Prevalence of pelvic floor symptoms in female patients attending the two-week wait clinic with suspected colorectal cancer

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ABSTRACT

INTRODUCTION The aim of this study was to establish the prevalence of pelvic floor symptoms in women referred to a colorectal two-week wait (2WW) clinic with suspected colorectal cancer.

METHODS A questionnaire assessing faecal incontinence (FI) (Wexner score) and obstructed defecation syndrome (ODS) (Renzi score) was offered to 98 consecutive female patients attending a colorectal 2WW clinic at a single trust.

RESULTS Overall, 56 (57%) of the 98 patients had significant ODS and/or FI (scores >9/20), 33 (34%) had ODS and 40 (41%) had FI. Seventeen patients (17%) had both ODS and FI. Analysis of the 63 patients referred with a change in bowel habit (CIBH) showed 40 (63%) to be Renzi and/or Wexner positive compared with 16 (46%) of the 35 patients who presented without CIBH ($p=0.095$, Fisher's exact test). Further analysis showed that 31 (78%) of the 40 patients with FI presented with CIBH compared with 32 (55%) of the 58 without FI ($p=0.032$). In terms of ODS, 23 (70%) of the 33 patients with ODS presented with CIBH compared with 40 (62%) of the 65 without ODS ($p=0.506$).

CONCLUSIONS Over half of the female patients attending our colorectal 2WW clinic had significant pelvic floor dysfunction (FI/ODS), which may account for their symptoms (especially in the CIBH referral category). While it is important for malignancy to be excluded, many patients may benefit from investigation and management of their pelvic floor dysfunction as the cause for their presenting symptoms.

KEYWORDS

Pelvic floor disorders – Faecal incontinence – Colorectal cancer – Signs and symptoms – Digestive

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Colorectal manifestations of pelvic floor dysfunction include faecal incontinence (FI) and obstructed defecation. These symptoms often have multifactorial causation with age, obstetric or other injuries, neurological disorders, previous pelvic surgery, behavioural aspects, gut motility and stool consistency all contributing.^{1–6} FI and obstructed defecation can have a significant impact on quality of life^{2,7,8} but prevalence is difficult to establish as symptoms often go unreported.² The estimated prevalence of incontinence in mixed populations ranges from 2% to 21%^{1,4,9–12} using a variety of assessment instruments. Fewer studies of the prevalence of obstructed defecation syndrome (ODS) exist but estimates range from 4% to 26% of various populations.^{5,13}

Several instruments have been developed for assessing FI.^{14,15} One is the Wexner (or Cleveland Clinic) score,¹⁴ which has been shown to demonstrate good inter and intra-observer reliability.¹⁵ This score consists of five elements, which patients score according to frequency (never, rarely, sometimes, usually or always) from 0 to 4, giving a total

score of 0 (complete continence) to 20 (complete incontinence). The Wexner score has been shown to correlate well with clinical assessment of severity of incontinence¹⁶ and a score of 9/20 represents significant FI.⁷

As understanding of obstructed defecation has developed, so have ways of assessing it.^{17,18} The Renzi method is a recently validated instrument for ODS that similarly consists of five elements scored according to the same frequencies as for the Wexner scale.¹⁹ The Renzi score has also been shown to demonstrate significant ODS above a score of 9/20. We chose this scoring system as it was simple to administer to an outpatient population.

The colorectal two-week wait (2WW) service has been developed to expedite diagnosis of colorectal cancer with the aim of improving outcomes. Large numbers of patients are seen through this pathway but the literature shows that only 6–14% of patients referred via this route are diagnosed with cancer and this is decreasing over time.^{20–25} Experience suggests that the secondary care system does not have

the capacity for full investigation and management of the remaining patients with functional and benign colorectal disorders that may be identified. This could represent a potentially significant need for development of pelvic floor services.

Currently, if patients have a test that rules out colorectal cancer, it is our standard practice to refer them back to their general practitioner (GP) with no follow-up review as the 2WW referral pathway is intended for cancer patients. Consequently, patients with pelvic floor dysfunction as a cause for their symptoms are not having this assessed adequately via the 2WW referral. These patients are frequently re-referred after a period of time.

