

ORAL PRESENTATION 1C

COLORECTAL SURGERY

O39 VARIATION IN REPORTING OF POST-OPERATIVE BOWEL DYSFUNCTION FOLLOWING RECTAL CANCER SURGERY: CROSS-SECTIONAL REVIEW

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Introduction: Low anterior resection syndrome (LARS) is characterised by defaecatory dysfunction after sphincter-preserving surgery and impacts on postoperative quality of life (QoL). There is currently no widely used core outcome measure for LARS. The purpose of this study was to assess variation in reporting of postoperative bowel dysfunction.

Method: A systematic, cross-sectional review of MEDLINE, EMBASE, Cochrane Library and Clinicaltrials.gov was performed from 2004 to 2015 by two independent investigators. Data were extracted from all studies reporting bowel dysfunction after sphincter-preserving surgery. A recently validated outcome set was used to score manuscripts, using criteria: stool incontinence; flatus incontinence; urgency; frequency and stool clustering. Binary logistic regression explored variables associated with better reporting ($P < 0.05$ indicating significance).

Result: Of 5428 studies initially identified, 238 met the inclusion criteria. Widely reported components of bowel dysfunction were incontinence to stool (229/238; 96.2%), frequency (176/238; 73.9%) and incontinence to flatus (158/238; 66.4%). Urgency and stool clustering were reported less commonly (106/238; 44.5% and 59/238; 24.8% respectively). Dysfunction measured as a primary outcome was associated with greater completeness of reporting (OR: 3.49; 95% CI: 1.99–6.23; $P < 0.001$). Of the total dysfunction-related outcomes reported across all studies, 66.5% of outcome measures were formally defined (484/728).

Conclusion: Considerable heterogeneity exists in the reporting of postoperative bowel dysfunction and only two thirds of reported outcomes are formally defined. These deficits preclude reliable estimates and robust meta-analysis across studies. An outcome set for postoperative bowel dysfunction has recently been validated and should be endorsed by authors and editors.

Take-home message:

Current variation in reporting of post-operative dysfunction is unhelpful, and precludes reliable estimates and meta-analysis.

O40 THE REPEATABILITY OF RECTOCOELE MEASUREMENT USING TRANSPERINEAL ULTRASOUND AND DEFAECATION PROCTOGRAPHY

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Introduction: A rectocele is the herniation of the rectal wall which may cause obstructive defaecation. The deeper the rectocele pocket the higher the likelihood of symptoms. Conventional imaging includes defaecation proctography. Transperineal ultrasound is a new imaging tool. The aim was to determine inter- and intra- rater reliability of rectocele measurement on proctography and transperineal ultrasound and correlate the two.

Method: The dynamic images of 66 women undergoing transperineal ultrasound and proctography between May and September 2014 were retrospectively and independently reviewed by clinicians blinded to symptoms and corresponding imaging. Images were re-reviewed one month later. Rectocele depth on ultrasound was measured from the perineal body. Depth on proctography was from the expected projected anterior anal canal wall.

Result: Mean rectocele measurement on proctography was 2.1 cm (median 2, range 0 – 7) and 1.7 cm on transperineal ultrasound (median 1.5, range 0 – 4). There was good inter- and intra- rater repeatability for the rectocele measurement on proctography (intra class correlation coefficient 0.84 and 0.71 respectively) and transperineal ultrasound (intra class correlation coefficient 0.78 and 0.9 respectively). There was moderate correlation between the measurements on transperineal ultrasound and proctography (intra-class correlation coefficient 0.46). Rectocele measurement was 1.25cm larger on proctography.

Conclusion: Transperineal ultrasound and proctography are reliable methods for measuring rectocele. Rectocele appears larger on proctography. Given that a rectocele less than 2cm in depth on proctography is regarded as normal, a rectocele less than 1cm in depth on transperineal ultrasound should also be considered normal.

Take-home message:

Transperineal ultrasound and proctography are reliable methods for measuring rectocele. Rectocele appears larger on proctography. Given that a rectocele less than 2cm in depth on proctography is regarded as normal, a rectocele less than 1cm in depth on transperineal ultrasound should also be considered normal.

