

# Comparison of graphical user interfaces for computer-aided detection of Barrett's neoplasia

## ***Citation for published version (APA):***

Jong, M. R., Jukema, J. B., Fockens, K. N., van Eijck van Heslinga, R. A. H., Kusters, K., Boers, T., Jaspers, T. J. M., van der Sommen, F., de With, P. H. N., de Groof, J., & Bergman, J. J. G. H. M. (2024). Comparison of graphical user interfaces for computer-aided detection of Barrett's neoplasia. *Endoscopy*, 56(suppl. 2), S238. Article MP230. <https://doi.org/10.1055/S-0044-1783240>

## ***DOI:***

[10.1055/S-0044-1783240](https://doi.org/10.1055/S-0044-1783240)

## ***Document status and date:***

Published: 01/04/2024

## ***Document Version:***

Publisher's PDF, also known as Version of Record (includes final page, issue and volume numbers)

## ***Please check the document version of this publication:***

- A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher's website.
- The final author version and the galley proof are versions of the publication after peer review.
- The final published version features the final layout of the paper including the volume, issue and page numbers.

[Link to publication](#)

## ***General rights***

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal.

If the publication is distributed under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license above, please follow below link for the End User Agreement:

[www.tue.nl/taverne](http://www.tue.nl/taverne)

## ***Take down policy***

If you believe that this document breaches copyright please contact us at:

[openaccess@tue.nl](mailto:openaccess@tue.nl)

providing details and we will investigate your claim.

some diseases. The aim of this study was to analyze the feasibility of this procedure and determine the complications in our center.

**Methods** The first endoscopy ultrasound (EUS)-guided gastroenteroanastomosis (EUS-GEA) as a treatment for gastric outlet obstruction (GOO) was performed in January 2020. We retrospectively reviewed all LAMS (Hot AXIOS) placed in our hospital from then until July 2023.

**Results** 16 GE-USE were performed in 15 patients (22.5 % of the LAMS placed in that period). 8 were male (53.3 %), mean age was 72.3 years. The indication in all was GOO, secondary to neoplasia, and one case for benign duodenal stenosis secondary to chronic pancreatitis. Technical success was achieved in 15 (93.7 %) and clinical success in 100 %. There were 2 immediate complications (12.5 %) related to LAMS release failure, one solved during the procedure, the other requiring the placement of a gastric OCTS-clip, and 12 days later the EUS-GEA could be performed without incident. In addition, 2 late complications were recorded: 1 due to lack of adequate expansion of the LAMS requiring endoscopic dilatation and 1 hemorrhage. After 6 months, 1 patient required hospitalization due to migration of the stent into the stomach, and a new EUS-GEA was performed. The mean time from EUS-GEA to death is 63 days. 5 patients remain alive with a follow-up of 215 days.

**Conclusions** EUS-GEA is a viable procedure, with adequate results and an acceptable rate of complications, which allows other more invasive approaches such as surgery to be avoided. This is accurately why its demand has increased in our center in recent years. [1–3]

**Conflicts of interest** Authors do not have any conflict of interest to disclose.

#### References

- [1] Havre RF, Dai C, Roug S et al. EUS-guided gastroenterostomy with a lumen apposing self-expandable metallic stent relieves gastric outlet obstruction – a Scandinavian case series. *Scand J Gastroenterol* 2021; 56: 972–977
- [2] McCarty TR, Garg R, Thompson CC et al. Efficacy and safety of EUS-guided gastroenterostomy for benign and malignant gastric outlet obstruction: a systematic review and meta-analysis. *Endosc Int Open* 2019; 7: E1474–E1482
- [3] Binda C, Marocchi G, Coluccio C et al. A case of cystic paraduodenal pancreatitis with gastric outlet obstruction: technical pitfalls in EUS-guided gastroenteroanastomosis. *VideoGIE* 2022; 21: 289–292

## MP229 Analysis of intragastric meal distribution during preoperative gastric emptying scintigraphy can predict long-term clinical response in patients with gastroparesis treated with gastric per oral endoscopic myotomy

**Authors** A. Debourdeau<sup>1</sup>, V. Vitton<sup>2</sup>, G. Sandra<sup>3</sup>, M. Barthet<sup>2</sup>, J. M. Gonzalez<sup>2</sup>

**Institutes** 1 University Hospital of Nîmes, Nîmes, France; 2 Hospital Nord, Marseille, France; 3 Hôpitaux Universitaires de Marseille – AP-HM, Rue Brochier, Marseille, France, Marseille, France

**DOI** 10.1055/s-0044-1783239

**Aims** Gastric emptying scintigraphy (GES) is the gold standard for the diagnosis of gastroparesis. However, data are lacking regarding the prognostic value of pre-operative intragastric meal distribution during GES, in patients undergoing gastric peroral endoscopic myotomy (GPOEM) for gastroparesis. This study investigated the association of GES morphologic parameters and the long-term clinical success of G-POEM.

