W32: Pelvic floor defecatory dysfunction: Management or cure?
Workshop Chair: Paula Igualada-Martinez, United Kingdom
15 September 2017 09:30 - 12:30

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<td>PFDD in Urogynaecology and Urology Clinics</td>
<td>Heidi Wendell Brown</td>
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<td>Biofeedback in patients with PFDD</td>
<td>Paula Igualada-Martinez</td>
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<td>Carlene Igbedioh/ Paula Igualada-Martinez</td>
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Speaker Powerpoint Slides
Please note that where authorised by the speaker all PowerPoint slides presented at the workshop will be made available after the meeting via the ICS website [www.ics.org/2017/programme](http://www.ics.org/2017/programme) Please do not film or photograph the slides during the workshop as this is distracting for the speakers.

Aims of Workshop
This workshop will provide an overview of the pathophysiology, evaluation and both conservative (including a practical element) and surgical management of Pelvic floor defecatory dysfunction. This workshop will also cover psychological symptoms and its management in this group of patients as well as how to identify and manage them when presenting to the urogynaecology and/or urology clinics with concomitant pelvic floor symptoms. These disorders affect both women and men and necessitate a multidisciplinary team approach. It is also an opportunity to raise awareness of bowel evacuation difficulties and its relationship with urinary and sexual symptoms in a society that predominantly focuses on urinary incontinence.

Learning Objectives
Aim: The aim of this course is to learn how to evaluate and manage pelvic floor defecatory dysfunction (PFDD). The objectives for this workshop are:
- To understand the pathophysiology of pelvic floor defecatory dysfunction (PFDD)
- To recognise and classify types of PFDD
- To learn how to evaluate PFDD
- To understand the role of imaging in patients with PFDD
- To understand the impact of PFDD in urinary and sexual function and what to do if patients present to a Urogynaecology or Urology clinic and when to liaise with the Colorectal team
- To understand the role of biofeedback in the management of PFDD and the use of Rectal Irrigation as part of the management of PFDD
- To understand the pharmacological management of PFDD
- To understand the surgical management of PFDD
- To understand the importance of psychological assessment in the management of PFDD

Learning Outcomes
At the end of the workshop the participants should be able to:
- Identify Pelvic floor disorders that affect defecation
- Understand the assessment of pelvic floor defecatory dysfunction and the necessity before embarking onto any treatment
- Urologists and Urogynaecologists need to be aware of PFDD when these patients present to their clinics with urinary and/or sexual symptoms
- Identify Biofeedback as first line management in patients with PFDD and be able to provide basic advice
- Able to understand the principle of Rectal irrigation use in patients with PFDD
- Understand the pharmacological treatment of PFDD and how to escalate the different medication of PFDD
- Understand that surgery should be considered for management of PFDD but only when the underlying pathophysiological dysfunction has been corrected
- Understand the impact of mental health and the relationship to bowel dysfunction and when to refer to a specialist
- At the end of the workshop, the speakers will do a quiz where the participants should be able to demonstrate the newly acquired knowledge

**Target Audience**
Colorectal Surgeons, Urogynaecologists, Urologists, Nurses, Physiotherapists, Clinical Psychologists

**Advanced/Basic**
Advanced

**Conditions for Learning**
This workshop is restricted to 50 delegates due to the practical element.

**Suggested Learning before Workshop Attendance**
- Review of the anatomy and physiology of the pelvic floor complex, including the pelvic floor muscles, the external and internal anal sphincters and the endopelvic fascia
- Review of the normal bowel function and defecation dynamics

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<th>Speaker 1 (Paula Igualada-Martinez)</th>
<th>Introduction to the Workshop</th>
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<tr>
<td>Defecatory dysfunction of the pelvic floor includes both mechanical and functional ano-rectal disorders. This workshop will not only evaluate the most up-to-date evidence regarding the recognition of pelvic floor defecatory dysfunction (PFDD), the assessment and treatment of PFDD, but the importance of collaborative work amongst the multidisciplinary team. We hope that you will find this workshop stimulating and that it will add to your clinical practice ensuring a safe and effective assessment and treatment of this group of patients.</td>
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**Biofeedback**
Biofeedback should be the first line management for pelvic floor defecatory dysfunction due to the minimal risk and the higher rate of success with completion of therapy. Biofeedback is based on behavior modification by using “operant conditioning techniques” to restore a normal pattern of defecation. The government principle is that any behavior when reinforced repeatedly can be learned and perfected.  