O41 THE EFFECTS OF EXERCISE PRECONDITIONING ON PATIENTS SCHEDULED FOR ELECTIVE COLORECTAL SURGERY: A RANDOMISED CONTROLLED PILOT STUDY

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Introduction: The implementation of ERAS (enhancing recovery after surgery) protocols has advanced modern perioperative care. We aimed to further the concept of ERAS by investigating the benefits of a short supervised exercise programme (PREHAB) prior to major colorectal surgery.

Method: Twenty-three colorectal patients (Control: n=11; PREHAB: n=10; Withdrawn: n=2) were recruited to a single centre randomised controlled trial (NRES reference: 13/YH/0322) examining the effects of PREHAB on pre-operative functional capacity (as measured by the 6 minute walk test - 6MWT) and antioxidant status (total glutathione and hsp27) as well as post-operative length of hospital stay (LOS).

Result: Median 6MWT distance improved significantly (Baseline: 399 [IQR: 94] metres; Pre-op: 501 [133] metres; $p < 0.01$) in the PREHAB group but not in the control (Baseline: 390 [184] metres; Pre-op: 400 [179] metres; $p = 0.95$). There was however no significant difference in median LOS between groups (Control: 8 days, [Range 6-27]; PREHAB: 10 days, [Range 5-12]; $p = 0.65$). No significant changes in total glutathione were observed between baseline and pre-operative reassessment. However hsp27 levels were significantly reduced following PREHAB (Baseline: 82.0 [152] ng/ml; Pre-op: 62.4 [44.8] ng/ml; $p < 0.05$). This was not replicated in the control group (Baseline: 68.7 [94.9] ng/ml; Pre-op: 82.7 [146.7] ng/ml; $p = 0.26$).

Conclusion: As little as 2 weeks PREHAB appears to improve functional capacity in patients awaiting colorectal surgery although the benefits in terms of reducing LOS are unclear. The relevance of the reduction in hsp27 expression following PREHAB requires further investigation.

Take-home message:

The improvement demonstrated in patient functional capacity following PREHAB suggests further research into the use of exercise as a means of preparing patients for elective colorectal surgery is warranted.

O42 CAN SERUM C-REACTIVE PROTEIN BE USED TO PREDICT ANASTOMOTIC LEAK IN THE FIRST WEEK AFTER ANTERIOR RESECTION FOR RECTAL CANCER?

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Introduction: Anastomotic leak following anterior resection is a major complication with early diagnosis paramount in reducing its clinical consequences. Previous studies have identified CRP as a predictor of infective complications and anastomotic leak after colorectal surgery. The current study examined the ability of CRP to predict anastomotic leakage in the first week after anterior resection in a group of pure rectal cancer patients.

Method: Patients who underwent anterior resection for rectal cancer and had post-operative CRP assessed in a tertiary referral centre were identified from a prospective database. The primary outcome measure was the area under the curve at receiver operating characteristic (ROC) curve analysis of CRP in relation to anastomotic leak.

Result: A cohort of 211 patients was identified. Clinical anastomotic leakage occurred in 15 (7.1%). The mean age at surgery was 64.3 years, 71.1% were male, 48.8% received neoadjuvant radiotherapy and 67.3% had a defunctioning ileostomy. The optimal diagnostic accuracy of CRP for clinical anastomotic leak was on post-operative day 5 with an area under the ROC curve of 0.75, a cut-off value of 132 mg/l, sensitivity of 70.0% and specificity of 76.6% corresponding to a negative predictive value of 97.5% but a low positive predictive value (16.3%). After multivariate analysis the only factor that predicted anastomotic leak with statistical significance was a CRP >132mg/l on postoperative day 5 ($p=0.004$).

Conclusion: Post-operative CRP has a good negative predictive value and may be used alongside other criteria to facilitate a safe and early discharge for the patient.

Take-home message:

A CRP of <132mg/l on postoperative day 5 means the patient is at low risk of having an anastomotic leak and can be safely discharged presuming all other parameters are normal.

O43 FUNCTIONAL RECOVERY TAKES 4 TIMES AS LONG AFTER OPEN RESECTION FOR COLON CANCER COMPARED TO LAPAROSCOPIC RESECTION.

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Introduction: Knowledge regarding functional recovery after colon cancer surgery (CCS) is lacking. Loss of lean muscle and strength compromises function. We investigated skeletal muscle modulation and functional recovery after potentially curative CCS, comparing open (OS) and laparoscopic (LS) surgery.

