Introduction Defecating scintigraphic proctograms (DSPs) have an established position in the investigation of evacuatory problems and ano-rectal symptoms. Functional radionuclide imaging allows for both the assessment of rectoceles and correlation with evacuatory function.

Methods 151 consecutive DSPs carried out over a 3-year period were reviewed. Clinical details of presenting symptoms were reviewed with the study results. All studies were reviewed for evidence of anatomical abnormalities and function via % excretion. The % excretion was analysed in those with and without a rectocele and compared with symptoms (constipation, incontinence, rectal pain and evacuatory difficulty). The mean % excretion for each symptom (present/absent) was calculated and compared with a t test.

Results Of the 151 patients, 23 were unable to defecate and no results were available. There were 8 males, 143 females. Mean age range 55 +/- 14. 76% had a rectocele demonstrated. In all patients % excretion was significantly different in those with symptomatic evacuatory difficulty (% excretion: Constipation present/absent 63% v 62.6% p = 0.9, Incontinence present/absent 60.9% v 63.4% p = 0.46, Pain present/absent 67.2% v 62.1%, p = 0.24, Evacuatory difficulty present/absent 60.2% v 66.3% p = 0.03). Of those with a rectocele there was a non-significant trend to abnormality on excretory function (% excretion: Constipation present/absent 62.8% v 61.8% p = 0.8, Incontinence present/absent 60.9% v 62.6% p = 0.6, Pain present/absent 66.6% v 61.5%, p = 0.33, Evacuatory difficulty present/absent 59.7% v 65.9% p = 0.06). On those without a rectocele, there was no difference in excretory function in any symptom groups.

Conclusion In this large series DSPs identified rectoceles in 76% of studies. In those with a rectocele functional impairment was often present, with a trend to reduced % excretion seen. In those without a rectocele % excretion on DSPs did not differ in any symptom group. Larger reviews are needed to identify small sub-groups who may benefit from this study. The significant number with abnormalities found on DSPs suggests that this investigation may be underutilised in those with ano-rectal symptoms.

Disclosure of Interest None Declared.

PTH-017 STRATEGY FOR COLORECTAL CANCER (CRC) SCREENING IN INDIVIDUALS WITH SIGNIFICANT CO-MORBID CONDITIONS

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Introduction With the advent of the Bowel cancer screening programme (BCSP) in the UK participants who have positive FOB tests are generally offered optical colonoscopy (OC) if considered safe, for early detection and prevention of CRC. In our study we undertook Computed Tomographic Colonography (CTC) in our hospital as the investigation of choice in those FOBt positive individuals with an American Society of Anesthesiology (ASA)grade > = 3 and analysed outcomes.

Methods Cases were prospectively discussed with screening practitioners carrying out assessments prior to OC and on the basis of hospital records and liaison with primary care physicians were assigned to CTC/OC with majority proceeding to OC as per standard practise. Patient data was accessed from our database in radiology, endoscopy and histology retrospectively and ASA grade assigned on the basis of the above information.44/69 cases that were referred for CTC from the BCSP between Feb 2009 and Nov 2011, were considered to have an ASA > = 3.CTC results were analysed and correlated with endoscopic and histological findings.

Results Out of 44 cases (17 female,27 male, mean age 65.4) with positive FOBt referred for CTC in the BCSP,50%(22) of patients had positive findings i.e.18 polyps and 4 suspected CRC.3/44 cases had a normal Flexible Sigmoidoscopy (FS) before CTC. Hence 41 of the above were considered to have had a primary CTC.44% (18/41) of patients referred for primary CTC had an endoscopy (20% OC,24% FS), of which 61% had a polypectomy.41 primary CTCs detected 32 polyps in 18 cases and 4 cancers.18 cases (4 diminutive polyps on CTC not requiring OC/FS) underwent endoscopy as a result of the above (OC 8, FS 10) detecting 36 polyps (35 removed) in 11 patients.86% of polyps were detected on the left side and the majority of this (83%) were histologically confirmed to be adenomas. In addition to this 2 left sided cancers was confirmed endoscopically.

Conclusion In this small cohort CTC seems comparable to colonoscopy for detection of polyps and cancers[1].In the patient group selected almost 44% of cases thought to have significant comorbidity who had primary CTC ended up having a lower GI endoscopy along with a need for therapy. It is also noted that the majority of significant polyps and all cancers were located in the left colon. We suggest that in this group a larger study evaluating a combination of CTC with FS (with no or minimal sedation) would be most appropriate in the context of the BCSP. It may also be useful to have evidence based criteria on fitness for colonoscopy in order to inform individuals and programmes on the appropriateness of screening in the context of comorbidity and the risk to benefit ratio.

Disclosure of Interest None Declared.

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PTH-018 TOWARDS NOVEL NON INVASIVE METHODS TO DIAGNOSE COLORECTAL CANCER USING AN ELECTRONIC NOSES (E-NOSE) AND FIELD ASYMMETRIC ION MOBILITY SPECTROMETRY (FAIMS)

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Introduction Using an electronic nose (E-nose) we have previously demonstrated its ability to detect inflammatory bowel disease (IBD) by shifts in the patterns of volatile organic compounds (VOCs) in the gases and vapours that emanate from urine samples. A similar distinction could be made using FAIMS, which involves a different principle, but still with gas phase samples. Here, we have extended our work to detect colon cancer from odours from urine alone.

Methods Technology Principles: The E-nose uses an array of gas phase chemical sensors which are broadly tuned to different chemical groups (e.g. alcohols, gases). When a sample is presented to the sensor array, as each sensor is different, it will produce a unique response to that sample. By taking all of the sensor responses together, we can create a 'bio-odorant fingerprint' of that sample; thus mimicking the human olfactory system. FAIMS operates on similar principles, but produces its fingerprint by measuring the differences in mobility of ionised chemicals in high electric fields. 47 subjects were recruited; 20 with colonic adenocarcinoma (CRC) and 27 controls. The latter comprised 20 with ulcerative colitis (UC) in remission (defined as SCAI score < 4) and 7 healthy subjects. 10 ml urine aliquots were collected and stored frozen. For assay, the containers were first heated to 60 ± 0.1oC. The headspace (the air above the sample) was analysed by an AlphaMOS FOX 4000 E-nose and by an Owlstone Lonestar FAIMS instrument. Discriminant Function Analysis and Fisher Discriminant Analysis were used for statistical evaluation, respectively.

Results The E-nose (Figure 1) and FAIMS plots (not shown) shows those with CRC are tightly grouped and distinct from healthy controls and those with UC ($p < 0.001$).