Biofeedback retraining usually involves correcting the underlying pelvic floor dyssynergia by teaching patient to defecate effectively using bracing of the abdominal wall muscles and effective relaxation of the pelvic floor muscles with or without attempts to improve rectal sensory perception. There are three main methods of monitoring the function of the anus and providing biofeedback to patients. These methods include electromyography (EMG) biofeedback, manometry biofeedback and balloon sensory training.  

During biofeedback sessions patients may also be given instruction on gut, rectal and pelvic floor muscle anatomy and function, as well as behavioral advice about frequency and length of toilet visits, posture on the toilet, increasing fiber and fluid intake and physical activity.  

Pelvic floor muscle rehabilitation has become also an integral part of the treatment of these patients due to the higher incidence of other pelvic floor disorders associated with PFDD such as urinary incontinence and pelvic organ prolapse.  

As an adjunct to Biofeedback, rectal irrigation has become rapidly an effective intervention in nearly half of the patients with pelvic floor defecatory dysfunction.  

Although there is some debate in the literature about the degree of effectiveness of biofeedback, success rates range between 30 and 90% and preferred to by patients when compared to chronic laxative use. Poor prognosis of biofeedback includes those patients with eating disorders and untreated mental health disorders and they should be identified during initial evaluation, and referred to a psychologist or psychiatrist.  

**Take home message:**
- Biofeedback and/or conservative measures should be first line management in patients with PFDD  
- Biofeedback is an established intervention for patients with PFDD that helps 30 to 90% of patients with PFDD
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<th>Speaker 2 (Alexis Schizas)</th>
<th>Pathophysiology of PFDD</th>
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<tr>
<td>PFDD occur in about 18% of the population and have a considerable impact on health costs and quality of life. PFDD encompasses both functional and mechanical causes. Before defaecation occurs the rectum dispense and the somatic sensation leads to a relaxation of the internal anal sphincter and if it is an appropriate time defaecation occurs. If it is not an appropriate time there is voluntary contraction of the external anal sphincter and pelvic floor muscles until the sensation to defecate passes and an appropriate time. In order to defecate the recto-anal angle straightens by squatting and correct defecatory dynamics are required (using the abdominal muscles and diaphragm).</td>
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<td>Pelvic floor defecatory dysfunction is the difficulty in evacuation of the rectum. It can be classified into several groups: 1. Functional outlet obstruction (Inefficient relaxation of the anal sphincters, Internal anal sphincter, External anal sphincter and pelvic floor muscles, Neurological causes) 2. Mechanical outlet obstruction (Intrarectal intussusception/rectal prolapse, Enterocoele) 3. Defaecatory force and direction (Rectocele, Perineal descent, Poor propulsive effort) 4. Colorectal Compliance (Mega rectum, Rectal hyposensitivity, Slow transit)</td>
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<td>Patients with defecatory difficulties complain of symptoms of straining, feeling of incomplete evacuation, pain, digital assistance during defecation and unsuccessful attempts. They may also send an extended time on the toilet, have decreased bowel frequency; complain of post defecation soiling and fragmented defecation. They often complain of concomitant urinary and/or sexual symptoms.</td>
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<td>Surgical management of PFDD</td>
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<td>Conservative treatment is the initial treatment for defecatory dysfunction and correct defecatory technique is essential following surgery to prevent recurrence of symptoms and pathology.</td>
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<td>Surgery can assist in correcting anatomical pathology and several surgical procedures are available. 1. Rectal prolapse surgery: - Transvaginal rectocele repair and levatoplasty - Ventral mesh rectopexy - Stapled transanal resection of rectum 2. Full thickness rectal prolapse - Perineal procedures – Delorme’s/ Altemeier’s - Abdominal procedures – ventral mesh rectopexy, posterior mesh rectopexy, resection rectopexy, sutured rectopexy. 3. Intussusception - Ventral mesh rectopexy - Stapled transanal resection of rectum 4. Enterocoele - Transvaginal rectocele repair, enterocoele repair and levatoplasty - Ventral mesh rectopexy</td>
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<td>Complications of surgery must be fully discussed and all patient’s symptoms may not be corrected by surgery. Correcting anatomical abnormalities may not necessarily correct symptoms. Unfortunately, surgery can sometimes make pelvic floor symptoms worse.</td>
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<td>Often rectal anatomical abnormalities are not found in isolation, patient may often have symptoms and pathology in the middle and anterior pelvic floor compartments.</td>
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<td>A full pelvic floor assessment is required a combined colorectal/urology/urogynaecology approach may be required to achieve the best results for patients.</td>
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<tr>
<td>Take home message</td>
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<td>- A clear understanding of pathology is required to make an appropriate decision with each patient if any surgical options are available and which will be the most appropriate for their symptoms.</td>
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Pelvic floor defaecatory dysfunction is often associated with anterior and middle pelvic floor dysfunction and is an ‘iceberg’ syndrome where occult pathologies coexist and if missed will affect outcomes. Robust assessment is required for optimal treatment planning. There is no gold standard assessment tool but a combination of clinical, physiological and radiological tools are used.