Method: In a single centre prospective longitudinal observational study participants were assessed at baseline and for 6 months after CCS. Assessments included granulocyte lymphocyte ratio (GLR); muscle architecture (pennation angle (PA), muscle thickness (MT)), functionality (hand grip strength (HGS), pain score (PS), Dukes activity status index (DASI)) and health status (EQ5d5L).

Result: Fifty-three patients (OS n=27; LS n=26) were recruited during 2013-14 (no differences between groups regarding age, sex, BMI, tumour stage, blood loss). LS took longer (182.5 v 142.1mins), but had fewer complications, shorter length of stay (3 v 5 days) and lower PS at 2, 4 and 6 weeks (all comparisons $p < 0.05$). Postoperative decreases in HGS were greatest at day 3 and after OS (OS 24% v LS 15%, $p < 0.05$) with the difference maintained at 6 weeks ($p < 0.05$). GLR peaked day 1 with no difference between groups at any time-point. MT and PA decreased more after OS v LS (8% v 1%, $p < 0.05$; 6% v 1%, $p < 0.05$ respectively). OS EQ5d5L and DASI scores were lower at 2, 4, 6 weeks and 6 months compared to baseline and LS ($p < 0.05$).

Conclusion: Functional recovery after open CCS may take 6 months. Patients should be aware of this and efforts directed at minimising time to functional recovery.

Take-home message:

Patients with colon cancer suffer significant functional impairment after potentially curative surgery. Patients should be aware of this and efforts directed at minimising time to functional recovery.

O44 INTER-OBSERVER AGREEMENT OF RADIOLOGISTS ASSESSING THE RESPONSE OF RECTAL CANCERS AFTER CHEMORADIATION THERAPY ACCORDING TO MRI TUMOUR REGRESSION GRADING (MRTRG).

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Introduction: Assessment of rectal cancer after chemoradiation therapy (CRT) according to MRI tumour regression (mrTRG) can effectively differentiate between good and intermediate/poor responders. This study examines the inter-observer agreement of mrTRG, between 35 radiologists and a central reviewer.

Method: Two MRI rectum staging workshops for radiologists included assessing a range of mrTRGs on 12 patient scans.

Result: Kappa agreement ranged from 0.38-0.82 with a median value of 0.57 (95% CI: 0.37-0.77) indicating an overall good agreement. Eight (26%) radiologists had very good/near perfect agreement ($\kappa > 0.8$). Six (19%) radiologists had good agreement ($0.8 \geq \kappa > 0.6$) and a further 12 (39%) had moderate agreement ($0.6 \geq \kappa > 0.4$). Five (16%) radiologists had a fair agreement ($0.4 \geq \kappa > 0.2$). There was a tendency towards good agreement (skewness -0.92). In 65.9% of cases the radiologists were able to highlight correctly good responders identified by the study standard. In 90.0% of cases the radiologists correctly highlighted intermediate/poor responders identified by the study standard.

Conclusion: The assessment of rectal cancer response to chemoradiation therapy may be performed effectively using mrTRG. The mrTRG scale can be effectively taught to radiologists delivering good overall agreement levels with the gold standard central reviewer and good differentiation between good and intermediate/poor responders. The results in this study were achieved with very minimal training. Focus should be on facilitating the identification of good responders. It is predicted that with more intensive interactive case based learning a $\kappa > 0.8$ is likely to be achieved. Testing and retesting is recommended.

Take-home message:

MRI assessment of rectal cancer regression after chemoradiotherapy can be effectively taught and may be effectively utilised in other centres. This will assist in future MDT decision making.

O45 A PILOT STUDY TO COMPARE CARBON DIOXIDE AND A POLYETHYLENE GLYCOL SOLUTION AS METHODS OF DISTENDING THE COLON FOR CLINICAL INVESTIGATION

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Introduction: The use of warm water infusion has shown some potential to increase tolerance for colonoscopy and reduce the need for sedation. Aim: compare tolerance of the two distension methods, assess the distension achieved and demonstrate the safe use of Klean Prep (KP) administered rectally.

Method: 21 healthy individuals aged 18-30 were administered the two methods of distension. Half received one CO₂ first followed by warmed KP or the reverse. The order was randomly assigned. They were given Buscopan and had an MRI of the colon positioned supine and then left lateral. Venous blood was sampled before and after the fluid infusion. A Visual Analogue Scale (VAS) was used to assess preference and degree of discomfort. Ethical approval was sought as appropriate.

