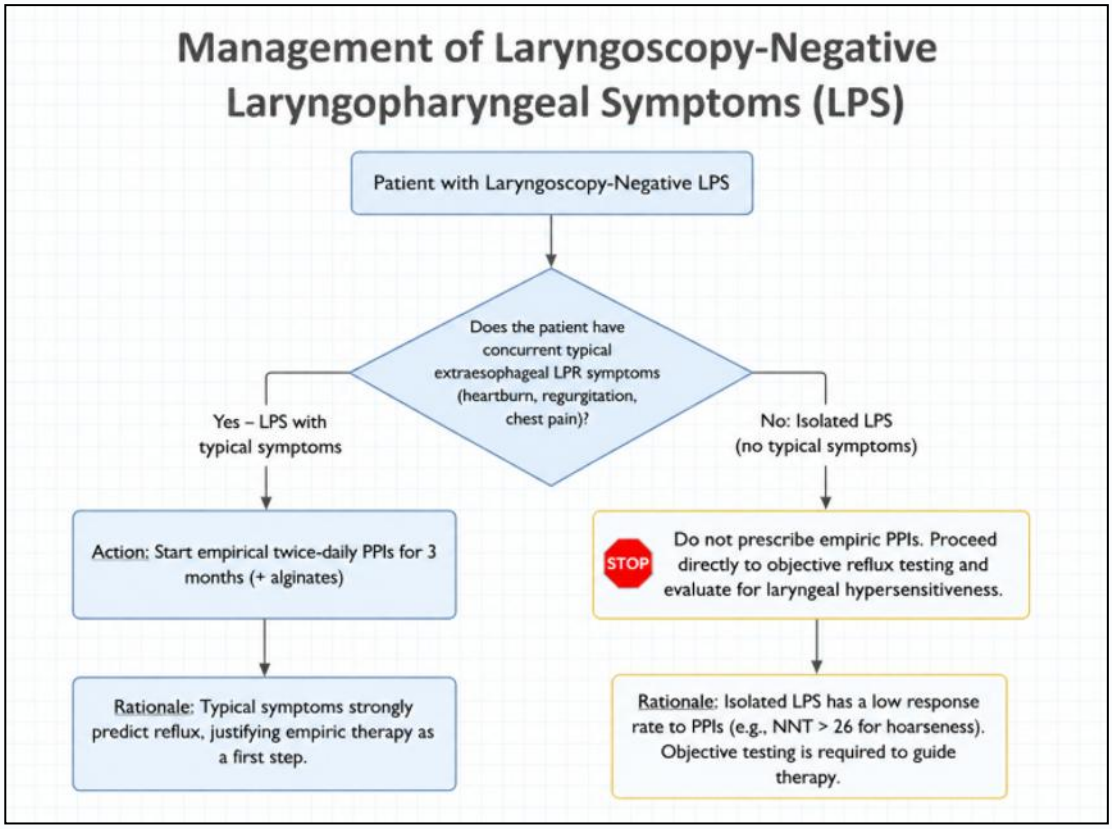
Symptoms must be **chronic (>8 weeks duration)** and **frequent (2+ episodes/week)**.
Included symptoms: **cough, throat clearing, hoarseness/voice change, excessive phlegm, throat pain/sore throat**.
Excluded symptoms: globus sensation (linked to visceral hypersensitivity rather than reflux).

LPRD = LPS + objective GORD evidence (confirmed by reflux monitoring or OGD)

This differentiation between LPS and LPRD is imperative, as symptoms do not always match disease. In fact, 60% of patients diagnosed with LPR have normal ambulatory reflux monitoring. With this, Dr Rusu highlighted the necessity of an objective diagnosis for LPRD to prevent inappropriate consideration for acid suppression therapy and anti-reflux surgery, and to focus evaluation on non-gastrointestinal causes of symptoms, including the brain–larynx interaction.

The prevalence of LPS is high, affecting 10–35% of the global population. However, objective evidence of GORD, and hence a diagnosis of LPRD, is confirmed in only one-third of patients presenting for specialist evaluation with LPS. Dr Rusu highlighted the clinical implication of these figures, as most patients with LPS do not have LPRD; it would therefore be incorrect to treat LPS based on this assumption.

The San Diego Consensus recommends that patients with LPS should first undergo a laryngoscopy to exclude non-reflux pathology (i.e. malignancy, vocal fold lesions and structural causes of symptoms). Dr Rusu emphasised the role of laryngoscopy in LPRD diagnosis as being purely for exclusion, as non-specific findings that may relate to reflux (erythema and oedema) can lead to overdiagnosis.

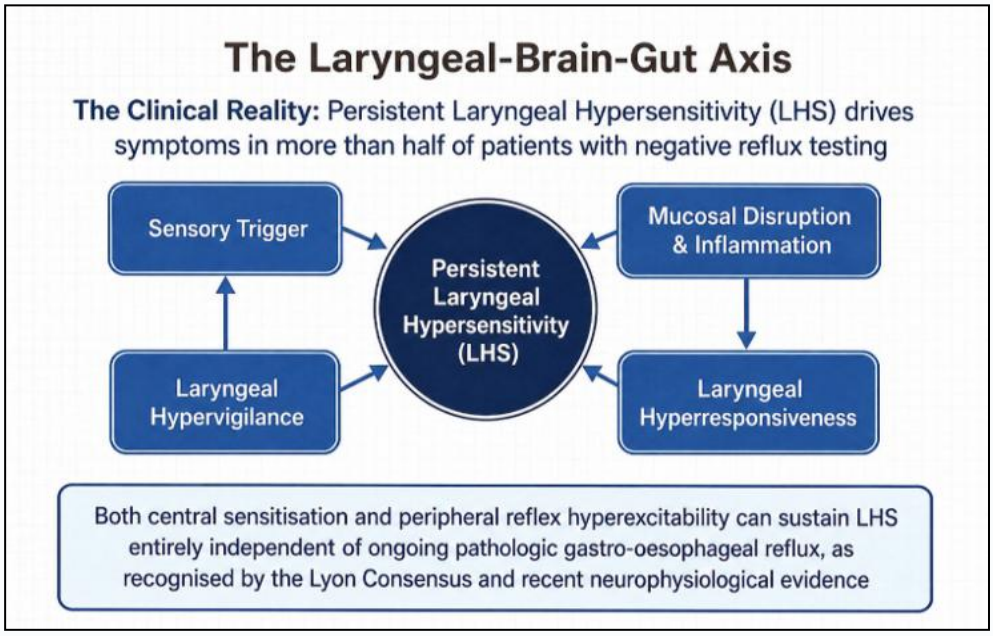


Laryngoscopy-negative patients should then be distinguished based on the presence or absence of oesophageal reflux symptoms. Patients with LPS should be prescribed empiric PPIs for three months only if they have concurrent typical oesophageal reflux symptoms. This is justified, as typical GORD symptoms are strong predictors of reflux.

Patients with isolated LPS and no typical GORD symptoms should alternatively proceed directly to objective reflux testing to guide therapy. As isolated airway symptoms are rarely driven by pathological reflux, empiric acid suppression tends to fail. Dr Rusu illustrated this with findings of NNTs with PPIs (number needed to treat for one person to receive a positive outcome) of 25 for isolated chronic cough and 78–100+ for isolated hoarseness, compared with NNTs of <5 for typical heartburn/regurgitation and 4.2 for cough with proven GORD.

LPRD may be objectively diagnosed by 24-hour pH impedance monitoring or 96-hour wireless pH monitoring. These should be performed off acid suppression medication in unproven GORD, in line with the Lyon Consensus 2.0.

In patients with isolated LPS and negative reflux testing, persistent laryngeal hypersensitivity should be considered. The San Diego Consensus states that hyperresponsive laryngeal behaviours (e.g. throat clearing and coughing) and laryngeal hypervigilance (increased threat-induced attention to the larynx) may contribute to, or be the primary aetiology of, LPS.



The San Diego Consensus recommends a staged approach (escalating interventions) for hyperresponsive phenotypes:

1. Laryngeal recalibration therapy (delivered by speech and language therapists) combines biomechanical techniques with autonomic regulation to disrupt the cough–irritation–cough cycle and reduce laryngeal muscle tension.
2. Pharmacological neuromodulation may improve laryngeal hypersensitivity. Neural excitability is reduced with gabapentin and pregabalin, while central processing is modulated by tricyclic antidepressants.
3. Cognitive behavioural therapy (for refractory LPS) targets hypervigilance, symptom-specific anxiety and avoidance behaviours that maintain laryngeal hypersensitivity.

Overall, Dr Rusu's presentation provided a comprehensive guide to effectively managing, accurately diagnosing and successfully treating patients presenting with LPS. This is of invaluable importance in minimising excessive cost and resource burden, maximising therapeutic efficacy and improving patient outcomes.

Please note that all images are derived from Dr Radu Rusu's presentation.

Review: From Manometry to EndoFLIP—The Assessment of Dysphagia in 2026

Catherine Comrie, Trainee Clinical Scientist
Glasgow Royal Infirmary

During the AGIP session at BSG LIVE 2026, Dr Jamal Hayat, Consultant Gastroenterologist at St George's University Hospitals NHS Trust, presented an informative and engaging talk on the assessment of dysphagia in 2026.

Recently, I had the privilege of observing Endolumenal Functional Lumen Imaging Probe (EndoFLIP) in action during a trial day at a local Glasgow hospital. EndoFLIP is a minimally invasive test performed during endoscopy to measure oesophageal pressures and dimensions. The trial involved performing EndoFLIP on five selected patients who had previously undergone high-resolution oesophageal manometry (HROM) investigations. A key message from the day was that EndoFLIP provided diagnostic clarity for three patients with suspected achalasia and helped guide a treatment option for one patient. There is a possibility that EndoFLIP could be incorporated within future practice in Glasgow. As such, I was pleased to have been allocated Dr Jamal Hayat's presentation, which focused on assessing dysphagia utilising HROM and EndoFLIP, to improve my understanding of this technology.

Initial Assessment

Jamal began the presentation by emphasising the importance of taking a good patient history when assessing dysphagia before manometry is performed. He highlighted the high prevalence of dysphagia, which affects ~20% of the population. He stressed that a good patient history allows patient complaints to be differentiated into symptoms associated with dysphagia, such as globus, odynophagia, chest pain, and oropharyngeal and oesophageal dysphagia. He stated that histories often drive which tests are selected to investigate the cause of dysphagia.

Jamal then explained that an oesophagogastroduodenoscopy (OGD) is often the first-line test used to investigate oesophageal dysphagia, summarising the typical causes in Table 1. He highlighted the importance of taking biopsies to exclude eosinophilic oesophagitis (EoE) during an OGD, even during examination of an apparently normal-looking oesophagus. Dr Hayat explained this because up to 30% of patients with an apparently normal-looking oesophagus during endoscopy can have an abnormally high number of oesophageal eosinophils when investigated by histology.

Causes of Oesophageal Dysphagia	Examples
Structural/ mechanical	Malignancy Peptic stricture Schatzki ring Hiatus hernia Pos-surgical
Mucosal	EoE Erosive oesophagitis Barrett's oesophagus Candidiasis Radiation
Motility	Achalasia (types I-III) Oesophagogastric junction outflow obstruction (OGJOO) Hypercontractile/ spastic Absent contractility Ineffective oesophageal motility (IOM)
Functional/ systemic	Functional dysphagia Connective tissue disease Neurological Post-COVID dysmotility

Table 1: summary of the different causes of oesophageal dysphagia, with examples. Information in this table was taken from Dr Jamal Hayat's presentation.

Jamal summarised that results from an OGD, such as identifying a large hiatus hernia, a narrow-calibre oesophagus, or previous bariatric surgery, can influence the approach to physiological assessment. Jamal explained that performing EndoFLIP at index OGD, as is standard procedure in the United States, has been proposed as routine practice in the UK. However, he raised the question of its feasibility within a busy NHS setting.

Jamal discussed the value of performing barium swallows for identifying anatomical abnormalities, assessing aspiration and oropharyngeal function, and investigating instances of equivocal manometry results. He emphasised the importance of performing a timed barium oesophagram for a more prognostic assessment, to objectively quantify oesophageal emptying and help assess treatment response. The limitations of these tests were then outlined as the inability to classify achalasia subtypes, their low sensitivity for early motility disorders, and the fact that barium swallows cannot be used to exclude significant motility disorders.