This pilot prospective observational study was conceived to quantify the numbers of patients presenting via the 2WW system who have underlying pelvic floor dysfunction. It is hoped that these data will be able to inform service delivery.

Methods

A questionnaire was designed to enable calculation of both the Wexner and Renzi scores (Fig 1). The Wexner score was calculated based on questions asking about frequencies for incontinence with solid stool, liquid stool and gas, wearing of incontinence pads and alteration of lifestyle due to incontinence. Questions for calculating the Renzi score asked about frequencies for straining at stool, incomplete emptying, use of enemas or laxatives, self-dilatation and suffering abdominal discomfort or pain. The proforma was approved by our trust's Questionnaire, Interview and Survey Group, who requested that the categories of 'never, rarely, sometimes, usually and always' were modified to 'never, rarely, monthly, weekly and daily' to ensure clarity for our patients. In addition, information was collected on National Institute for Health and Clinical Excellence (NICE) referral category (Fig 2), subsequent tests requested and outcome in terms of pathology identified, and presence or absence of malignancy.

The questionnaire was administered in all the colorectal consultant's outpatient clinics over a two-month period. Consecutive female patients who had been referred via the 2WW pathway were identified. Aside from female sex and 2WW referral, the patients were otherwise unselected. On arrival, these patients were provided with a covering letter explaining the study and the questionnaire. It was made clear that they were under no obligation to complete the questionnaire. Tests requested and the referral category were filled in by medical staff. The questionnaire was labelled with patient identification details so the Wexner and Renzi scores could be linked with the test results. Investigations requested were not influenced by test scores.

As per departmental policy, patients who did not have a colorectal cancer identified were referred back to their GP with general recommendations, which may have included advice specific to pelvic floor dysfunction if this was identified in the 2WW consultation. In order to avoid difficulties with commissioners, the GPs were asked to re-refer patients with a high score for consideration of investigation and management options for their pelvic floor dysfunction if they felt it would benefit the patient.

Results

A total of 98 patients completed the questionnaire. Wexner and Renzi scores were calculated for all of these patients. Five patients (5%) had incomplete referral and follow-up data but were included in the denominator for analysis purposes, as were a further four patients (4%) who had complete follow-up data but no reason for referral identified on our system or in their paperwork.

Forty patients (41%) had significant FI (Wexner score $>9/20$), thirty-three (34%) had significant ODS (Renzi score $>9/20$) and seventeen (17%) had both (Table 1, Fig 3). Fifty-six patients (57%) had significant pelvic floor symptoms overall. There was no association between the Wexner and Renzi scores ($p=0.135$, Fisher's exact test). This may be expected as they assess two different aspects of pelvic floor dysfunction.

Hysterectomy

A quarter of the patients ($n=24$, 24%) were known to have had a hysterectomy. However, there was no association in our series between hysterectomy and FI (Wexner score) or ODS (Renzi score) (Tables 2 and 3).

Analysis by referral category

The majority of patients were referred in one of the categories with an element of change in bowel habit (CIBH), with small numbers in several other categories (Table 4). Data were therefore analysed according to presence or absence of CIBH, with the inclusion of patients with incomplete data. Analysing by groups with or without FI or ODS (Tables 5 and 6), it can be seen that FI had a significant relationship with CIBH ($p=0.032$, Fisher's exact test).

Pathology

The pathologies identified included diverticular disease, benign anal conditions (including haemorrhoids), polyps, inflammatory conditions, malignancy, pelvic floor dysfunction, rectal prolapse or intussusception, colovesical fistulas and Paget's disease of the pelvis. In this cohort, only 3% of patients were diagnosed with cancer. Very few patients had pelvic floor dysfunction recorded as a likely clinical diagnosis (2%) compared with the number identified as having a significant Wexner or Renzi score (57%). In the context of the referral pathway and tests requested, this is perhaps unsurprising.

There was no significant relationship between pathology and positive Wexner and/or Renzi score (Table 7). A high score for either FI or ODS does not mean an underlying cancer is excluded.