Result: Overall there was no difference in discomfort scores between the two methods. There was a significant difference in preference between the genders, males preferring CO₂ and females KP ($p = 0.008$). Serum electrolytes and plasma osmolarity were unaffected by the use of KP. Segmental distension scores from the MR images showed KP achieving better distension when supine in all segments except the sigmoid and when left lateral in the Descending, Transverse and Ascending segments ($p < 0.05$ for all).

Conclusion: Warm water infusion appears to be as well tolerated as CO₂. It appears to distend the colon better than CO₂ for radiological examination and potentially for colonoscopy. It should be

considered a viable and safe option for colon distension and merits further investigation with an older patient group.

Take-home message:

Warm water infusion has the potential to improve the tolerance for clinical investigation of the colon and may even be the better method of distension for both endoscopic and radiological examination.

O46 DEFINING A 3D BIO-MIMETIC COLORECTAL TUMOUROID

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Introduction: Colorectal cancer (CRC) is a worldwide healthcare problem. Better understanding of pathogenesis and relevant models to study drug action could improve therapies. There has been an increase in 3D in-vitro models with cellular complexity, however most lack tissue density. We aimed to create and characterize a 3D in-vitro cancer model (tumouroid), comprising cancer and stromal cells in a dense matrix.

Method: CRC cells (HT29) and patient fibroblasts (CRC-associated fibroblasts-CRF; normal colon fibroblasts-CF) were used. High density compressed tumouroids (9.6%, collagen 3D-cultures) were manufactured by mixing different ratios of HT29:fibroblasts. The following were measured: cell viability (AlamarBlue) for establishing seeding density and optimal HT29:fibroblast ratio; size measurements of cancer spheroids; biomarker (TGF β , VEGF) expression (ELISA); cell/spheroid morphology (cytokeratin-20, e-cadherin, vimentin, α -SMA immunofluorescence).

Result: Maximum seeding density for 7-day proliferation was 75,000 cells/(1,3ml)gel. Tumouroids with HT29:CF/CRF ratio(1:2) had significantly increased ($p < 0.05$) metabolic activity (day3). Cells aggregated in spheroids (epithelial) or distributed throughout (fibroblasts). Co-culture spheroid diameter (31.67 ± 5.36) and surface area (1495.2 ± 726.2) was significantly ($p < 0.05$) higher than HT29 monocultures (25.9 ± 4.1 ; 1564.8 ± 606). VEGF release (260-360pg/ml) was unaffected by co-culture with CRFs/CFs. Prior to HT29 co-culture, fibroblasts did not have a myofibroblast phenotype or release TGF β . In co-culture tumouroids, TGF- β release (100pg/ml; day3) was consistent with fibroblast-myofibroblast transformation. HT29 stained for cytokeratin-20 and e-cadherin (epithelial phenotype); fibroblasts stained for vimentin (mesenchymal phenotype). By day7, the majority of cells within tumouroids were vimentin-positive which implies characteristics of a mesenchymal transition/phenotype.

Conclusion: High density tumouroids provide a biomimetic platform that resembles the tumor microenvironment, suitable for assessing tumor growth and potentially therapeutic responses.

Take-home message:

High density tumouroids can be used as biomimetic models for colorectal cancer providing a better understanding of the CRC pathogenesis and tumor microenvironment. They can be used as suitable platforms for testing therapeutic responses.

O47 MRI ASSESSMENT OF INTRALUMINAL AND EXTRAMURAL REGRESSION AFTER CHEMORADIATION THERAPY

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Introduction: Regression of rectal cancer after neoadjuvant chemoradiotherapy (CRT) improves outcomes, however intratumour variation in response has not been examined in detail. This is despite having significant clinical implications such as radiotherapy planning and surgical excision. The purpose of this article is to look at the regression of the intraluminal component of rectal tumours and compare it with the extramural part. Our primary aim is to test the assumption that intraluminal and extramural regression is the same.

Method: All adult patients with rectal cancer patients staged T1-T4, between 2011 and 2014 who underwent long-course chemoradiation therapy (CRT) as part of their cancer treatment protocol were included. Baseline and post treatment scans were reviewed.