Jamal then provided an overview of the evolution of oesophageal physiology measurements (Figure 1).

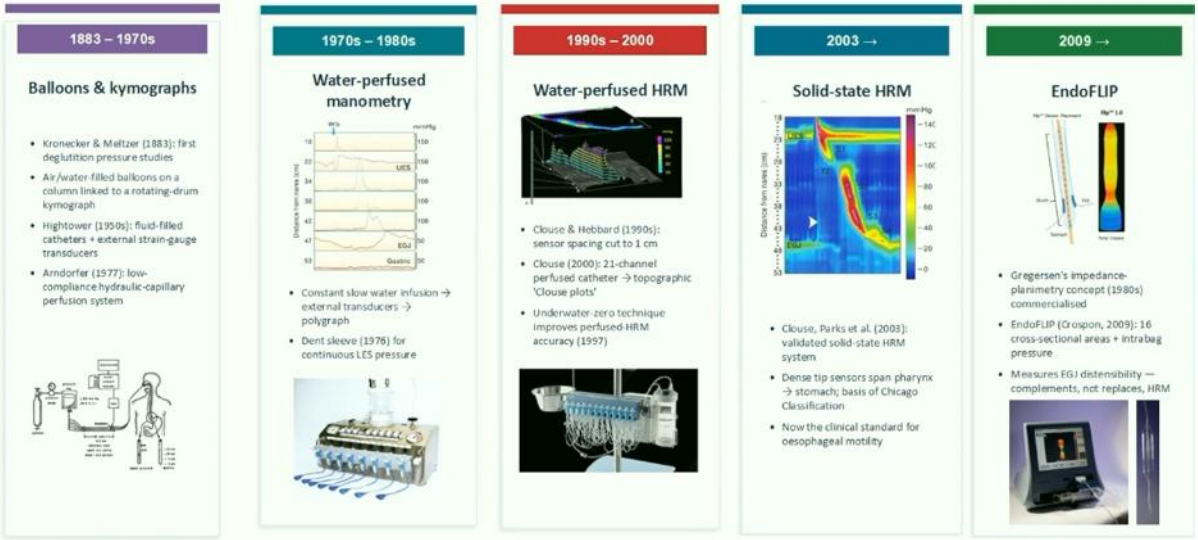


Figure 1: *The evolution of oesophageal physiology measurement, from the initial invention of deglutition pressure studies in 1883 (Kronecker and Meltzer) to the most recent technology, EndoFLIP, in 2009 (Crospon) and onwards. Image taken from Dr Hayat's presentation.*

High Resolution Oesophageal Manometry

During Jamal's introduction of HROM, he stressed the importance of performing the standardised protocol correctly and to a high standard. The protocol should begin with baseline sphincter measurements, followed by ten 5ml single wet swallows 20–30 seconds apart, and conclude with provocative testing such as multiple rapid swallows, solid bolus swallows, and free drinking. Additionally, he recommended HROM with impedance to demonstrate oesophageal bolus clearance.

Jamal then introduced the Chicago Classification Version 4.0 (CCV4.0) to the audience. He explained the purpose of this classification system, which is to divide oesophageal dysmotility into disorders of the OGJ and disorders of peristalsis (Figure 2). Jamal described the positive impact of strengthening the criteria from CCV3.0 to CCV4.0 to create a more discriminatory classification, which incorporates adjunct symptoms, provocative measures, and additional tests such as barium swallows for diagnosis and definitive treatment.

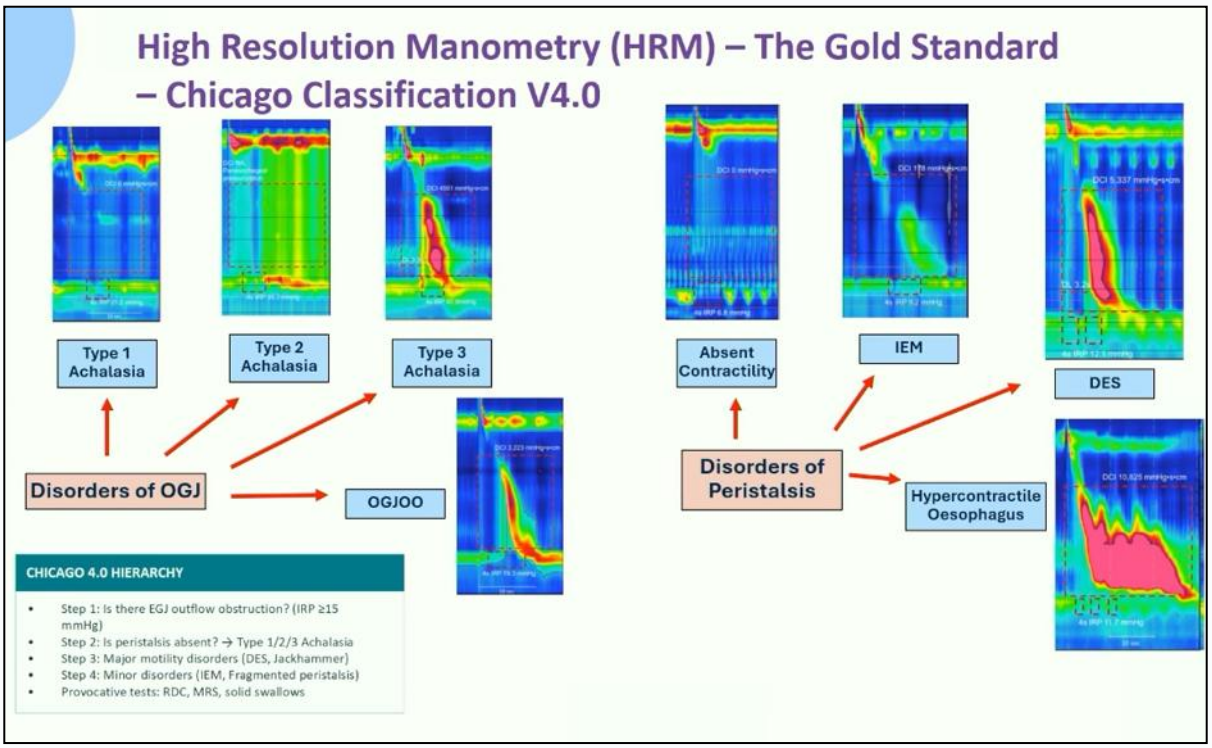


Figure 2: *Summary of the standardised classification system, the Chicago Classification Version 4.0, for diagnosing oesophageal dysmotility during high-resolution oesophageal manometry. Image taken from Dr Hayat's presentation.*

Jamal concluded his session on HROM by highlighting the value of provocative testing for improving diagnostic yield, clarifying borderline cases, and identifying prognostic value before anti-reflux surgery. He effectively summarised the different provocative tests commonly used within HROM practice (Figure 3) and the challenges associated with HROM, such as patient intolerance, post-traumatic stress, absence of sedation, and reported equivocal integrated residual pressure (IRP) of 10–15 mmHg.

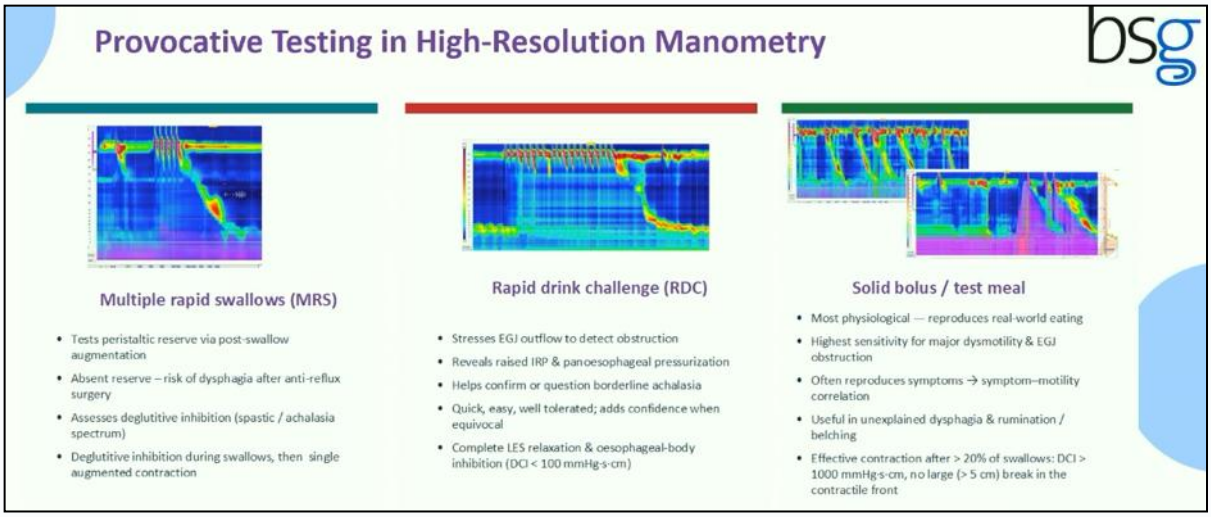


Figure 3: *Summary of provocative testing that can be used during HROM. Examples include multiple rapid swallows, rapid drink challenge, and solid bolus/test meal. Image taken from Dr Hayat's presentation.*

EndoFLIP

During the next section of Jamal's presentation, EndoFLIP was introduced as another test used in physiological measurement of the oesophagus. He explained that EndoFLIP involves a catheter with 16 impedance sensors along its length and one pressure sensor. The catheter balloon, which spans 16 cm along the length of the catheter, is inflated with an electrolyte solution to measure the diameter and distensibility of the oesophagus. The oesophageal cross-sectional luminal diameter is measured using the diagnostic medical technique, impedance planimetry. The distensibility index (DI) is measured by calculating the relationship between luminal geometry and distensive pressure; in other words, the rigidity of the oesophagogastric junction (OGJ). A DI of <2 is indicative of significant lower oesophageal sphincter (LOS) abnormality.

Jamal described the process of using a 16 cm balloon to measure secondary oesophageal contractility responses to balloon distension. These responses are measured at three different balloon filling volumes (50, 60 and 70 mL) and present as repetitive antegrade contractions on the FLIP topography plot, as shown in Figure 4. Furthermore, Jamal explained that key metrics during EndoFLIP should be interpreted at different balloon volumes, with the DI measured at 60 mL and the maximum OGJ diameter at 70 mL.

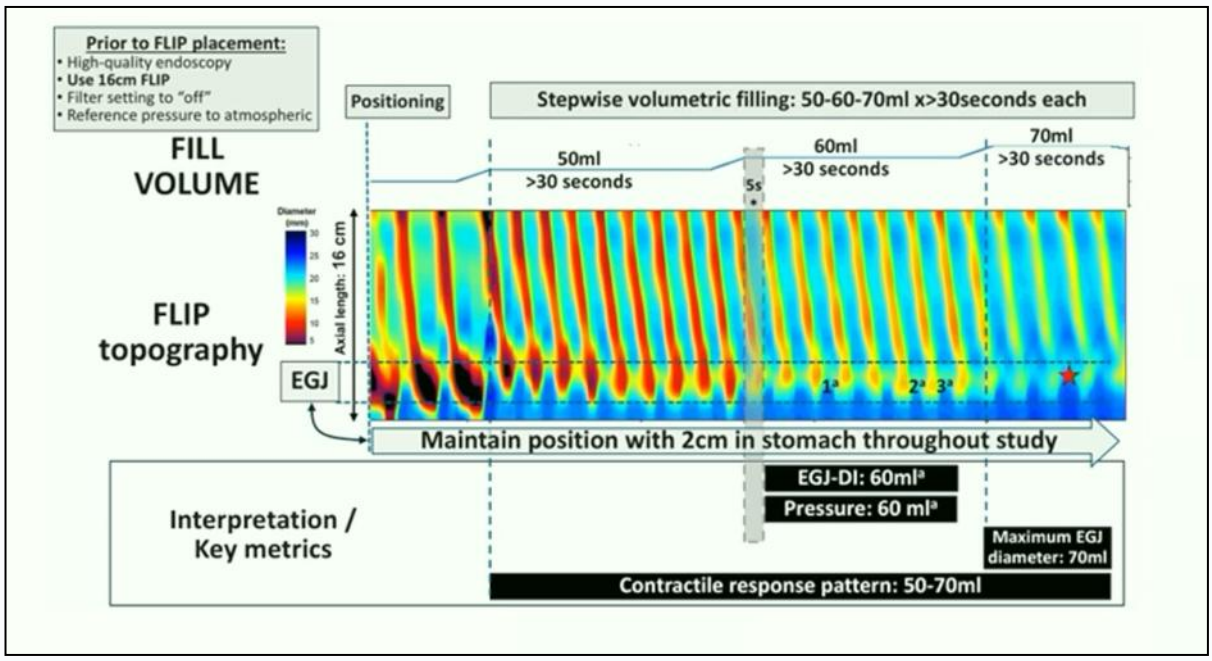


Figure 4: *Details of the steps involved prior to and during EndoFLIP. Secondary oesophageal contractility responses are displayed on the FLIP topography plot and measured for >30-second periods at balloon volumes of 50, 60 and 70mL. Key metrics should be interpreted at specific balloon volumes. The contractile response should be interpreted at 50–70mL. The OGJ-DI and OGJ pressure should be interpreted at 60mL. The maximum OGJ diameter should be interpreted at 70mL. Image taken from Dr Hayat's presentation.*

Jamal then highlighted the key differences between HROM and EndoFLIP (Figure 5).