Discussion

In our study, 41% of women referred to the colorectal 2WW clinic had a Wexner score consistent with FI and 34% had a Renzi score consistent with ODS. Although these scoring systems have been validated elsewhere, as no formal clinical assessment of pelvic floor dysfunction was undertaken in this study, the scores were not validated in our own

For each question please tick the box that best describes you.

1. How often do you experience the following symptoms?

	<i>Never</i>	<i>Rarely</i>	<i>Monthly</i>	<i>Weekly</i>	<i>Daily</i>
Straining to try and open your bowels (eg needing to make a forceful or prolonged effort)					
Feeling of having not fully emptied your rectum (back passage)					
Needing to use an enema or laxative to try and help open your bowels					
Using your finger in your vagina or rectum (or applying external pressure) to try and help open your bowels					
Suffering abdominal discomfort or pain					

2. How often do you experience incontinence with the following?

	<i>Never</i>	<i>Rarely</i>	<i>Monthly</i>	<i>Weekly</i>	<i>Daily</i>
Solid stools					
Liquid stools					
Gas (wind)					

3. Do you ever have to wear an incontinence pad?

<i>Never</i>	<i>Rarely</i>	<i>Monthly</i>	<i>Weekly</i>	<i>Daily</i>

4. Do you ever have to alter your lifestyle because of incontinence?

(eg avoiding going out shopping/to the cinema or restaurant; taking time off work/not being able to carry out all your duties; planning your day around where the nearest toilets are; avoiding public transport)

<i>Never</i>	<i>Rarely</i>	<i>Monthly</i>	<i>Weekly</i>	<i>Daily</i>

5. Have you ever had a hysterectomy (womb removed)?

<i>Yes</i>	<i>No</i>

Figure 1 Questionnaire for calculating Wexner and Renzi scores

Referral categories

Age >40 years + rectal bleeding + change in bowel habit
Change in bowel habit for > 6 weeks
Rectal bleeding for > 6 weeks
Mass in right lower quadrant of abdomen
Palpable rectal or anal canal mass
Unexplained iron deficiency anaemia
Other

Figure 2 National Institute for Health and Clinical Excellence referral categories for suspected lower gastrointestinal cancer³⁰

Table 1 Distribution of patients by presence of faecal incontinence (FI) and/or obstructed defecation syndrome (ODS) ($p=0.135$, Fisher's exact test)

	No FI	FI	Total
No ODS	42	23	65
ODS	16	17	33
Total	58	40	98

Table 2 Association between faecal incontinence (FI) and hysterectomy ($p=0.154$, Fisher's exact test)

	No FI	FI	Total
No hysterectomy	47	27	74
Hysterectomy	11	13	24
Total	58	40	98

Table 3 Association between obstructed defecation syndrome (ODS) and hysterectomy ($p=1$, Fisher's exact test)

	No ODS	ODS	Total
No hysterectomy	49	25	74
Hysterectomy	16	8	24
Total	65	33	98

population. These prevalence figures are higher than would be expected in the general population,^{1,5–5,9–15} suggesting that these patients are overrepresented in the 2WW pathway and their symptoms may therefore be due to their pelvic floor dysfunction as long as cancer is excluded. Of course, the skewed age in a 2WW referral clinic may also contribute to an increased rate compared with the background population. Patients in the CIBH referral categories were significantly more likely to have pelvic floor dysfunction.

The cancer detection rate in our study was only 3%, which is much lower than other reported series, with rates of 6–14% in a 2WW population.^{20–26} Our detection rate may have been influenced by the exclusion of male patients. However, there is a suggestion that detection rates are falling²⁷ with referrals increasing, particularly following the Be Clear on Cancer campaign in 2012.²⁶ In view of this, some studies have examined referral practice, finding variation in terms of compliance with guidelines^{27,28} and that a quarter of patients referred via the 2WW system do not meet the criteria when seen in the clinic,²⁰ leading to calls for increased GP education on referral guidelines. The fact that 57% of the women attending our 2WW clinic had significant pelvic floor

dysfunction may indicate a lack of transparent alternative pathways for appropriate benign colorectal and pelvic floor services.