Result: There were a total of 134 cases. Thirty one cases (23%) showed that the intraluminal and extramural tumour regression was almost the same (± 0.1 mm). The mean proportionate reduction of the intraluminal part of the tumour was 0.51, (sd=0.31, range = -0.17 to 1.00). The mean proportionate reduction of the extramural part of the tumour was 0.36, (sd=0.56, range = -2.50 to 1.00). The mean difference in proportionate reduction was statistically significant (0.158; sd=0.53, range=0.067 to 0.248, $t=3.429$, $df=133$).

Conclusion: The assessment of rectal cancer response to chemoradiation therapy using MRI is an effective way to examine component regression of rectal cancers. The intraluminal component of tumour regresses more than the extramural part. This raises important clinical questions especially in relation to radiotherapy dose variation, local surgical planning and regression grading.

Take-home message:

The intraluminal component of rectal tumour regresses more than the extramural part. This raises important clinical questions especially in relation to radiotherapy dose variation, local surgical planning and regression grading.

048 A STUDY TO LOOK AT HOW PATIENT POSITIONING DURING LAPAROSCOPIC SURGERY AFFECTS INTRA-OCULAR PRESSURE (IOP)

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Introduction: The incidence of perioperative visual loss following colorectal surgery is quoted as 1.24 per 10,000 in USA. This is thought to be due to raised IOP during extreme head-down positioning leading to reduced optic nerve head perfusion. Aim: To assess the effect of head-down tilt on IOP during laparoscopic colorectal surgery.

Method: Right-sided resections generally spend less time in the head-down position compared to left-sided and sub-total resections. Therefore, Group 1 included right-sided resections and Group 2 left-sided and sub-total resections. Baseline IOP measurements using a Tonopen® XL applanation tonometer were carried out, and then every hour during surgery and each time when the operating table was tilted.

Result: Group 1 (n=14) had a mean age of 63.5 years (SD 14.35) and Group 2 (n=16) 62.3 years (SD 17.68), ($p>0.05$). The average length of surgery for Group 1 was 147 minutes (SD 0.73) and Group 2 was 247 minutes (SD 1.63) with $P=0.001$. The median IOP rise from baseline during surgery was 10.5mmHg (IQR=4.5) in Group 1 and 18mmHg (IQR=4.4) in Group 2 ($p\leq 0.05$). The median maximum degree of head down tilt during surgery in Group 1 was 9.3degrees (IQR=7.2) and Group 2 was 18.3degrees (IQR=8.4), ($p\leq 0.05$).

Conclusion: A rise in IOP occurs during laparoscopic colorectal surgery and appears to be more pronounced in those with a greater degree of head-down tilt for a prolonged time. This may have important implications for those patients undergoing prolonged surgery or those with a history of glaucoma.

Take-home message:

A rise in IOP occurs during laparoscopic colorectal surgery and appears to be more pronounced in those with a greater degree of head-down tilt for a prolonged time. This may have important implications for those patients undergoing prolonged surgery or those with a history of glaucoma.

049 CHANGING PATTERNS IN ADMISSION AND SHORT TERM MORTALITY IN ENGLISH COLORECTAL CANCER PATIENTS 1998-2010

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Introduction: England is regarded as having comparatively poor outcomes for colorectal cancer. Contributing factors have been reported as high rates of emergency admissions, large numbers of elderly patients with multiple co-morbidities and comparatively poor rates of major resection.

Method: Data on all individuals aged 14 and over diagnosed with colorectal cancer (ICD10 C18-20) were extracted from the NCDR for the period January 1st 1998 to December 31st 2010. Information on age, sex, patient characteristics, patient management and date of death was retrieved. Trends over time were compared by dividing the population into two time periods (1998-2001, 2008-2010) and statistical differences evaluated using Chi2. Mode of admission for each individual was noted (elective/ emergency) along with length of stay, laparoscopic or open procedure and 30-day mortality.

Result: The percentage of patients admitted as an emergency fell from 32.6% (1998) to 25.3% (2010) ($p<0.001$), yet those suitable for major resection (all patients) fell from 52.6% (1998-2001) to 49.6% (2008-10, $p<0.001$). Post-operative 30-day mortality (major resection, all patients) fell from 7.4% (1998-2001) to 4.6% (2008-10), with median length of stay falling from 11 days (IQR 7, 1998-2001) to 7 days (IQR 8, 2008-10). Laparoscopic surgery was associated with a shorter length of stay compared to open resection.