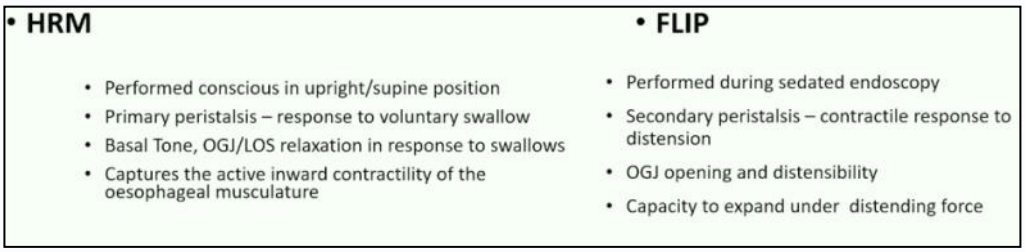


Figure 5: *Key differences between high-resolution manometry (HRM) and EndoFLIP. Image taken from Dr Hayat's presentation.*

Jamal then introduced the Dallas Classification Version 2.0 (DCV2.0), released in 2025 and used for performing and interpreting EndoFLIP procedures. Jamal pointed out the classification system's relative immaturity compared to the CCV4.0 and explained that there is still a lot to learn about EndoFLIP.

Literature

This led Jamal on to address the available literature from which the key metrics measured during EndoFLIP have been generated. He introduced the study performed by Rooney *et al.* (2020), who demonstrated that, in 240 achalasia patients, a DI of <2 and a maximum diameter of <12 mm had a >80% chance of correlating with achalasia or a disorder of OGJ outflow obstruction (OGJOO). Additionally, the study reported that a DI of >3 and a maximum diameter of >16 mm had high negative predictive values for ruling out achalasia. Jamal highlighted that the DCV2.0 (Carlson *et al.*, 2025) provides detailed interpretation for assessing contractile responses (Figure 6).

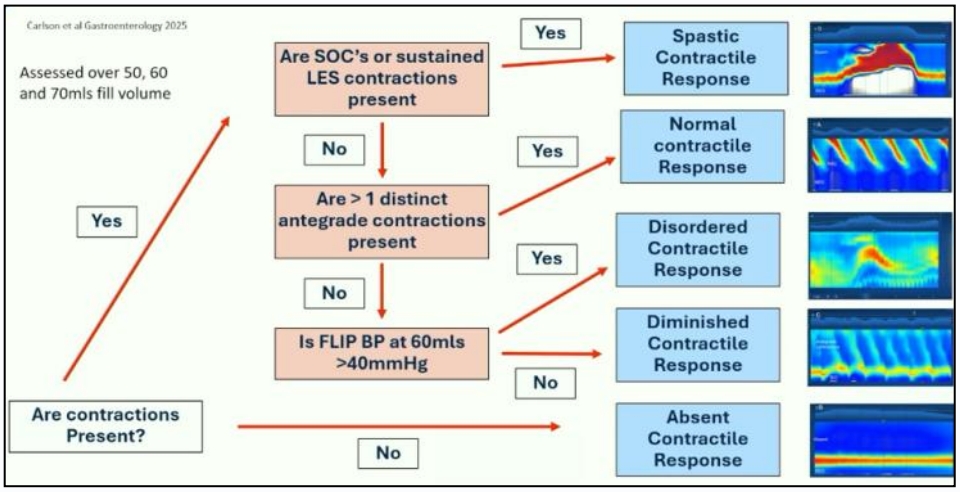


Figure 6: *Guidance in the DCV2.0 for interpreting contractile responses during EndoFLIP. Image taken from Dr Hayat's presentation.*

Jamal then described OGJOO as one of the most difficult diagnoses to define in manometry, which led him on to the study by Carlson *et al.* (2023), highlighting the use of EndoFLIP for confirming OGJOO. This study performed EndoFLIP on a cohort of 139 patients with an equivocal OGJOO diagnosis during HROM and categorised them into three groups: normal, inconclusive, and conclusive OGJOO. The clinical implications of this study were that patients with normal OGJ opening during HROM and EndoFLIP should be treated conservatively, whereas patients with abnormal EndoFLIP and OGJOO during HROM should be treated proactively with an achalasia-type treatment (Figure 7).

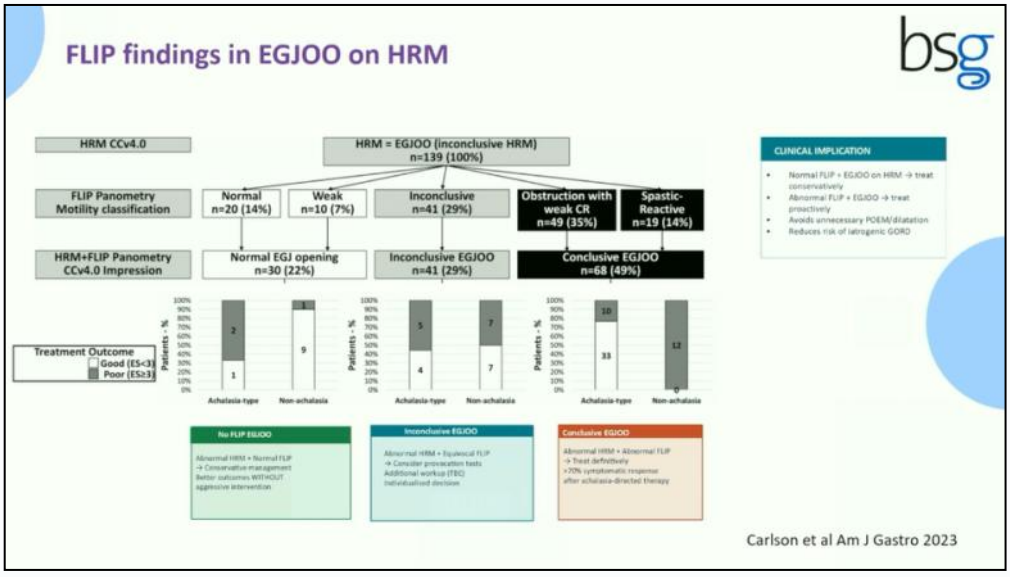


Figure 7: *Summary of the study by Carlson et al. (2023), which used EndoFLIP to confirm OGJOO in 139 patients with inconclusive OGJOO during HROM. Patients with conclusive OGJOO during EndoFLIP and HROM responded better to achalasia-type treatments compared with patients with normal OGJ opening confirmed during EndoFLIP, who instead responded better to conservative treatments. Image taken from Dr Hayat's presentation.*

Jamal proceeded to compare the Dallas 1.0 and CCV4.0 for diagnosing oesophageal function. Carlson *et al.* (2021) compared diagnoses from the two classifications in 722 patients and demonstrated that a normal diagnosis during EndoFLIP equated to >95% chance of a normal or IOM finding during HROM. In other words, a normal EndoFLIP diagnosis showed a low probability of finding an actionable HROM diagnosis. On the flip side (pun intended by Jamal), an EndoFLIP diagnosis of obstruction and weak contractile response showed a >90% chance of a disorder of OGJOO during HROM. Furthermore, similar results were found in the study by Fass *et al.* (2025), which looked at 805 patients.

Jamal went on to highlight the potential for the OGJ-DI measurement obtained during EndoFLIP to be used for assessing treatment response in achalasia. In a study of 52 patients with achalasia who had received treatment, a lower OGJ-DI showed a stronger association with retention of barium during a barium swallow compared with other metrics such as IRP or LOS resting pressure.

Jamal then stated that the introduction of EndoFLIP during EoE is still at an observational stage. However, he explained that it has been demonstrated that EoE patients with normal distensibility during EndoFLIP are more likely to have positive outcomes with anti-inflammatory therapy and rarely require dilatation. In comparison, it has been reported that patients with reduced distensibility, i.e. a reduced diameter of the maximal oesophageal body at stretch, have an increased risk of food impaction. Overall, Jamal explained that reduced distensibility can be used as a surrogate marker to detect disease activity and treatment response for EoE.

Conclusions

Jamal finished the presentation by discussing the limitations of EndoFLIP and emphasised the importance of having an awareness of what it can and cannot tell us. In particular, he drew our attention to the DCV2.0 diagnoses of possible obstruction and spasm as large grey areas. Interestingly, up to 37% of patients who attend for EndoFLIP are diagnosed within this grey area.

Further limitations he covered included that EndoFLIP catheters contain only one pressure sensor, which can be unreliable in a dilated or tortuous oesophagus. Additionally, EndoFLIP can have a weak capture of type III achalasia, with repetitive retrograde contractions perhaps adversely impacting its diagnosis. From a service-related perspective, EndoFLIP can be associated with issues including high cost, reduced equipment access, and expertise availability. There are many contractile patterns of unclear significance during EndoFLIP that are yet to be understood. Jamal concluded the talk with a slide summarising the pathway for investigating dysphagia in 2026, from the value of history taking to performing different investigations such as HROM and EndoFLIP (Figure 8).

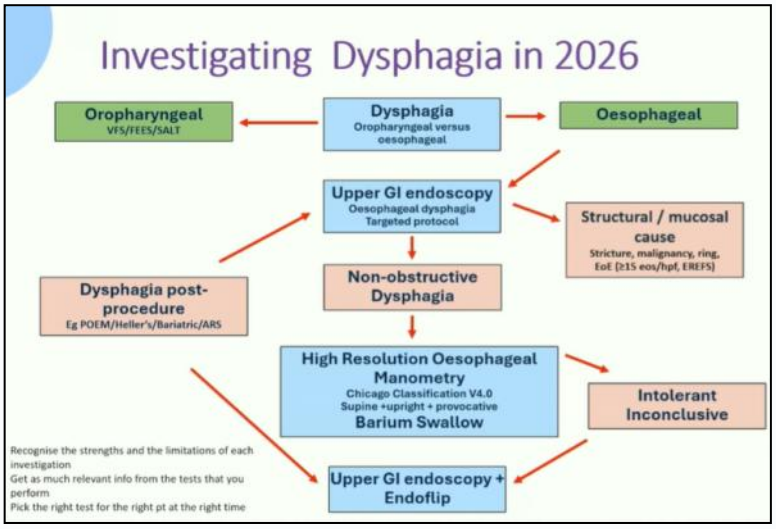


Figure 8: *Diagrammatic representation of investigating dysphagia in 2026. Image taken from Dr Hayat's presentation.*

I thoroughly enjoyed attending and writing this report on Dr Hayat's presentation, particularly after seeing EndoFLIP in practice recently. His presentation provided me with valuable insight into the clinical usefulness of EndoFLIP, albeit with some limitations. It also highlighted the current literature guiding and developing EndoFLIP practice within the NHS. As a second-year STP trainee, it is exciting to think about the future of integrating EndoFLIP into practice and the potential for Clinical Scientists to be involved in performing initial oesophageal motility assessments.