**Methods** This retrospective study included patients who underwent G-POEM for refractory gastroparesis in a tertiary center with preoperative GES data. Intragastric meal distribution was measured using the proximal to distal count ratio (PDCR) at 0, 1, 2 and 4 hours (h), and the retention index (RI) was calculated. Clinical success was defined as a decrease of at least 50 % in the post-G-POEM Gastroparesis Cardinal Symptom Index (GCSI) total score.

**Results** In total, 77 patients were included with a mean follow-up of 40.14 months. Clinical success was observed in 54.55 % of patients. The RI was not associated with clinical success. Only PDCR at 0h (PDCR0) was associated with

clinical success. In univariate analysis, the median PDCR0 was 6.0 (IQR 5.59) in patients with clinical success and 4.29 (IQR 4.51) in patients with clinical failure ( $p = 0.019$ ). In multivariate analysis,  $PDCR0 > 5.25$  was associated with clinical success ( $HR = 4.36$  [1.55;12.26],  $p = 0.00524$ ).

**Conclusions** This study suggests that in patients with gastroparesis, High PDCR0 value (suggestive for a preferential fundic meal distribution) during preoperative GES is associated with long-term clinical response to G-POEM.

**Conflicts of interest** Authors do not have any conflict of interest to disclose.

## Endoscopic diagnosis and therapy in the esophagus

27/04/2024, 10:30 – 11:30

Science Arena: Stage 1

### MP230 Comparison of graphical user interfaces for computer-aided detection of Barrett's neoplasia

**Authors** M. Jong<sup>1</sup>, J. Jukema<sup>1</sup>, K. Fockens<sup>1</sup>, R. van Eijck van Heslinga<sup>2</sup>, C. Kusters<sup>3</sup>, T. Boers<sup>3</sup>, T. Jaspers<sup>3</sup>, F. Van Der Sommen<sup>3</sup>, P. De With<sup>3</sup>, J. De Groof<sup>1</sup>, J. Bergman<sup>2</sup>

**Institutes** 1 Amsterdam UMC, locatie VUmc, Amsterdam, Netherlands; 2 VU University Medical Center, Amsterdam, Netherlands; 3 Eindhoven University of Technology, Eindhoven, Netherlands

**DOI** 10.1055/s-0044-1783240

**Aims** Despite the surge of artificial intelligence applications in endoscopy, the interaction between the endoscopist and AI system remains an underexplored aspect. This endoscopist-AI interaction ultimately may have significant impact on the performance of the AI system in daily clinical practice. The aim of this study was to compare two graphical user interfaces for a computer aided detection (CAdE) system for Barrett's neoplasia.

**Methods** This study involved a comparative analysis between two distinct graphical user interface (GUI) designs for a computer-aided detection (CAdE) system: the traditional bounding box GUI and an alternative heatmap GUI. For this study, we utilized a well-established and rigorously evaluated CAdE system.

A group of 37 endoscopists from 6 countries assessed 70 Barrett's esophagus videos. All videos were analyzed by the CAdE system and comprised, at some point, a CAdE detection, regardless of the actual presence of neoplasia. The study had two phases. Initially, videos were shown with either a bounding box or heatmap. After a two-week wash-out period, the same videos were reordered and displayed with the alternate GUI. Endoscopists marked potential neoplastic lesions and biopsy sites and provided their personal GUI preference.

**Results** The study found no significant difference in classification performance between the bounding box and heatmap visualizations (sensitivity 83 % vs. 83 %,  $p = 0.29$ ; specificity 86 % vs 86 %,  $p = 0.09$ ). Localization accuracy also did not differ significantly between the two methods, both achieving a median score of 97 %. In total, 23 endoscopists favored the heatmap, while 14 preferred the bounding box.

**Conclusions** Although endoscopists expressed a preference for the heatmap GUI, this was not associated with a statistical difference in performance outcomes.

**Conflicts of interest** Authors do not have any conflict of interest to disclose.

### MP231V Fully covered stent associated to vacuum therapy (VACStent) as rescue treatment of refractory esophageal leak

**Authors** E. Santos Pérez<sup>1</sup>, B. Agudo<sup>1</sup>, C. Esteban Fernández-Zarza<sup>1</sup>, F. Pons Renedo<sup>1</sup>, D. De Frutos Rosa<sup>1</sup>, P.D.C.A. M. Martins<sup>1</sup>, M. González-Haba Ruiz<sup>1</sup>

**Institute** 1 Puerta de Hierro Majadahonda University Hospital, Majadahonda, Spain

**DOI** 10.1055/s-0044-1783241