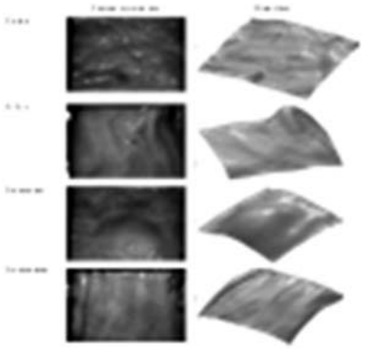

Abstract PTU-022 Figure 1

Innovations initiative has identified real time polyp diagnosis as one of the next major technology-driven changes in endoscopy.[1] A number of imaging techniques are presently being investigated in this area. The complex and demanding nature of the imaging environment, including issues relating to operation in a confined space, the presence of surface fluids and the highly reflective nature of the mucosa, renders 3D surfaccapture and analysis for the purpose of diagnosis an extremely challenging task. A novel Photometric Stereo (PS) imaging sensor has never been previously assessed for mucosal imaging. PS imaging requires the capture of the mucosal regions while illuminated using light from differing known directions and offers the potential for the recovery of high resolution 3D shape and topographic texture data. The captured PS images are then used to recover and analyse the 3D surface geometry.

Methods Using a porcine gut model, photometric images were captured using a six-light source PS setup. PS assumes diffuse reflectance from the illuminated surfaces. We use a least squares approximation approach to estimate the surface in the presence of the specular highlights. Several areas of the porcine gastrointestinal tract were scanned. For each area investigated six photometric images were captured. This data was then used to recover the depth information.

Results 3D reconstruction was obtained on all mucosal areas of the gastrointestinal tract that were studied (Figure 1). We observe that the recovered 3D surface retains the surface geometry in the captured areas and important structural information at a fine level of detail, even in the presence of numerous specular reflections. This is highly significant for automated processing and analysis of surface abnormalities.

Conclusion Using a novel sensor technology it was possible to obtain mucosal views and 3D surface reconstruction on all areas of the gastrointestinal tract using a porcine model. 3D geometric representations of the mucosal views were obtained, raising the possibility of automated computer analysis of endoscopic images. This novel technique needs to be explored further in human studies.

REFERENCE

1 Rex *et al*. *Gastrointest Endosc* 2011;73:419–22

Disclosure of Interest None Declared.

PTU-023 SEDATION IN THE ENDOSCOPY DEPARTMENT – DO WE NEED MORE TRAINING?

[1]A Mohanaruban*, [2]K Bryce, [3]A Radhakrishnan, [4]J Gallaher, [1]P Trembling, [5]G Johnson. *[1]Gastroenterology, Royal London Hospital, London, UK; [2]North Middlesex University Hospital, London, UK; [3]Anaesthetics, Hammersmith Hospital, London, UK; [4]Royal London Hospital, London, UK; [5]Gastroenterology, University College Hospital, London, UK*

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Introduction The 2004 report of the National Confidential Enquiry into Patient Outcome and Death (NCEPOD) highlighted that only 35% of endoscopists surveyed were known to have attended courses on safe sedation. The report recommended that all those responsible for the administration of sedation in the endoscopy department should receive formal training and clear protocols for the administration of sedation should be made available and implemented.

Methods We undertook a paper survey of 40 gastroenterology trainees across 5 UK Deaneries during December 2013 to determine current practices of sedation and training in endoscopy as well as level of knowledge of the sedation agents.

Results All 40 of the trainees surveyed responded. 21 (53%) had received formal training in sedation for endoscopy with the most common setting for training being at local trust induction. 35 (88%) would value an introductory course in sedation as part of local trust induction.

Only 14 (35%) were aware of a sedation protocol in their department. 27 (68%) reported Fentanyl as the commonest first-line opioid used, although it was rarely administered in upper GI endoscopy. 28 (70%) trainees performed the majority of their upper GI endoscopies 'unsedated' with throat-spray only. These findings were similar in both sedation-trained and non-trained cohorts. For colonoscopy, 18 (90%) of those who had received formal training in sedation would administer an opioid first, before Midazolam, whereas 13 (72%) trainees without sedation training would use this sequence.

28 (70%) trainees stated correctly the maximum doses for Midazolam and Fentanyl as recommended by BSG guidelines, and were appropriately cautious about the initial dose of Midazolam administered to an elderly patient. 14(74%) of the trained cohort correctly said that Fentanyl takes 1–2 min to act, compared to 7 (39%) in the untrained cohort. All trainees surveyed knew the reversal agents for Midazolam and Fentanyl.

Conclusion 47% of trainees did not receive structured training in safe sedation, despite national guidelines advising this to be an essential part of the training program. The majority of trainees would value sedation training. We also identified some gaps in trainees' knowledge of the action of sedation agents. We propose that a formal training session in sedation or an e-learning module could be incorporated as part of a deanery or trust induction for gastroenterology and regularly reviewed thereafter.

REFERENCES

1 NCEPOD 2004: Scoping our practice
2 BSG 2003: Guidelines on safety and sedation during endoscopic procedures

Disclosure of Interest None Declared.

PTU-024 NON-RADICAL, STEPWISE ENDOSCOPIC ABLATION OF BARRETT'S EPITHELIUM IN SHORT SEGMENT BARRETT'S OESOPHAGUS HAS LOW STRICTURE RATE

[1]A Koutsoumpas, [2]LM Wang, [1]AA Bailey, [3]R Marshall, [3]B Sgromo, [3]N Maynard, [1]B Braden*. *[1]Gastroenterology, Oxford University Hospitals, Oxford, UK; [2]Pathology, Oxford University Hospitals, Oxford, UK; [3]Surgery, Oxford University Hospitals, Oxford, UK*

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Introduction Radical endoscopic ablation of Barrett's epithelium performing 4–6 endoscopic resections during the same