In addition, the model of discharging back to the GP when cancer is excluded may need revision; a study from 2014 found that a third of patients in a straight-to-test system would like an appointment with a specialist following the test.²⁹ Taking our findings into account, this is likely to represent patients with troublesome symptoms from benign pathologies, including pelvic floor dysfunction. With costs per cancer detected rising because of increasing 2WW referrals,²⁶ a sustainable way of funding improved pelvic floor services must be found to reduce the numbers of patients presenting via the urgent pathway while ensuring cancers are not missed in this population.

In 2007 NICE published guidelines on the management of FI in adults, identifying it as a problem affecting 1% of the population to the extent that it significantly reduced their quality of life.² They recommend assessment and initial management in primary care with onward referral if simple measures do not have satisfactory results. Our study implies there are many patients with pelvic floor dysfunction who might benefit from this recommendation but who, for various reasons, remain undiagnosed. NICE found that there were many reasons for not seeking help and the patient's perception of health professionals was that they were ignorant of management of the condition, leading to a lack of trust.

A key recommendation from the NICE report is that 'healthcare professionals should actively yet sensitively enquire about symptoms in high-risk groups'.² Long-term problems with evacuation or continence may be interpreted by primary care practitioners as a red flag symptom depending on the presence of associated symptoms such as rectal bleeding. The NICE guidelines relating to lower

Table 4 Average scores by two-week wait referral category

Referral category	n	Median (mean) score	
		Wexner	Renzi
Age >40 years + rectal bleeding + change in bowel habit	30	7.5 (7.67)	8 (7.90)
Change in bowel habit for >6 weeks	33	9 (8.36)	7 (6.88)
Rectal bleeding for >6 weeks	3	7 (7.67)	7 (7.00)
Mass in right lower quadrant of abdomen	6	3 (3.00)	5 (5.33)
Palpable rectal or anal canal mass	4	8.5 (8.00)	8.5 (9.00)
Unexplained iron deficient anaemia	7	5 (4.14)	4 (4.14)
Other	6	8 (5.50)	7.5 (7.50)
Unknown	9	8 (7.89)	7 (8.22)

Table 5 Association between faecal incontinence (FI) and
change in bowel habit (CIBH) ($p=0.032$, Fisher's exact test)

	No FI	FI	Total
No CIBH	26	9	35
CIBH	32	31	63
Total	58	40	98

gastrointestinal cancer state that for patients 'with equivocal symptoms who are not unduly anxious, it is reasonable to use a period of "treat, watch and wait" as a method of management'.⁵⁰

It is important to note that we are not suggesting that patients should be denied referral along the 2WW pathway on the basis of positive evidence of pelvic floor dysfunction as in our series, this would have led to two cancers being missed. Our message is that the 2WW pathway alone does not meet the needs of a significant number of the patients referred via this route.

As the prevalence of pelvic floor dysfunction seems to be significantly higher in patients referred to the 2WW clinic than that of the general population, this group needs to be followed up in some way to fulfil the commitment to patients with pelvic floor dysfunction outlined by NICE.² Equally, a screening questionnaire to detect pelvic floor dysfunction, together with a more detailed interrogation of CIBH, may satisfy GPs that patients can be referred via an alternative pathway. Owing to the numbers of patients involved, setting up nurse-led clinics may be the solution.

Conclusions

Despite the use of robust assessment scales, this was a single centre study and may not represent the full picture

Table 6 Association between obstructed defecation
syndrome (ODS) and change in bowel habit (CIBH)
($p=0.506$, Fisher's exact test)

	No ODS	ODS	Total
No CIBH	25	10	35
CIBH	40	23	63
Total	65	33	98

Table 7 Association between pathology and pelvic floor
dysfunction (PFD) ($p=0.181$, Fisher's exact test)

Pathology	No PFD	PFD (Wexner and/or Renzi positive)	Total
No adenomatous polyp and no cancer	32	49	81
Adenomatous polyp or cancer	10	7	17
Total	42	56	98

nationally. Successful confirmation of these findings in different settings would give further weight to the argument for greater pelvic floor service provision. Following up patients identified in this way in terms of whether their underlying problem was addressed by the 2WW clinic and quantification of further colorectal related attendances with their GP or re-referrals would also be of great interest.

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