Long-term Follow-up from the BEST3 Trial:

Nazeli Levyan, Trainee Clinical Scientist
St George's University Hospitals NHS Foundation Trust

As part of the Oesophageal Free Papers session at the BSG, Dr Caryn Ross-Innes from the University of Cambridge delivered an insightful presentation about the long-term follow-up from the Barrett's Oesophagus Screening Trial 3 (BEST3), which demonstrated the safety of the capsule-sponge-trefoil-factor-3 test for Barrett's oesophagus (BO). This showed some very exciting and encouraging data to further demonstrate the great usability of capsule sponge in detecting BO in a less invasive manner using the trefoil-factor-3 biomarker.

Overview of Capsule Sponge Trefoil Factor 3 (TFF3) Test
The data discussed in this presentation came from the Barrett's Oesophagus Screening Trial 3 (BEST3), which is a randomised controlled trial that demonstrated that the capsule-sponge-trefoil-factor-3 test increased BO detection tenfold compared with usual care.

Dr Ross-Innes began by explaining how the capsule sponge Trefoil Factor 3 (TFF3) test works (Figure 1). This is a well-validated test that couples together a non-endoscopic method of sampling oesophageal cells with different biomarker assays. When the patient swallows the capsule sponge, the capsule dissolves in the stomach, and the sponge expands. When it is retrieved by pulling on the string, it samples cells from the top of the stomach and all along the oesophagus. These cells are then assessed for two biomarkers: cellular atypia (which is assessed on the standard H&E section) and TFF3, which is used as the biomarker for BO. The TFF3 stain highlights the goblet cells that are present in Barrett's oesophagus with intestinal metaplasia. She also presented a very exciting new pooled analysis of previous capsule sponge TFF3 tests from the BEST1 and BEST2 studies of over 1,500 participants who had a capsule sponge and endoscopic follow-up. This showed that, for complete swallows, the sensitivity was 91.9% and the specificity was 89.1%.

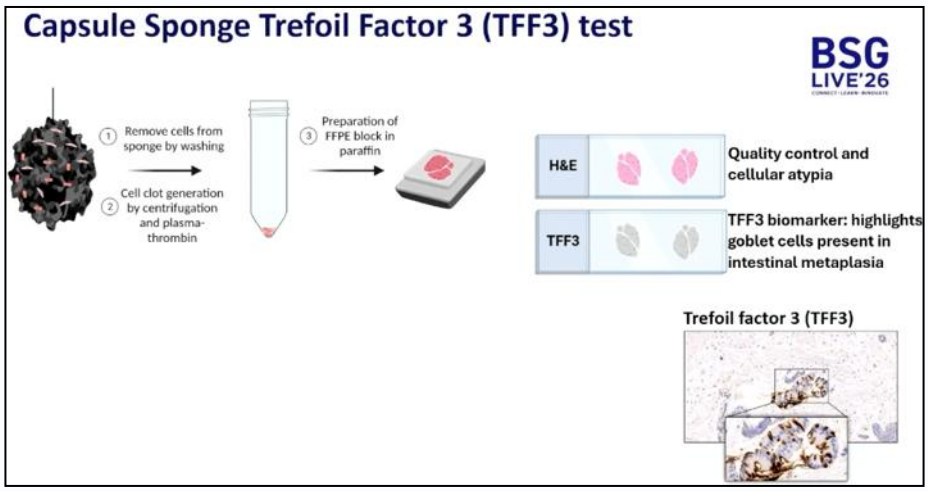


Figure 1: *Slide from Dr Ross-Innes' presentation outlining how the capsule sponge TFF3 test works.*

Landmark Study – BEST3 Study
Dr Ross-Innes began by explaining in more detail the landmark study (the BEST3 study). This recruited over 13,000 patients from 2017–2019 to identify whether, if the capsule-sponge TFF3 test is proactively offered to the intended screening population (e.g. patients over 50 with persistent reflux), Barrett's oesophagus can be detected more frequently than with usual care (Figure 2). Following the capsule sponge test, those with a positive result were triaged for endoscopy to confirm the diagnosis of BO. Of those with a positive result, three were found to have high-grade dysplasia, three had oesophageal adenocarcinoma (all stage 1), and one had gastric adenocarcinoma (stage 1). It was also found that ten times more BO was diagnosed compared with usual care.

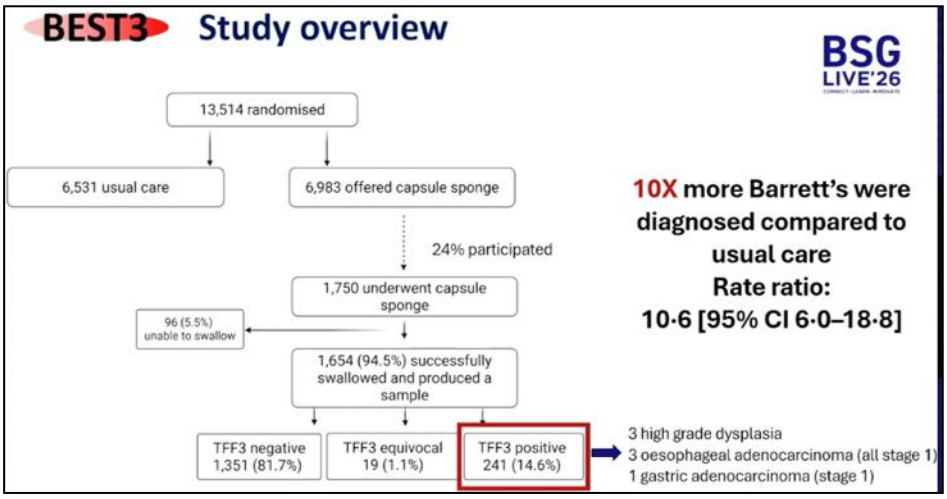


Figure 2: *Slide from Dr Ross-Innes' presentation showing the BEST3 study overview.*

12-Month Follow-up of the BEST3 Study
This study was a 12-month follow-up of the patients from the BEST3 study to identify what happened with these patients and whether any oesophageal or gastric cancers were missed in those who swallowed the capsule sponge (Figure 3). This study focused on those who were TFF3 negative (and therefore not triaged for endoscopy), which was 81.7% of the patients who successfully swallowed the capsule sponge and produced a sample. The data were retrieved by looking at the cancer incidence and mortality data from the UK Cancer Registry and Civil Registration Mortality datasets.

Of the 1,351 patients who were TFF3 negative in 2018, there was one patient found to have gastric cancer five years after the BEST3 study, in 2023. Dr Ross-Innes presented very encouraging data showing that there were no oesophageal cancers missed in those who swallowed the capsule sponge as part of the BEST3 study. Including the one gastric cancer detected five years later, this gave a negative predictive value for detecting oesophageal or gastric cancer of 99.9%.

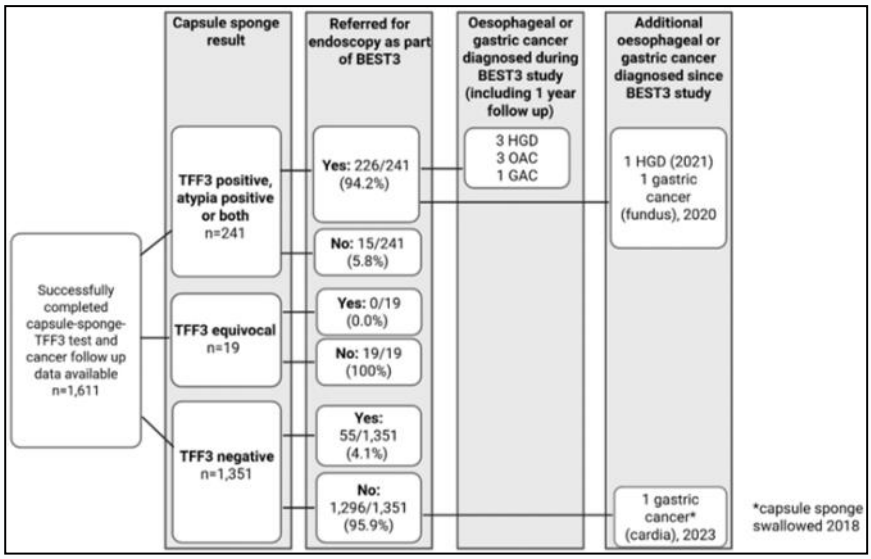


Figure 3: *Slide from Dr Ross-Innes' presentation demonstrating all the long-term data obtained from the BEST3 study.*

Next Steps
Dr Ross-Innes concluded the presentation by outlining the ongoing next steps for the capsule-sponge TFF3 test, which is the BEST4 trial (Figure 4). This will be the definitive randomised controlled trial to identify whether it is clinically impactful in diagnosing more BO with the capsule sponge TFF3 test, particularly whether it will lead to a reduction in oesophageal adenocarcinoma-associated morbidity and mortality. This will be an incredible breakthrough in demonstrating the impact of capsule sponge.

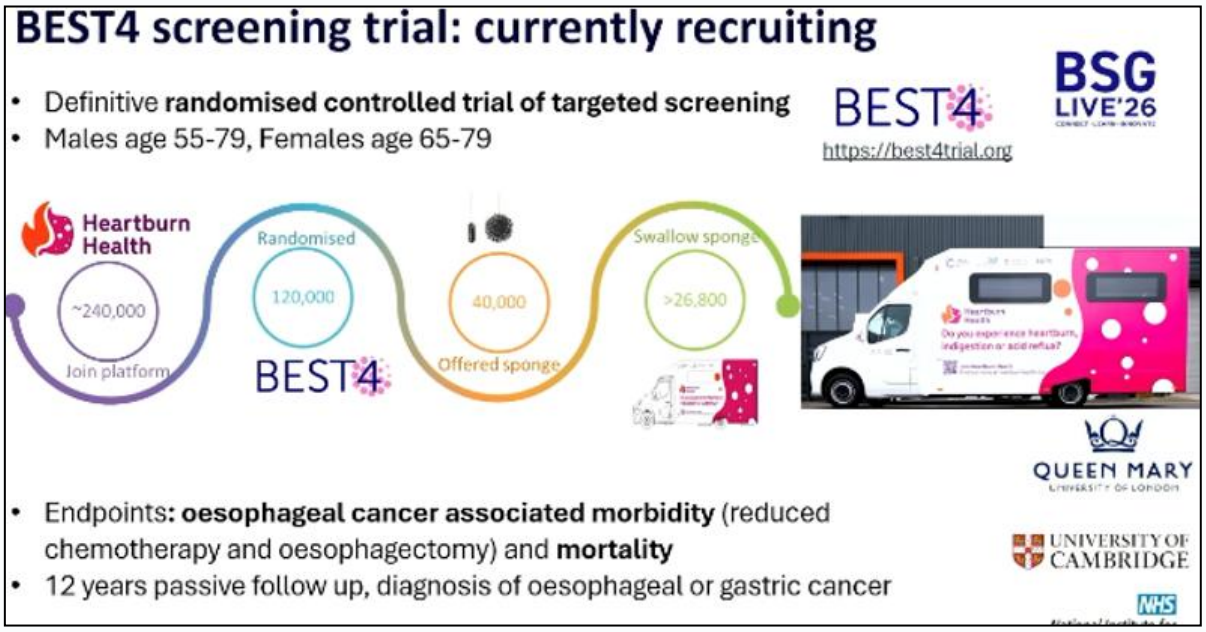


Figure 4: *Slide from Dr Ross-Innes' presentation showing the outline of the BEST4 trial.*

Conclusion
This exciting study demonstrated encouraging and compelling long-term evidence supporting the effectiveness of using capsule sponge in diagnosing BO, particularly by providing important reassurance that patients with a negative capsule sponge test result can be safely managed. As capsule sponge gains more traction in the NHS, it was very reassuring to learn of these long-term safety data, which highlighted the growing role of minimally invasive diagnostic technologies in improving patient pathways and facilitating earlier disease detection.

Review: Nonsurgical Treatment Options for OGJOO, Achalasia, and Non-Malignant Dysphagia

Ariadna Ramirez, Trainee Clinical Scientist
Sandwell and West Birmingham Hospitals NHS Trust

Dr Rami Sweis is a Consultant Gastroenterologist, Upper GI Lead at UCLH, and is involved in guidelines as a member of the International High-Resolution Manometry Working Group, which is responsible for classifying oesophageal disorders, including the Chicago Classification. He holds a Lecturer position at Newcastle University and is also President of the Association of GI Physiologists (AGIP). He is a member of the Oesophageal Section of the British Society of Gastroenterology (BSG).