**Clinical Assessment**

Pelvic floor defaecatory dysfunction includes incomplete evacuation, post defaecatory soiling, faecal urgency and incontinence. These may occur in those with malignancy which must be excluded first.

Incomplete evacuation, incontinence, constipation and symptoms attributable to anterior and middle compartmental dysfunction often co-exist and so it is difficult to diagnose pathology based on symptoms alone. The association between symptoms and anatomical abnormalities is not absolute.

Treatment aims to reduce the ‘bother’ of symptoms and therefore a series of standardised questionnaires exist to objectively measure ‘bother’, quality of life and treatment outcomes. The obstructed defaecation syndrome (ODS) score is the only scoring system designed specifically for use with patients with pure outlet obstruction.

Examination includes digital rectal examination and vaginal examination.

**Anorectal Physiology**

The function of the anal canal and rectum is assessed by a catheter and includes rest and squeeze pressures; vectograms; first, urge and maximal sensation; rectal compliance and balloon evacuation. There is conflicting evidence on the association of rectal compliance with obstructive defaecation. Some demonstrate normal compliance and sensation in all subjects (with/without a rectocoele) whilst others show reduced rectal compliance and impaired sensation.

**Defaecation Proctography**

Defaecation proctography is a dynamic investigation of rectal emptying involving the voluntary expulsion of barium paste recorded on cineradiography or fluororadiography. It is regarded as gold standard for the morphological assessment of posterior compartment pelvic floor disorders with the advantages of assessing defaecatory dynamics. It provides structural and functional assessment of; rectocoele, intussusception, rectal prolapse, enterocoele, sigmoidocoele, perineal decent and the anorectal angle along with anismus and evacuation. Pathological findings in asymptomatic volunteers has thrown into question proctographic parameters.

**Defaecation MRI**

Numerous techniques for MR defaecography are described including the use of closed configuration magnets in the supine position or vertically open configuration magnets in the sitting position. MRI can distinguish between enterocoele, sigmoidocoele and peritoneocoele without additional contrast but supine imaging underestimates pathology and open configuration magnets are inaccessible.

**Integrated Total Pelvic Floor Ultrasound (endoanal, transvaginal, transperineal)**

Endoanal, transvaginal and transperineal ultrasound are routinely used for anterior and middle compartmental assessment and the integrity of the anal sphincters. Its’ use in the assessment of enterocoele, rectocoele, intussusception, rectal prolapse and anismus are being explored.

