

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

Hypothesis / aims of study

Within the dedicated colorectal pelvic floor unit all cases are discussed in a multidisciplinary meeting. All investigations (including anorectal physiology, total pelvic floor ultrasound (PFUS), defaecation proctography, colonic transit studies and colonoscopies) and a detailed clinical history are reviewed in order to determine an optimal management plan. This usually entails either biofeedback (BFB) alone or BFB with surgery or specific surgeries.

Defaecation proctography has been the main assessment tool for pelvic floor defaecatory dysfunction but the advent of PFUS provides another potential imaging modality.

This study aimed to review the therapeutic effects and suitability of PFUS against defaecation proctography (previously considered the gold standard investigation) for women with pelvic floor defaecatory dysfunction.

Study design, materials and methods

The clinical history, pelvic floor investigations (anorectal physiology with or without colonic transit study and colonoscopy) along with dynamic PFUS images (transperineal, transvaginal and endoanal ultrasound) of 50 anonymised women who had historically presented to the pelvic floor unit with pelvic floor defaecatory dysfunction were reviewed by two clinicians, trained in interpretation of PFUS and defaecatory proctograms, blinded to defaecation proctography and clinical outcomes. One month later the same cases were reviewed with the dynamic defaecation proctography images in the place of PFUS.

The clinicians answered the following questions:

1. What would be your mainstay of treatment? (BFB alone or BFB and surgery)
2. How likely do you think surgery is? Likert scale 1 (not likely) to 5 (certain)
3. If surgery is indicated which operation would be performed?
4. How certain are you of the management plan? Likert scale 1 (not certain) to 5 (certain)
5. If you are reviewing the PFUS would you order a proctogram?

Treatment (BFB alone or BFB with surgery) was retrospectively recorded.

Results

Of the 50 women studied, 38 underwent BFB alone, 11 underwent surgery (6 transvaginal rectocele repair (TVRR), 4 ventral mesh rectopexy (VMR) and 1 sacral nerve stimulation) and 1 was awaiting clinic to discuss surgical options.

When blinded to defaecation proctography, intended treatment after review with PFUS was 'BFB alone' for 18 patients, 'BFB with a proctogram if conservative measures fail to resolve symptoms' for 14 patients and 'BFB with surgery' for 18 patients.

Table one shows the actual treatment received and intended treatment based upon PFUS or defaecation proctography.

Table one: Actual and intended treatment

Actual Treatment	Intended Treatment	
	With review of PFUS	With review of proctogram
BFB – 38	BFB - 18	BFB – 16 BFB and surgery - 2
	BFB with a proctogram if conservative measures fail - 11	BFB - 6 BFB and surgery - 5
	BFB and surgery - 9	BFB and surgery - 9
BFB and surgery – 12 (11 undergone surgery and 1 awaiting clinic to discuss surgery)	BFB with a proctogram if conservative measures fail - 3	BFB and surgery - 3
	BFB and surgery - 9	BFB and surgery - 9

As seen in the table above all patients who were treated with BFB would have been appropriately managed based on PFUS alone.

Of the 18 cases where BFB alone was recommended, 2 changed to 'BFB with surgery' on review of proctography. However, these cases were treated with BFB alone.

With PFUS in its infancy, there were 14 cases where, upon review of the PFUS, the blinded clinicians suggested 'BFB with a defaecation proctogram should conservative measures fail'. In this group only 2 patients underwent surgery and this was only after BFB.

All 18 patients whose intended treatment was 'BFB with surgery' on review with PFUS were also considered suitable for 'BFB and surgery' on review with defaecation proctography. Only 9 of these 18 women underwent surgery; the remainder opted for conservative measures after outpatient review and discussion with their clinician.

The majority (15 out of 18) of the intended surgeries were the same when reviewing either test (9 VMR, 6 TVRR) but 3 changed (2 TVRR on proctography but VMR on PFUS and 1 vice versa).

There was a significant rise in the clinicians' confidence in their intended treatment decision with defaecation proctography (mean 4.38, range 3 – 5) compared to decisions made with PFUS (mean 4.38, range 3 – 5) ($p < 0.00001$). During review with PFUS, there were 3 cases where the clinician had a certainty level of ≤ 2 ; the management plans of 2 of these patients was different with proctography but actual treatment correlated with decision on PFUS.

For those patients who underwent surgery, there was no significant difference in the clinicians confidence in surgical treatment ($p = 0.34$) during review with the two imaging modalities (PFUS (mean 4, range 2 – 5) versus defaecation proctography (mean 4.2, range 3 – 5)).

Interpretation of results

The use of PFUS for decision making in the colorectal pelvic floor multidisciplinary meeting is accurate. With PFUS still in its infancy clinicians not have the same confidence in decision making based upon PFUS when compared with defaecation proctography.

Concluding message

PFUS 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 where surgical intervention is required. This will avoid radiation in a group of patients and also avoid unnecessary time consuming and costly investigation.

Disclosures

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