Dr Sweis delivered an insightful presentation during the annual AGIP meeting on Tuesday afternoon at the BSG, discussing the non-surgical treatment options for oesophagogastric junction outflow obstruction (OGJOO), achalasia, and non-malignant dysphagia. He gave an overview of the management of these conditions, emphasising the importance of accurate diagnosis and targeted therapies.

Treatment for Dysphagia

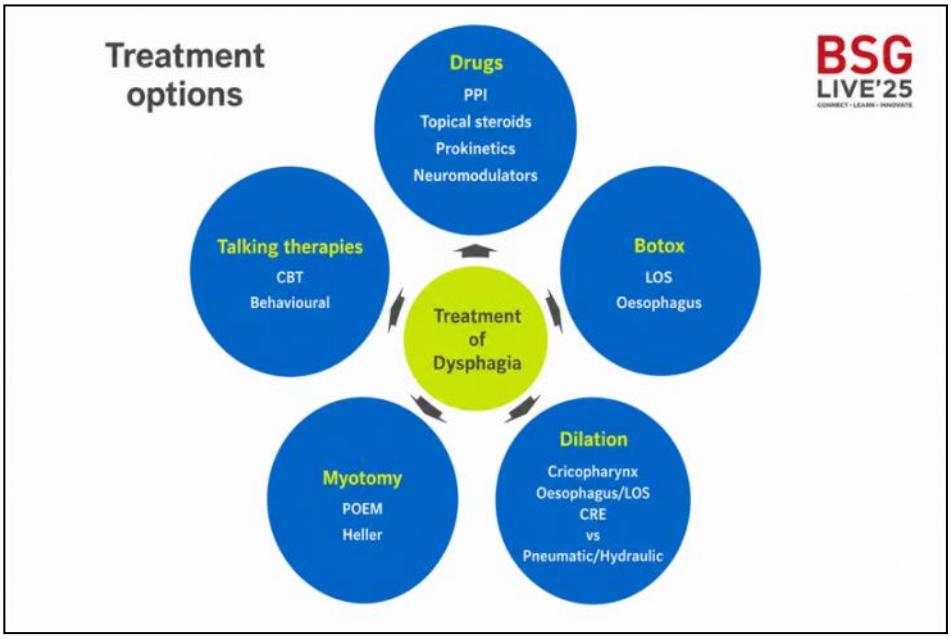


Figure 1: *Adapted from Dr Sweis' slide on dysphagia treatment options.*

Achalasia treatment (Figure 2) targets the lower oesophageal sphincter (LOS) by either injecting botulinum toxin (Botox), cutting and disrupting the sphincter (Heller's myotomy or POEM), or stretching it (pneumatic or hydraulic dilation) (Vaezi *et al.*, 2020) (Figure 1). Regardless of how achalasia is treated, it is important to know the subtype. Achalasia type II has the best outcome after treatment, whereas achalasia type III can be the most challenging. Type I or II achalasia targets the LOS, with type III using HRM to tailor treatment by disrupting the LOS and also determining how high to cut in the oesophageal body where spasm occurs (Vaezi *et al.*, 2020; Yadlapati *et al.*, 2021).

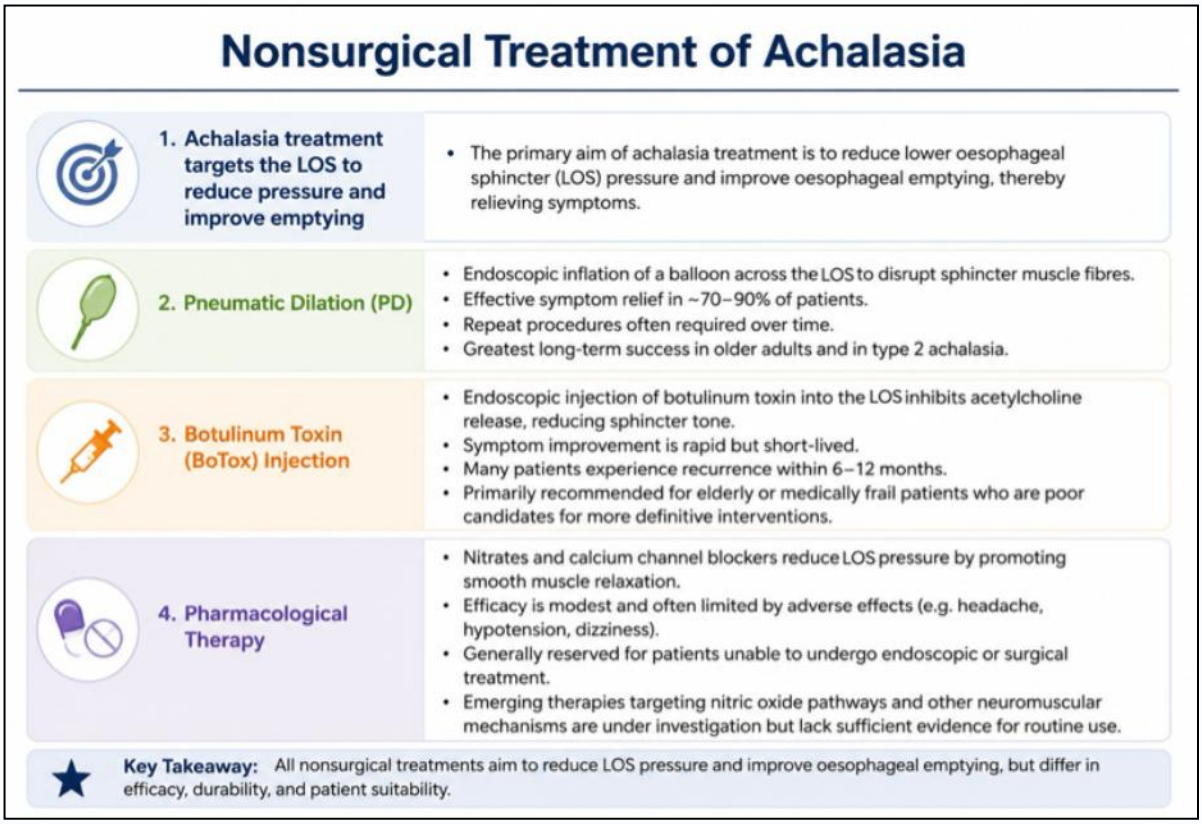


Figure 2: *Summary of non-surgical treatments for achalasia, adapted from Dr Sweis' presentation*.

The Chicago Classification v4.0 is followed for the diagnosis and classification of oesophageal motility disorders and disorders of OGJ outflow using high-resolution oesophageal manometry (HRM) (Yadlapati *et al.*, 2021).

Dr Sweis expanded on Botox treatment, explaining that it does not reduce the progression of disease and, in the majority of cases (>50%), symptoms can relapse. This option is reserved for those who cannot undergo more definitive therapy (Vaezi *et al.*, 2020).

Stretching the LOS with a non-compliant balloon is another option, with a bigger balloon showing better outcomes but higher risks. This has been studied according to balloon diameter (Heller *et al.*, 2019).

EndoFLIP (Figure 3) measures cross-sectional area, compliance, and distensibility, with the longer balloon also measuring the response to distension. This can be used for targeted therapy, allowing testing, treatment, and repeat testing to be performed during the same endoscopic procedure (Carlson *et al.*, 2022; Kahrilas *et al.*, 2025). Dr Sweis touched on the development of a new algorithm for the patient pathway using EndoFLIP, which should hopefully be ready next year.

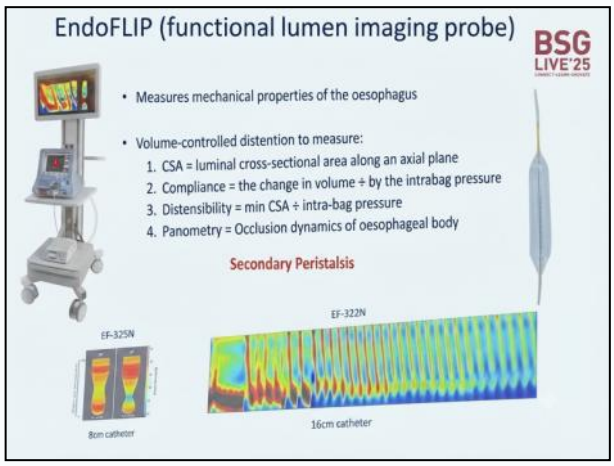


Figure 3: *Components and physiological measurements obtained during EndoFLIP.*

A recent systematic review of EsoFLIP, a therapeutic hydrostatic balloon that uses impedance planimetry technology, included 222 patients across eight observational studies. The pooled clinical success rate was 68.7%, with perforation or mucosal tear reported in four patients, although the authors concluded that the technique appeared to be relatively safe and effective based on the available evidence (Khan *et al.*, 2024). This should not be confused with diagnostic EndoFLIP, which is primarily used to assess oesophageal and oesophagogastric junction physiology rather than as a standalone treatment.

EndoFLIP can also be used to tailor the length of the myotomy during POEM. Intraoperative measurements of distensibility can help determine whether sufficient disruption of the LOS has been achieved and may prevent unnecessary extension of the myotomy. A study evaluating incremental myotomy demonstrated that the target distensibility range was achieved in approximately 50% of patients after transection of the high-pressure zone, suggesting that EndoFLIP may help guide a more individualised myotomy length (Teh *et al.*, 2023).

POEM has been established as a minimally invasive treatment for achalasia for approximately 15 years. The procedure involves creating a submucosal tunnel between the oesophageal mucosa and muscular layer, extending towards and across the LOS, followed by division of the circular muscle fibres. Studies have demonstrated that POEM is an effective treatment for achalasia and provides comparable clinical efficacy to laparoscopic Heller myotomy (LHM), particularly in type III achalasia, where a longer myotomy can be performed (Vaezi *et al.*, 2020; Kahrilas *et al.*, 2025). However, unlike LHM, POEM is not routinely accompanied by an anti-reflux procedure such as fundoplication. Consequently, gastro-oesophageal reflux is more common following POEM than after LHM with fundoplication. Where reflux occurs, it is often mild; however, patients require appropriate follow-up and treatment with proton pump inhibitors where indicated (Vaezi *et al.*, 2020; Oude Nijhuis *et al.*, 2020).

POEM can also be used to improve outcomes from failed myotomy. However, not all patients after Heller's myotomy are experiencing symptoms from the LOS not relaxing; it could be a problem with anatomy or from the wrap from the preceding fundoplication.

Dysphagia may also arise from other benign causes, including oesophageal strictures, webs, rings, and inflammatory disorders such as eosinophilic oesophagitis (EoE). These conditions require different diagnostic and therapeutic approaches. Endoscopic techniques may also be used in other structural disorders, including Zenker's diverticulum and selected epiphrenic diverticula, although the specific intervention should be tailored to the underlying anatomy and pathology (Hirano *et al.*, 2020; Dellon *et al.*, 2022).

Dr Sweis emphasised the importance of tailoring therapy according to the patient's condition. This includes assessing diagnostic tests such as HRM, for example, to check the level of spasm in type III achalasia.

Although surgery remains an effective treatment for selected patients, non-surgical therapies play a crucial role in symptom management, particularly for patients with mild disease, significant comorbidities, or those who are unsuitable for surgery.

Treatment of OGJOO

Treatment of OGJOO can be more challenging. The diagnosis is based on a raised IRP in HRM, relevant typical symptoms, and an additional test (EndoFLIP or timed barium swallow). Provocative testing, such as a solid meal, should also be considered during HRM. Once OGJOO is confirmed, therapies include pneumatic or hydraulic dilatation at the level of the LOS. Botox is not commonly used. Dr Sweis' opinion for these patients is to avoid irreversible therapy such as myotomy in isolation due to the possibility of patients progressing towards achalasia, requiring different therapies. It was also pointed out that it is important to rule out eosinophilic oesophagitis (EoE), as this can present as obstruction at the GOJ and should be treated differently.