Endoanal ultrasound assesses the integrity of the internal and external sphincters and associated defects, sepsis, obstetric trauma or sphincter thickening.

Transperineal ultrasound a high positive predictive value and low negative predictive value for abnormalities compared to defaecatory proctography (for example, rectocoele). It may provide a suitable screening tool for symptomatic patients and therefore avoid the need for defaecatory imaging in some patients.

**Take home message:**

- Physiologic tests such as anorectal manometry and imaging such as Proctography and MRI play a key role in objective diagnosis and may assist in planning treatment for this group of patients.

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**Speaker 4 (Heidi Brown)**

**Pelvic floor defecatory dysfunction: The Urogynecologist’s Perspective**

The urologist or urogynecologist’s approach to defecatory dysfunction is similar to that of the colorectal surgeon but also often includes evaluation and investigation of concomitant urinary symptoms. Complaints of urinary urgency, frequency, or sensation of incomplete bladder emptying often prompt further investigation of bowel symptoms. Our approach to defecatory dysfunction includes: (1) clarification of patient symptoms; (2) consideration of underlying causes; (3)
recommendation of conservative management as first-line therapy; and (4) pursuit of surgical repair when it is likely to improve symptoms. According to ICS/IUGA terminology, straining to defecate refers to a patient’s complaint of the need to make an intensive effort (by abdominal straining or Valsalva) to initiate, maintain, or improve defecation. Feeling of incomplete (bowel) evacuation is the complaint that the rectum does not feel empty after defecation, while diminished rectal sensation refers to diminished or absent sensation in the rectum. Constipation incorporates the Rome II criteria and encompasses complaints that bowel movements are infrequent and/or incomplete and/or there is a need for frequent straining or manual assistance to defecate [2]. Splin ting refers to the need to digitally replace vaginal prolapse or otherwise apply manual pressure to the vagina or perineum, while manual evacuation refers to placement of fingers in the rectum to evacuate stool.

The pathophysiology of defecatory dysfunction is covered elsewhere in this workshop, but referral to a gastroenterologist may be helpful if you suspect systemic or motility disorders contributing to symptoms. The Pelvic Organ Prolapse Quantification (POP-Q) system [3] is used to quantify support defects in the posterior compartment, which may result in prolapse of the anterior rectal and posterior vaginal wall into the lumen of the vagina (‘rectocele,’) prolapse of the small bowel into the lumen of the vagina (‘enterocele,’) or perineal descent (perineum descending greater than or equal to 2 cm below the level of the ischial tuberosities at rest or at straining). Posterior compartment prolapse may be associated with splinting or manual evacuation symptoms, but most studies do not show a correlation between prolapse stage and defecatory symptoms.

First line management includes optimization of stool consistency through adjustments in fluid and fiber intake with additional pharmacologic therapy if necessary and referral to pelvic floor physiotherapy for muscle coordination, biofeedback, and behavioural coaching, including toileting behaviours. If symptoms persist following conservative management, surgical intervention is considered. Urogynecologists often approach posterior compartment prolapse with native tissue vaginal posterior repair with or without levator plication, which has success rates for anatomic restoration of 76–98% for traditional posterior colporrhaphy and 56–100% for site-specific repairs. Existing literature does not support the placement of biological or synthetic grafts in the posterior compartment, as they do not improve anatomic and symptomatic outcomes. If underlying concomitant reasons for defecatory dysfunction are not addressed prior to surgical repair, prolapse is likely to recur due to persistent straining. Transanal and transabdominal approaches to correct anatomic defects are more commonly performed by our colleagues in colorectal surgery.

Take home message:
- Many women that present to the Urogynaecology/Urology clinics with urinary symptoms will have concomitant bowel dysfunction so an understanding of investigations, treatment options and when to seek further opinion once simple measures have failed is important.
- A multidisciplinary approach including dietetics, physiotherapy, gastroenterology, colorectal surgery, and urogynaecology is preferred to ensure patients receive individualized and appropriate therapy.