Conclusion: Rates of elective admission and short term mortality appear to be improving in English colorectal cancer patients. Those undergoing major resection appear to stay in hospital for a shorter period but the proportion of patients suitable for major resection has failed to improve. Abbreviations: NCDR- National Cancer Data Repository

Take-home message:

Rates of elective admission and early mortality in the English NHS for colorectal cancer are improving but the proportion of those suitable for major resection has not improved in recent years and remains a significant hurdle to better colorectal cancer outcomes in England.

050 CORRELATION BETWEEN MRI DETECTED EXTRA-MURAL VASCULAR INVASION (MREMI) IN RECTAL CANCER AND METASTATIC DISEASE: A META-ANALYSIS

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Introduction: Extramural vascular invasion (EMVI) is an independent prognostic factor in rectal cancer. Whilst traditionally it has been detected on histopathology analysis of the surgical resection specimen, more recently, it has been readily identified on magnetic resonance imaging (mrEMVI), which can aid in

pre-operative decision-making. The aim of this article is to meta-analyse the literature to ascertain the prevalence of rectal tumours with mrEMVI and its association with synchronous and risk of developing metachronous metastatic disease after surgery.

Method: Electronic databases were searched from January 1950 to July 2015. Conventional meta-analytical techniques were used to provide a summative outcome. Quality assessment of the studies was performed.

Result: Six articles reported on mrEMVI in 1262 patients. There were 403 patients in the mrEMVI positive group and 859 patients in the mrEMVI negative group. The combined incidence of mrEMVI positive tumours was 0.346(Range=0.198-0.574). Patients who had mrEMVI positive tumours had more metastases at presentation compared with mrEMVI negative tumours [fixed effects model: OR=5.68,95%CI(3.75,8.61),z=8.21,df=2,p<0.001]. Patients who were mrEMVI positive had more metastases during follow-up [random effects model:OR=3.91,95%CI(2.61,5.86),z=6.63,df=5,p<0.001].

Conclusion: EMVI has been increasingly shown to be a poor prognostic factor in rectal cancer. It is now readily identified on MRI (mrEMVI) as an independent prognostic factor with a significant prevalence in rectal tumour population. Synchronous metastases are over five times more likely when mrEMVI is present and patients are over three times as likely to develop metastases after surgery.

Take-home message:

Synchronous metastases are over five times more likely when mrEMVI is present and patients are over three times as likely to develop metastases after surgery.

051 THE USE OF TOTAL PELVIC FLOOR ULTRASOUND IN THE PELVIC FLOOR MULTIDISCIPLINARY MEETING

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Introduction: The aim was to review suitability of pelvic floor ultrasound (transvaginal, transperineal) against defaecation proctography (gold standard) for women with defaecatory dysfunction in the pelvic floor multidisciplinary meeting.

Method: The history and dynamic pelvic floor ultrasound images of 50 anonymised women with defaecatory dysfunction were reviewed by two blinded clinicians. One month later they were re-reviewed with the dynamic proctography images instead of ultrasound. The clinicians answered: What is your mainstay of treatment? If surgery, which operation? How certain are you? Likert scale If reviewing the ultrasound, would you order a proctogram? Treatment (Biofeedback (BFB) or BFB with surgery) was recorded.

Result: Intended treatment after review with pelvic floor ultrasound was BFB alone for 18 patients, BFB with proctogram if conservative measures fail for 14 and BFB with surgery for 18. Actual treatment was BFB for 38, surgery for 11 and 1 awaiting clinic. All treated with BFB would have been appropriately managed based on ultrasound alone. All 18 whose intended treatment was BFB with surgery on review with PFUS were also considered suitable for BFB and surgery on review with proctography (9 underwent surgery). There was a significant rise in clinician confidence with proctography compared to decisions made with ultrasound (p<0.00001).

Conclusion: Pelvic floor ultrasound can replace defaecation proctography as an initial assessment tool for women with pelvic floor defaecation dysfunction. The need for proctography can be limited to those patients' where there is uncertainty amongst clinicians, in certain patients where BFB has failed or for surgical planning.

Take-home message:

Pelvic floor ultrasound can replace defaecation proctography as an initial assessment tool for women with pelvic floor defaecation dysfunction. Defaecatory imaging can be limited to those patients' where there is uncertainty amongst clinicians, where BFB has failed or for surgical planning.