Management of Non-Malignant Dysphagia
Oesophageal body dysfunction is a challenging condition to treat, as there is no mechanical obstruction, and there are different types following the Chicago Classification v4.0. When performing HRM and classifying a disorder of peristalsis, the patient's symptoms and clinical relevance should be considered before proceeding to treatment. For benign dysphagia, treatment should address the specific cause, including endoscopic dilatation, acid suppression, anti-inflammatory therapy, and swallowing rehabilitation.

Ineffective Oesophageal Motility (IOM) is not always clinically relevant and can be observed in healthy cohorts (Yadlapati *et al.*, 2021). Absent motility (aperistalsis) also has its limitations in diagnosis, especially if no provocative measures have been undertaken during HRM. Dr Sweis argues that, anecdotally, some of these patients, upon having a meal during HRM, will occasionally show peristalsis, even if this is weak, disproving a diagnosis of aperistalsis. It is important to treat the patient's symptoms rather than the test diagnosis. Studies have shown the importance of provocative measures in determining a more accurate diagnosis so treatment can be more effective.

The Dallas Consensus is the equivalent of the Chicago Classification but focuses on the GOJ. This is still a new tool, and not all patterns are fully understood in clinical practice (Figure 4).

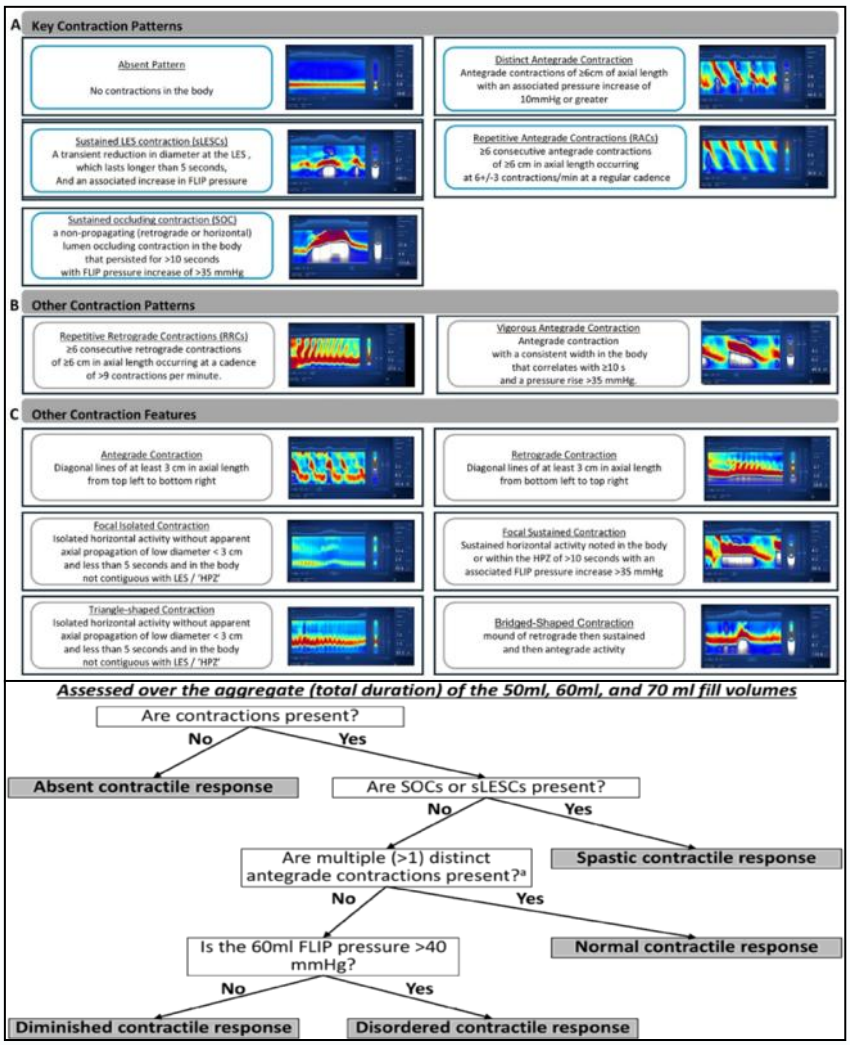


Figure 4: EndoFLIP key contraction patterns and procedure assessment. Taken from the Dallas Consensus.

One topic that was not covered in this presentation but should be considered for the treatment of functional swallowing disorders or oropharyngeal dysphagia is speech and language therapy, which provides swallow rehabilitation exercises, dietary modification, and compensatory swallowing techniques to improve swallowing safety. Multidisciplinary management involving gastroenterologists, dietitians, speech and language therapists, and radiologists is therefore essential for optimal patient outcomes (Dziewas *et al.*, 2021).

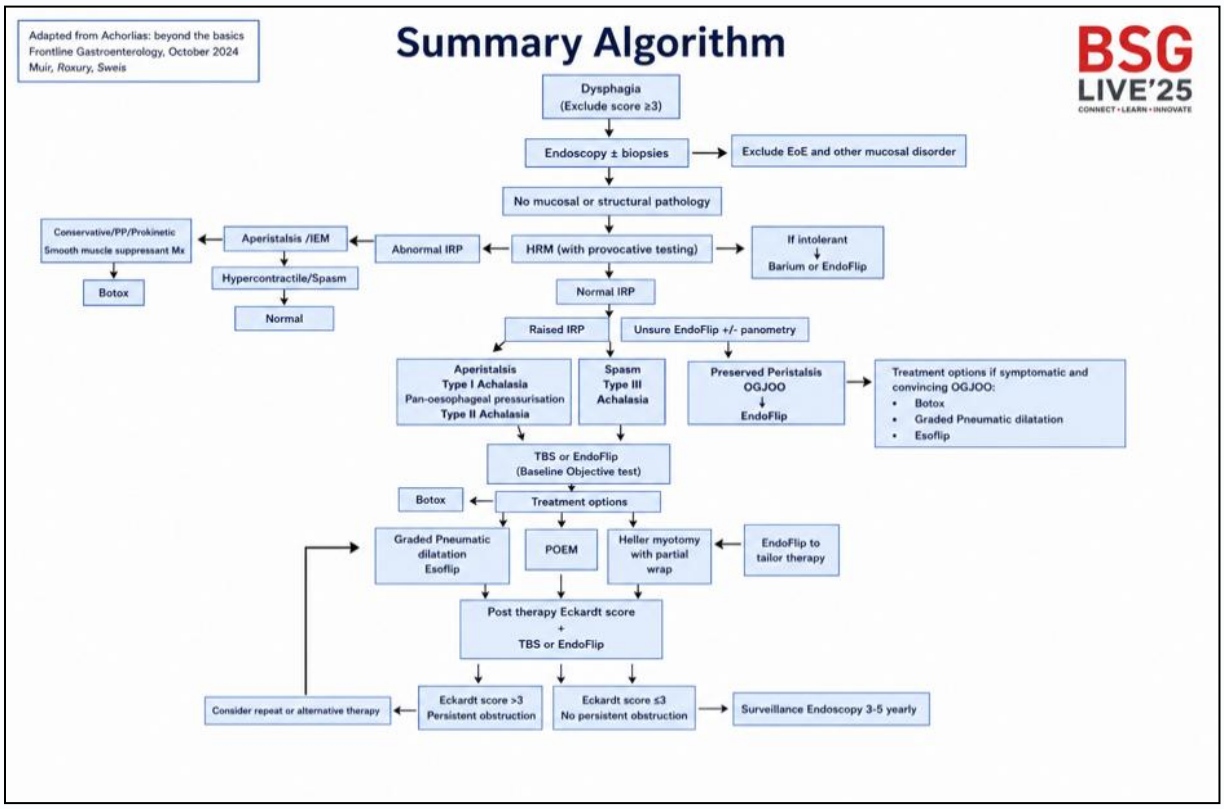


Figure 5: *The Dysphagia Summary Algorithm.*

Conclusion

Firstly, it is important to confirm the diagnosis. Consider provocative testing during HRM. Make sure the patient has had the relevant tests (EndoFLIP, barium swallow) to confirm the diagnosis. Overall, conservative management is best considered before permanent therapy. Also consider pharmacology, including optimising PPI therapy. Ask about opioids, as these can affect oesophageal motility and cause dysphagia, provide smooth-muscle-relaxant medication if relevant, and treat hypersensitivity (such as with amitriptyline). Do not overtreat, and avoid invasive and irreversible therapy in OGJOO, opiate-induced disorders, and any other disorders without clear confirmation. Achalasia therapy should be based on local expertise and patient choice. There is no gold standard. This should be treated early, and the cycle of constant Botox should be avoided. If expertise is not available locally, the patient should be referred without delay.

References

1. Carlson, D.A. et al. (2022) 'How Updates in Chicago Classification Impact Clinical Practice', Gastroenterology & Hepatology, 18(1), pp. 1–10. Carlson, D.A. et al. (2025) 'A Standardized Approach to Performing and Interpreting FLIP Panometry for Esophageal Motility Disorders: The Dallas Consensus', Gastroenterology. Available at: PubMed/PMC article (Accessed: 21 July 2026).
2. Dellon, E.S. et al. (2022) 'Updated International Consensus Diagnostic Criteria for Eosinophilic Esophagitis: AGREE Conference', Gastroenterology, 163(1), pp. 1–7. Dziewas, R. et al. (2021) 'European Stroke Organisation and European Society for Swallowing Disorders guideline for the diagnosis and treatment of post-stroke dysphagia', European Stroke Journal, 6(3), pp. LXXX–LXXX.
3. Heller, A. et al. (2019) 'Efficacy and safety of pneumatic dilation in achalasia: a systematic review and meta-analysis', Neurogastroenterology & Motility, 31(11), e13608. Hirano, I. et al. (2020) 'AGA Institute and the Joint Task Force on Allergy-Immunology Practice Parameters Clinical Guidelines for the Management of Eosinophilic Esophagitis', Gastroenterology, 158(6), pp. 1776–1786.
4. Kahrilas, P.J. et al. (2025) 'A Standardized Approach to Performing and Interpreting FLIP Panometry for Esophageal Motility Disorders: The Dallas Consensus', Gastroenterology. Available at: Dallas Consensus paper (Accessed: 21 July 2026).
5. Khan, M.A. et al. (2024) 'Safety and efficacy of EsoFLIP dilation in patients with esophageal dysmotility: a systematic review', Diseases of the Esophagus, 37(8), doae036. Oude Nijhuis, R.A.B. et al. (2020) 'European Society of Gastrointestinal Endoscopy (ESGE) Guideline: Endoscopic management of gastrointestinal motility disorders—part 1: esophageal disorders', Endoscopy, 52(6), pp. 498–515.
6. Teh, I.J. et al. (2023) 'Changes in Distensibility Index During an Incremental POEM Myotomy', Gastrointestinal Endoscopy.
7. Vaezi, M.F., Pandolfino, J.E. and Yadlapati, R.H. et al. (2020) 'ACG Clinical Guidelines: Diagnosis and Management of Achalasia', The American Journal of Gastroenterology, 115(9), pp. 1393–1411.
8. Yadlapati, R. et al. (2021) 'Esophageal motility disorders on high-resolution manometry: Chicago classification version 4.0', Neurogastroenterology & Motility, 33(1), e14058.

Review: Wireless vs Catheter-Based Reflux Monitoring - The Same, But Different

Samantha Morris, Clinical Scientist
University Hospitals of Derby and Burton NHS Foundation Trust

I had the pleasure of attending BSG LIVE 2026, where I listened to a fascinating talk by Dr Terry Wong. He is a Consultant Gastroenterologist at Guy's and St Thomas' Hospital, where he has been the Clinical Lead of the Oesophageal Laboratory since 2003. He presented on wireless vs catheter-based reflux monitoring. We don't currently perform wireless reflux monitoring at my NHS Trust, and I haven't had much involvement with it since my trainee days over a decade ago, so it was really interesting to learn more about it.

He began by discussing the widespread prevalence of gastro-oesophageal reflux disease and its diagnosis through the ACG Management Algorithm[1] and Lyon Consensus 2.0[2] (Figure 1), which require information on acid exposure time to conclude whether or not the patient has pathological reflux. This data can be obtained via 24-hour catheter-based reflux monitoring or ≥2-day wireless pH monitoring.