Speaker 5 (Anton Emmanuel)

Psychological evaluation

Patients with functional colorectal problems often have symptoms related to other aspects of pelvic floor function. In addition, they often have non-pelvic co-morbidity in the form of other functional disorders (such as fibromyalgia, chronic back pain). The multiplicity of symptoms, and the nature of symptoms being often related to intimate or taboo functions mean that there is often an associated psychological dimension to be considered. In turn, these psychological symptoms can cause exacerbation of pelvic floor dysfunction. The spectrum of psychological morbidity ranges from low-grade anxiety to full-blown mood disorder. As such it is little surprise that purely focussing on the surgical aspects of management of pelvic dysfunction is likely to result in poor outcomes for the patient. Psychological evaluation is key to optimising treatment outcomes with other modalities, but also key to help explain the complexity of symptoms to patients and validate why they may have emotional complaints alongside the physical. The family drawing test has been used in children and adults to assess cognitive, interpersonal and psychological functioning. It has been investigated in patients with pelvic floor dysfunction and may be an alternative to obtaining a formal psychiatric or psychological opinion. This is a test for somatisation which can also be assessed by the PHQ-15 or the modified for GI patients PHQ-12. In terms of clinic assessment without needing referral to a psychological service, anxiety and depression can be identified by use of the HAD questionnaire and there is an extensive literature of this instrument being used to identify cases as well as reflect progress with therapies.
Pain questionnaires and maintaining a bowel diary are also helpful assessment tools, which can aid by pointing to possible trigger factors and cyclical patterns. Ultimately there will be a small group of patients who may be suffering with significant psychiatric disease. This includes, but is not limited to, atypical eating disorders. The clinician needs to keep an open mind and keen eye and ear to detect language and features that point to this. It is critical to identify these patients early and not subject them to both intrusive and surgical therapies or to behavioural therapies, which are not likely to succeed and rather defer the patient’s access to correct psychiatric therapies.

**Pharmacological therapy**

Drug therapy of pelvic floor dysfunction mostly relates to managing bowel function. Optimising bowel frequency and consistency is a key component of behavioural or surgical therapies in this patient group. In terms of constipation there is a rational approach to laxatives and rectal therapies that needs to be developed. These are potent drugs and they are not mutually interchangeable. Rather it is important that the clinician understands how to choose the right agent according to the particular symptom profile of the patient. Equally it is important to understand how laxatives may need to be used in terms of regular or as required use in order to get the best effect of these medications. Such an understanding arises from understanding the differing mechanisms of actions of laxatives. Newer generation prokinetic and secretagogue agents have emerged which offer an effective option for a proportion of patients who are refractory to laxatives. For diarrhoea the standard has been to use non-centrally acting opioid agonists in titrated fashion. Tricks of optimising this therapy can help some patients in order to avoid the adverse effects of agents that have adverse brain and dependence effects. New agents are emerging for such patients with diarrhoea, but a key part of the clinical work up of patients is to look for common (and overlooked) co-morbidities, which may be causing diarrhoea (such as bile acid malabsorption, pancreatic insufficiency and coeliac diseases). Finally there is a role of managing pain in many patients with pelvic floor dysfunction and the role of tricyclic agents and anti-epileptics is central to this.

**Take home message:**
- Occasionally there is an underlying psychological problem that needs to be addressed when treating PFDD
- Managing stool consistency and bowel frequency as well as treating pain when necessary is a key component of managing this group of patients

**Speaker 6 (Paula Igualada-Martinez/Carlene Igbedioh)**

**Rectal Irrigation**

Trans-anal irrigation therapy (TAI) is in widespread use throughout the UK as a treatment for obstructed defecation. TAI involves instilling tap water into the rectum via the anus, using either a balloon catheter or a cone delivery system. This is attached via a plastic tube to an irrigation bag holding up to 2 litres of water; alternatively a low-volume system consisting of a hand pump and a cone may be employed.

TAI may be an effective therapy for obstructed defecation, and may be considered in patients who have not responded to medical management. Irrigation is safe and its effectiveness is at least comparable with pharmacological therapies.