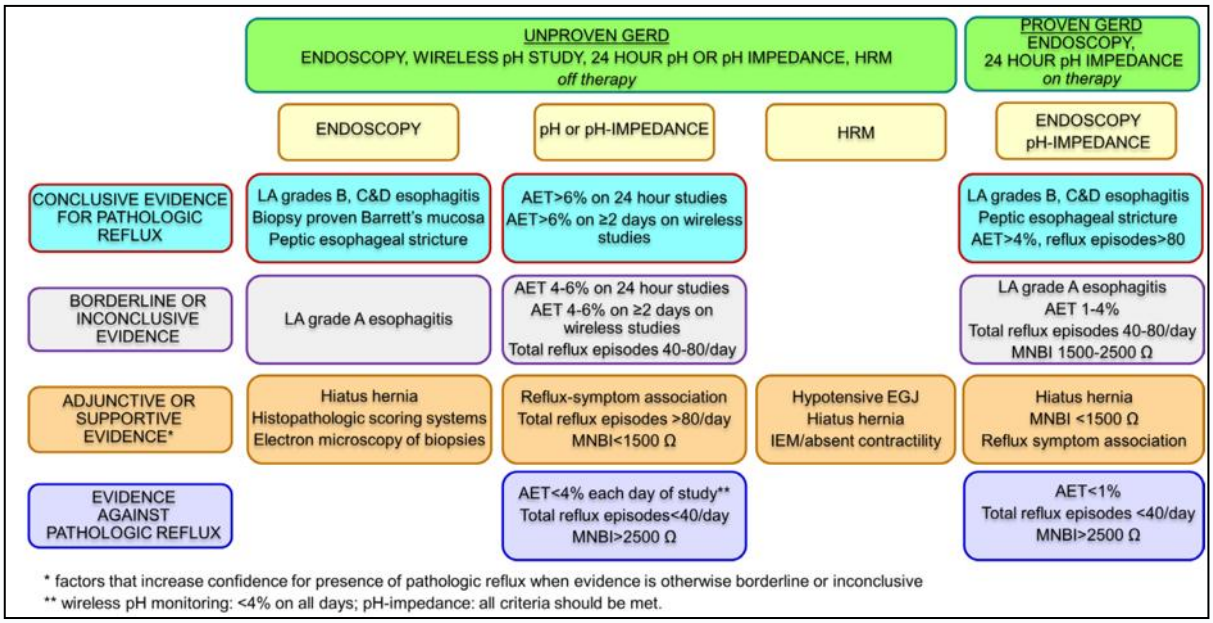


Figure 1. *Lyon Consensus 2.0.*

Traditionally, acid exposure time is measured using 24-hour catheter-based pH monitoring. This can be difficult for patients to tolerate and is limited by the short study duration, along with the patient's altered activities and diet during the study period. Dr Wong argued that this can lead to diminished diagnostic yield, which he expanded on later in the presentation.

Dr Wong took us on a brief walk through history, discussing the development of wireless pH monitoring all the way back to 1982, through the development of the first commercial system (Medtronic's "Bravo" (Figure 2)) in the 1990s, to the more recent competitor (Laborie's "alpHaONE" (Figure 3)). Initially, testing periods were limited to 48 hours due to receiver limitations, but over time this expanded to a 96-hour testing period.

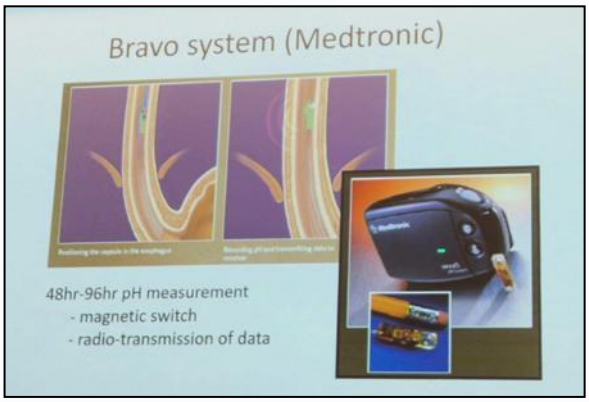


Figure 2. *Medtronic's Bravo wireless capsule system.*

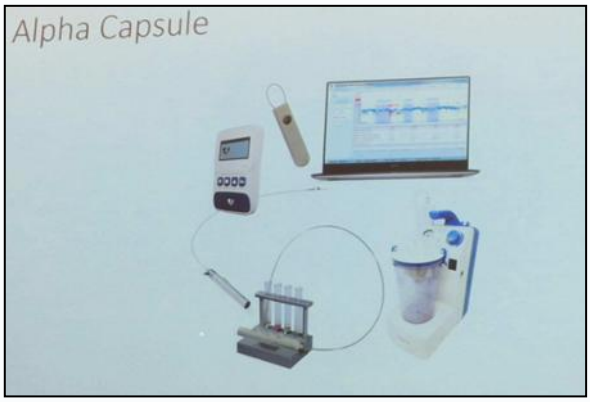


Figure 3. *Laborie's alpHaONE wireless capsule system.*

We were then treated to a video of wireless capsule intubation through endoscopy. The capsule is placed 6 cm above the Z-line, which corresponds to the same position that the pH sensor is placed during catheter-based assessment (5 cm above the LOS). Once deployed, the endoscope is pulled back slightly to confirm the capsule is attached to the oesophagus. The procedure is not without risk, as if the endoscope is extubated with the capsule still attached, it could become lodged or enter the lungs. Therefore, if correct attachment is not confirmed, the capsule must be deployed into the stomach and retrieved with a Roth net.

Despite these risks, he argued that there is a place for wireless pH monitoring and explored its role.

Firstly, he discussed whether or not there is a role for patients with failed catheter-based pH monitoring. There has been a widespread misconception that if a patient could not tolerate catheter-based pH monitoring, they are hypersensitive and would not tolerate wireless monitoring. He countered this by presenting a study that looked at patient acceptance and the clinical impact of Bravo monitoring in patients with previous failed catheter-based studies[3]. During a five-year study period (2004–2008), 1,751 patients attempted a 24-hour catheter-based pH study. Of these, 185 patients were intolerant of the catheter-based study, with incomplete or no results obtained. One hundred and thirty-four patients then went on to receive wireless pH monitoring; 133 patients (99%) had a successful wireless pH monitoring study. The only patient who did not tolerate their wireless pH monitoring study had a hypercontractile (Jackhammer) oesophagus on oesophageal manometry. Thus, wireless pH monitoring should be considered for all patients who fail their initial catheter-based pH study in order to diagnose their reflux symptoms.

Secondly, he looked at the diagnostic yield of wireless pH monitoring in comparison with catheter-based studies and explored its additional diagnostic capabilities in patients with negative catheter-based pH studies. Wireless pH monitoring has a longer duration of recording, and patients are more able to perform activities of daily living. This may mean the study period is more representative of the patient's usual experience and may therefore have an increased diagnostic yield. To test this, 38 patients with a negative 24-hour catheter-based pH study were reinvestigated with 96-hour wireless pH monitoring[4]. Forty-seven per cent of these had a finding of pathological reflux. To confirm this wasn't a false positive, outcomes were assessed following anti-reflux surgery. Of the 12 patients, 10 (83%) had a good outcome at 24 months. Diagnostic yield was also assessed between wireless pH monitoring and 24-hour catheter-based pH impedance monitoring[5]. One hundred and eighty-one patients with negative 24-hour catheter-based pH impedance monitoring went on to have wireless pH monitoring. Of these, one-third of patients had a positive result (an increased yield of 30%).

The use of wireless pH monitoring forms part of the Lyon Classification. Its use was validated by looking at acid exposure time assessed by prolonged wireless pH monitoring in healthy controls and patients with erosive oesophagitis[6]. In 61 healthy controls, acid exposure time was assessed by average day and worst day during 24-, 48-, 72- and 96-hour study periods, with normal ranges defined using the 95th percentile (Figure 4). In a 96-hour study, a normal acid exposure time for the average day was <4.6%, whilst for the worst day it was <6.9%. In the patient cohort, 944 patients completed 96-hour wireless pH monitoring. There was a linear correlation between the grade of oesophagitis and the acid exposure time for the average day and worst day. Receiver operating characteristic (ROC) analysis found the cut-off acid exposure time for the average day was 4.3% and for the worst day was 6.9%, matching the normal ranges identified using the 95th percentile.

Study Duration	24 Hours (n = 61)	48 Hours (n = 60)	72 Hours (n = 53)	96 Hours (n = 39)
Average Day AET (%)	1.20 (0.01–6.15)	1.27 (0.10–5.04)	1.26 (0.07–4.94)	1.32 (0.10–4.65)
Worst Day AET (%)	1.20 (0.01–6.15)	2.20 (0.10–6.59)	2.50 (0.10–6.69)	2.60 (0.40–6.90)

Values are presented as median (5th–95th percentiles).

Table 1: *Reference intervals for oesophageal acid exposure time (AET) in healthy controls assessed using prolonged wireless pH monitoring*[6]

Overall, Dr Wong concluded that 96-hour wireless pH monitoring is more tolerable than catheter-based pH testing. It has a higher diagnostic yield than both pH-only and pH-impedance testing, and a higher diagnostic yield than shorter-duration wireless pH monitoring studies. It is also validated, with proven normal ranges, and included as part of the Lyon Consensus.

I found this presentation very interesting, and I will definitely promote the use of wireless pH monitoring for patients in my service who fail catheter-based testing. However, I do have concerns. Wireless pH monitoring can be compared with pH-only catheter-based monitoring, but it significantly lags behind impedance pH monitoring – the recommended modality of assessment by AGIP. Although it is more tolerable and offers a longer study duration, wireless pH monitoring only detects the presence of acid.

There is also the limitation that, with wireless pH monitoring, you are unable to assess the direction of flow. During catheter-based pH impedance analysis, I regularly find that I have to exclude acidic periods where it is clearly evident that the acid has been the result of a swallow, i.e. it has been consumed, but the patient has not recorded the meal period, highlighting that patient diaries are not completely accurate. Wireless pH testing would not be able to distinguish this, and thus swallowed acid may be included as part of the acid exposure time, ultimately increasing the likelihood of a positive result. This raises the question of the relevance of the increased diagnostic yield with wireless pH testing – how much of that is a false positive? Finally, without impedance data, the information obtained is limited. With no gaseous analysis, conditions including supragastric belching or aerophagia cannot be diagnosed. Ultimately, for patients able to tolerate it, I will continue to assess using catheter-based pH impedance monitoring.

References:

1. Katz PO, Dunbar KB, Schnoll-Sussman FH, *et al.* ACG Clinical Guideline for the Diagnosis and Management of Gastroesophageal Reflux Disease. *Am J Gastroenterol.* 2022;117(1):27–56.
2. Gyawali CP, Yadlapati R, Fass R, *et al.* Updates to the Modern Diagnosis of GERD: Lyon Consensus 2.0. *Gut.* 2024;73:361–371.
3. Sweis R, Fox M, Anggiansah R, *et al.* Patient Acceptance and Clinical Impact of Bravo Monitoring in Patients with Previous Failed Catheter-Based Studies. *Aliment Pharmacol Ther.* 2009 Mar 15;29(6):669–676.
4. Sweis R, Fox M, Anggiansah A, Wong T. Prolonged Wireless pH Studies Have a High Diagnostic Yield in Patients with Reflux Symptoms and Negative 24-h Catheter-Based pH Studies. *Neurogastroenterol Motil.* 2011 May;23(5):419–426.
5. Zeki SS, Miah I, Visaggi P, *et al.* Extended Wireless pH Monitoring Significantly Increases Gastroesophageal Reflux Disease Diagnoses in Patients with a Normal pH Impedance Study. *J Neurogastroenterol Motil.* 2023 Jul 30;29(3):335–342.
6. Rusu RI, Fox MR, Tucker E, *et al.* Validation of the Lyon Classification for GORD Diagnosis: Acid Exposure Time Assessed by Prolonged Wireless pH Monitoring in Healthy Controls and Patients with Erosive Oesophagitis. *Gut.* 2021 Dec;70(12):2230–2237.

Review: The Effects of Opioids on Oesophageal Motility

Kendra Hall, Clinical Scientist
Sandwell and West Birmingham Hospitals NHS Trust

John Hayman, Consultant Clinical Scientist at Sandwell and West Birmingham (SWB), presented an engaging talk exploring the effects of opioids on oesophageal motility.