**Take home message:**
- Escalation of the appropriate treatment and appropriate assessment pre TAI is essential in order to adhere with clinical guidelines
- Patient selection is the most important factor for a successful intervention

**Suggested Reading**
Buongiorno! Good morning!

The Faculty

- Paula Igualada Martinez
- Alexis Schizas
- Heidi Brown
- Dave Chatoor
- Valentina Passananti

Pelvic floor defaecatory dysfunction: Management or cure?

Aim: The aim of this course is to learn how to evaluate and manage pelvic floor defaecatory dysfunction (PFDD)

The objectives for this workshop are:
- Pathophysiology and types of PFDD
- Learn how to evaluate
- Understand the role of imaging
- Present to a Urogynaecology or Urology clinic
- When to liaise with the colorectal team
- Role of biofeedback/rectal irrigation
- Pharmacological management
- Surgical management
- Importance of mental health on PFDD

At the end of the workshop you should be able to:
- Identify pelvic floor disorders that affect defecation
- Assessment of PFDD
- Awareness of PFDD
- Biofeedback/Rectal Irrigation
- Pharmacological treatment of PFDD
- The importance of mental health in PFDD
- When to seek surgical treatment!
**NEW FOR 2017**

Please complete the in-app evaluation in the workshop before leaving.

Step 1, open app and select programme by day

Step 2, locate workshop

Step 3, scroll to find evaluation button

Step 4, complete survey

A shortened version of the handout has been provided on entrance to the hall

A full handout for all workshops is available via the ICS website.

Please silence all mobile phones

Please refrain from taking video and pictures of the speakers and their slides. PDF versions of the slides (where approved) will be made available after the meeting via the ICS website.

Pathophysiology of PFDD

Alexis Schizas
Consultant Colorectal Surgeon
Guy’s and St Thomas’ NHS Foundation Trust

- PFDD occur in about 18% of the population
- Considerable impact on health costs
- Quality of life
- Functional and mechanical causes
Pathophysiology of PFDD

- Before defaecation occurs
  - rectum dispense and the somatic sensation
  - relaxation of the internal anal sphincter
  - if it is an appropriate time defaecation occurs
  - if not there is voluntary contraction
    - until the sensation to defecate passes

- To defecate
  - the recto-anal angel straightens by squatting
  - correct defaecatory dynamics are required
  - abdominal muscles and diaphragm

Pathophysiology of PFDD

- Patients with defaecatory difficulties complain of:
  - symptoms of straining
  - feeling of incomplete evacuation
  - pain
  - digital assistance during defecation
  - unsuccessful attempts
  - spend an extended time on the toilet
  - decreased bowel frequency
  - complain of post defecation soiling
  - fragmented defecation

Pathophysiology of PFDD

- Often complain of concomitant
  - urinary and/or sexual symptoms

PFDD

- PFDD is the difficulty in evacuation of the rectum
- Classified into several groups:
  - Functional outlet obstruction
    - (inefficient relaxation of the anal sphincters, Paradoxical sphincter contraction (anismus), neurological causes)
  - Mechanical outlet obstruction
    - (itrarectal intussusception/rectal prolapse, enterocoele)
  - Defaecatory force and direction
    - (rectocoele, perineal descent, poor propulsive effort)
  - Colorectal Compliance
    - (mega rectum, rectal hyposensitivity, slow transit)
  - Pelvic pain syndromes
    - (levator syndrome, coccygodynia, proctalgia fugax, pudendal neuralgia)
PFDD

- Classified into several groups:
  - Mechanical outlet obstruction
    - intrarectal intussusception
    - SRUS
    - rectal prolapse
    - enterocoele

- Defaecatory force and direction
  - rectocele
  - perineal descent
  - poor propulsive effort

- Colorectal Compliance
  - mega rectum
  - rectal hyposensitivity
  - slow transit

- Pelvic pain syndromes
  - levator syndrome
  - coccygodynia
  - proctalgia fugax
  - pudendal neuralgia

- Complex problem of rectal evacuation
  - Severity variable
  - Symptoms difficult to describe
  - Defined by a combination of symptoms
  - Pathophysiology not clear
    - Widening of the pelvic floor hiatus
    - Descent of pelvic
      - obesity
      - menopause
      - pregnancy
      - childbirth
      - inherited collagen deficiency
      - congenitally weak connective tissue

- Causes of Constipation
  - Dietary
    - Low fibre, dieting, dementia, depression, anorexia, fluid depletion
  - Metabolic
    - Diabetes mellitus, hypercalcaemia, hypokalaemia, hypothyroidism, porphyria
  - Neurological
    - Parkinson's disease, spinal cord pathology, multiple sclerosis
  - Iatrogenic
    - Antacids that contain aluminium, iron, anticholinergics, antidepressants, opiates for analgesia
  - Post-operative
  - Painful anorectal conditions
    - Anal fissure, haemorrhoids, abscess, fistula
  - Toilet avoidance
Evaluation and Imaging of Pelvic Floor Defaecatory Dysfunction

Alison Hainsworth
Colorectal Surgical Registrar/ Research Fellow

Aims of Presentation

Assessment of pelvic floor defaecatory dysfunction -

• Clinical Assessment
  • History
  • Symptom Severity Scores
  • Clinical Examination
• Anorectal Physiology
• Barostat
• Radiological Investigations
  • Colonic Transit Studies
  • Defaecatory Imaging (proctogram/ MRI)
  • Integrated Total Pelvic Floor Ultrasound

Clinical History

• Rule out organic disease
• Symptoms
difficulty initiating rectal emptying
incomplete evacuation,
feeling of obstruction
pelvic pressure
digitation (rectal/ vaginal)
straining
rectal pain/ bleeding
post defaecatory soiling
faecal incontinence

Not possible to distinguish between
pathologies based on symptoms alone.

Symptom Scoring

Degree of ‘bother’
Impact quality of life

Constipation
Obstructive defaecation
Faecal incontinence
Urinary
Vaginal
Sexual

Clinical History

• Link between symptoms & structural abnormalities not absolute.
  Is incomplete evacuation due to a rectocoele? [1]
  Overlap between rectocoele & intussusception [2; 3]
  Enterocoele symptoms vague [4]

• Not clear which symptom characteristics predict optimal treatment outcomes?
  Vaginal digitation may predict improvement after rectocoele repair [5; 6]
  Evacuatory difficulty may predict optimal results with biofeedback [7]
Questionnaires - Symptom Scoring

- Symptom severity, treatment outcomes
- The International Consultations on Incontinence (ICI)
  - universally applicable questionnaires, international populations
  - clinical practice and research
  - bowel, urinary, bladder, sexual,
  - quality of life [1]
- Obstructed defaecation syndrome (ODS) score
  - pure outlet obstruction
  - statistically validated
  - clustering of symptoms associated with different subtypes [1]

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<td>Symptoms</td>
<td>Validated - protocol</td>
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<td>ICIQ – VS</td>
<td>Bother</td>
<td>Repeatability</td>
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<td>ICIQ – UI Short form</td>
<td>Symptoms</td>
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<td>Obstructed defaecation syndrome (ODS) score</td>
<td>Symptom</td>
<td>Reliable</td>
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<td>Cleveland Constipation Score</td>
<td>Diagnosis</td>
<td>Correlates</td>
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<td>The Knowles Eccersley Scott Symptom (KESS) score - constipation</td>
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<td>Patient Assessment of Constipation Symptom (PAC – SYM)</td>
<td>Treatment</td>
<td>Consistent, reproducible, valid, responsive</td>
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<td>Patient Assessment of Constipation Quality of Life (PAC – QOL)</td>
<td>Burden</td>
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<tr>
<td>Wexner Continence Grading Scale</td>
<td>Symptoms</td>
<td>Reliable</td>
</tr>
<tr>
<td>St Marks’ Fecal Incontinence score</td>
<td>Screening</td>
<td>Psychometrically robust</td>
</tr>
<tr>
<td>Bladder control self-assessment questionnaire (B-SAQ)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Clinical Examination