John began by outlining the prevalence of opioid use in the UK. **Opioids** are widely prescribed, with older, more socially deprived patients in the north of England at greater risk of long-term opioid use. Three-quarters of opioid prescriptions for non-cancer pain in the UK are for musculoskeletal conditions (Jani *et al.*, 2025).

He went on to explain the proposed mechanism of their action. Myenteric neurons in the oesophagus release acetylcholine to cause muscle contraction and nitric oxide (NO) to trigger muscle relaxation. When opioid receptors on oesophageal myenteric neurons are bound by opioids, NO release is inhibited, leading to unopposed excitatory stimulation. Chronic opioid use (>3 months) may contribute to oesophageal symptoms such as dysphagia, gastro-oesophageal reflux and chest pain, and chronic opioid users with oesophageal symptoms are described as having opioid-induced oesophageal dysfunction (OIOD). Common manometric findings in OIOD patients include distal oesophageal spasm (49%), oesophagogastric junction outflow obstruction (OGJOO) (43%), Jackhammer oesophagus (24%), and type III achalasia (2%) (Murray *et al.* (2015), ACG). OIOD is more prevalent with stronger opioids and higher opioid doses.

John stated that, anecdotally, OIOD patients tend to report intermittent, non-progressive dysphagia (perhaps related to medication intake), differentiating it from true achalasia. If OIOD is suspected, HRM testing off opioids for at least 24 hours allows assessment of underlying disorders of OGJ outflow or peristalsis. This requires that we explicitly ask about opioid use, particularly in patients with musculoskeletal pain. However, it is important to be aware that patients may not disclose painkiller use, and as some are readily available, patients may not realise that they are taking opioids. At SWB, clinicians will also consider screening for suspected opioid use or to confirm cessation.

John used case studies from his practice to demonstrate OIOD. One patient undergoing HRM testing whilst on and off opioids demonstrates both the OIOD effect and how cessation of opioids (or weaning to the lowest possible dose of the weakest opioid) is an effective treatment (Fig. 1). There are limited data on opioid reversal agents.

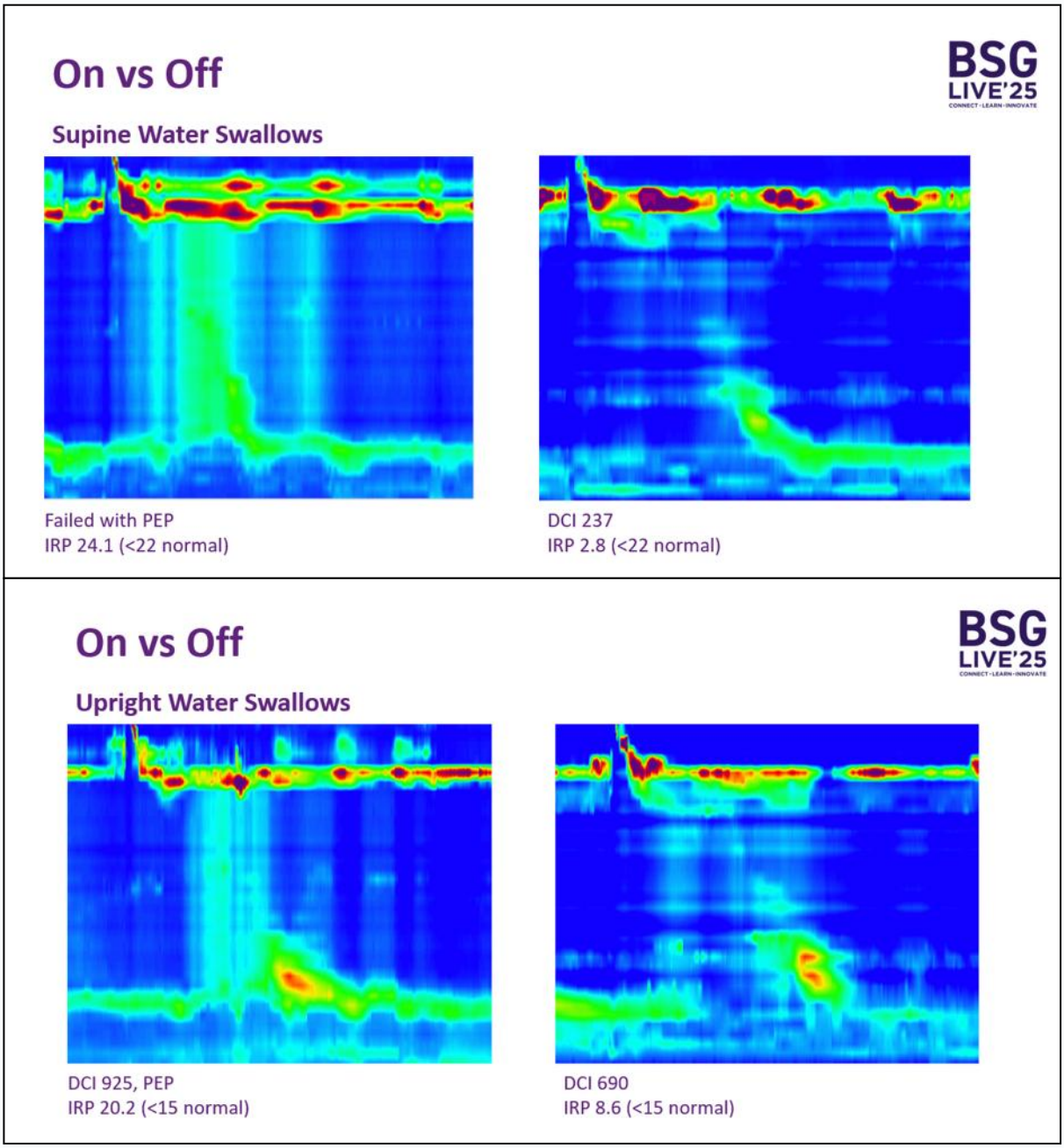


Fig. 1. *On vs off opioids. The same patient underwent HRM on opioids (left) and off opioids (right). Elevated IRP and pan-oesophageal pressurisation were observed with opioids compared to a normal study off opioids.*

John gave an example of an important caveat. A 55-year-old male was referred for HRM due to dysphagia and an OGD suggestive of achalasia. The referral did not state opioid use, but upon taking his history, it became apparent that he was awaiting a hip replacement, was in considerable pain, and was unable to stop his 60 mg daily dose of codeine. The onset of his dysphagia symptoms also coincided with him starting opioids. His HRM trace was consistent with type III achalasia but was discussed in an MDT as a possible OIOD. OIOD patients respond poorly to achalasia treatments, so in the absence of further red flags such as weight loss, it was agreed to reassess after hip surgery and opioid cessation. Three months after complete opioid withdrawal, he was still experiencing dysphagia, so underwent repeat HRM testing, which still demonstrated a type III achalasia pattern (Fig. 2). He went on to be referred for POEM.

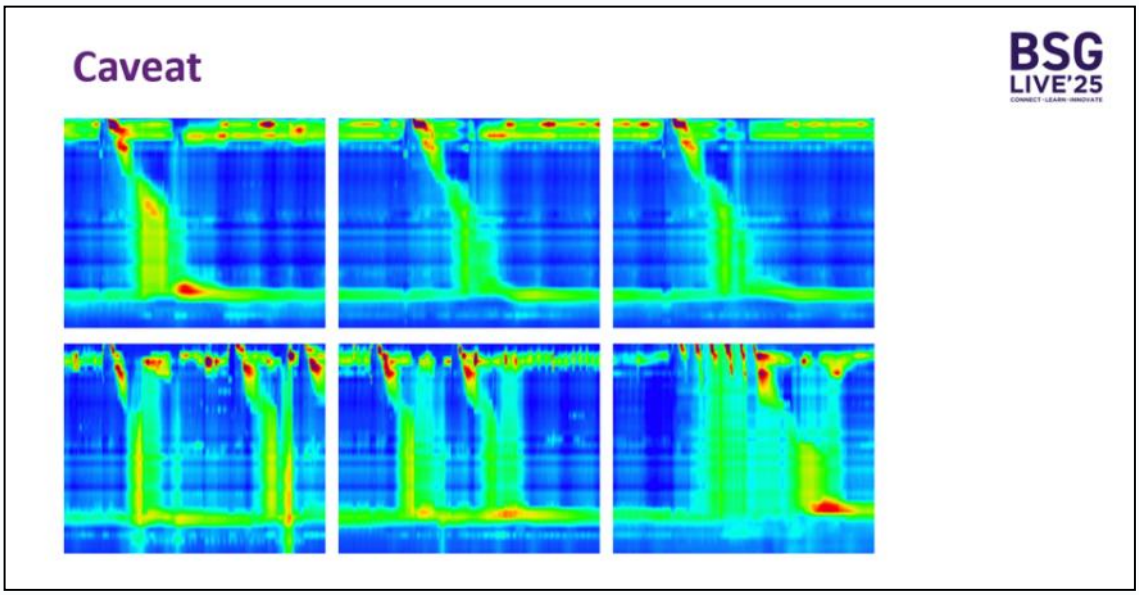


Fig. 2. *Caveat. Type III achalasia pattern of non-relaxing LOS and spastic contractions seen in the same patient both on opioids and off opioids.*

John's talk triggered lively debate in the room.

Dr Corsetti from Nottingham University Hospitals stressed that there is no clinical indication for long-term opioids in non-cancer pain, that there are many side effects, and that they increase mortality. A multidisciplinary collaboration is needed to reduce opioid burden.

Dr Sweis from UCL stated that he does not ask patients to stop opioids for HRM testing because it is difficult for patients to do so (or for healthcare practitioners to believe them), and it is not clear how long they need to be off opioids. By taking away the opioids for a couple of days but allowing the patient to go back to using them afterwards, we are not testing what they are there for—symptoms relating to OIOD. He reiterated the importance of stating "opioid-induced" in diagnoses to ensure patients do not undergo invasive treatment. Dr Corsetti agreed that it is difficult for patients to stop chronic opioid use, but not impossible, and she reiterated the importance of never performing irreversible treatment in an OIOD patient and being clear about opioid use in HRM reports.

Dr Sweis suggested, anecdotally, that it is not uncommon for those on long-term opioids to have somehow neuromodulated, and he therefore questioned whether John's caveat case was demonstrating an underlying type III achalasia or whether the type III pattern caused by opioid-induced changes to motility had persisted.

Another audience question concerned how opioid use affects acid exposure, and whether, by increasing LOS pressure, opioids would treat GORD or, by causing spastic dysmotility, impair acid clearance. John stated that research suggests chronic opioid users are actually at greater risk of reflux, as opioids slow gastric motility, and the consequent delayed gastric emptying increases the likelihood of gastro-oesophageal reflux.

I left the talk with a clear understanding of how crucial it is for us, as Clinical Scientists and physiologists, to recognise the links between opioid use and oesophageal dysfunction—especially given how commonly opioids are prescribed for certain patient groups. This highlights the importance of routinely and explicitly asking all patients about opioid use, as it often goes undisclosed. However, the caveat case study also reminded me that symptoms may not always be opioid-related and highlighted the importance of re-testing if things just do not seem right.

Get Involved

NewWave welcomes contributions from colleagues across the GI Physiology community, and we're always keen to showcase the excellent work taking place throughout the specialty. Whether you've been involved in an interesting project or case study, have attended a conference, introduced a new service, or simply have news you'd like to share, we'd be delighted to feature it in a future edition.

We'd love to hear about:

- Research and service evaluations
- Accepted abstracts and publications
- Interesting clinical work and service developments
- Quality improvement projects
- Conference and study day reviews
- Department updates and new appointments
- Job advertisements and vacancies
- Training opportunities and upcoming events
- Awards, achievements and retirements
- Outreach activities and patient engagement projects
- New equipment, technologies and innovations
- Opinion pieces and articles relevant to GI Physiology

Advertising

NewWave also welcomes advertisements from organisations wishing to promote products, services, courses, conferences or recruitment opportunities relevant to GI Physiology. Please get in touch to discuss the available advertising opportunities.

Get in Touch

If you'd like to contribute to a future issue, submit an article, advertise, or simply discuss an idea, please contact *Gemma Willis*, Publication Secretary, AGIP.

bsg BRITISH SOCIETY OF GASTROENTEROLOGY

AGIP