- Inspection
- Digital Rectal Examination
  - Muscle tone
  - Ask patient to expel the examining finger
    - Anismus (sensitivity 77%, specificity 87%[2]).
    - Intussusception (detects a third of intussusception[2])
    - Rectocoele
- Vaginal Examination

Anorectal Physiology

- The function of the anal canal & rectum is assessed

Anorectal manometry –
  - rest
  - squeeze
  - push
  - RAIR

Sensory testing –
  - Balloon inflation
  - Timing & ability
  - Barostat
    - Compliance & capacity

Anorectal Physiology and Anismus

Dyssynergy has four patterns during anorectal manometry[2]:

- Anal Pressure
  - Normal relaxation on pushing
  - Paradoxical contraction on pushing

Little agreement on optimal method of diagnosis

- Anorectal manometry
- Sphincter electromyography (EMG) during voiding
- Balloon expulsion (timing and ability) during voiding

Grossi et al. 170 women, functional constipation vs age matched controls 90% of healthy volunteers had an ‘abnormal’ pattern use of manometry for diagnosis [6]

Chinorri et al. 286 patients and 40 controls good agreement balloon expulsion & anorectal manometry balloon expulsion & EMG [10]

Palti et al. 100 patients considerable disagreement balloon expulsion & anorectal manometry & evacuation proctography [10]
Barostat

- Rectal compliance & capacity
- Not routine practice
- Conflicting evidence

Gosselink et al. Normal compliance and sensation in all (with/without rectocele)(1)

Schouten et al. Reduced rectal compliance Impaired sensation(2)

Hicks et al. Rectal compliance and capacity higher with rectocele(3)

Sloots et al. Rectal compliance unaltered after rectocele repair(4)

Radiology

- Colonic Transit Studies
- Defaecatory Imaging
- Integrated Total Pelvic Floor Ultrasound

Colonic Transit Study

Fluoroscopic Defaecation Proctography

- Fluoroscopic defaecation proctography/ evacuatory proctography/ defaecography
- Dynamic investigation - rectal emptying
- Structural & functional
- Multi-compartmental

Fluoroscopic Defaecation Proctography

What is normal?

- Shorvon et al.
  - 47 volunteers
  - Rectocele - 17/20 nulliparous women
  - Intussusception – over half ≥ grade IV(1)

- Palit et al.
  - 46 volunteers
  - Rectocele - up to 3.9cm may be asymptomatic
  - Intussusception – ≥ 20% grade III(2)
• Rectocoele & barium trapping
  • More common in larger rectoceles

• Debate
  • Is barium trapping truly associated with symptoms?
  • More complete evacuation after evacuation in private
  • No association - barium trapping & response to surgery
  • Response of vaginal splinting may predict clinical significance

Intussusception and constipation
• Dvorin et al.
• 896 patients
• no symptoms predict obstructing intussusception on proctogram

Intussusception and faecal incontinence
• Plays important role in faecal incontinence
• 147 patients
• ↑ grade of intussusception - ↑ severity of incontinence

Substantial diagnostic and therapeutic effect and benefit regarding
• diagnostic confidence,
• resolving diagnostic conflict
• determining intended management

BUT should not solely be relied upon for treatment planning

Dynamic conditions or expulsion of USS gel
Sitting or supine
Structural and functional assessment of
• Anterior
• Middle
• Posterior

NB: Levator plate, anal sphincter complex if necessary

Sitting vs supine MRI (small studies) –

<table>
<thead>
<tr>
<th>Sitting</th>
<th>Supine</th>
</tr>
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<tbody>
<tr>
<td>Greater degree of pelvic floor laxity during dynamic imaging</td>
<td>All intussusceptions missed (though dynamic imaging only)</td>
</tr>
<tr>
<td>Significant difference in position of bladder, vagina and anorectal junction during dynamic imaging</td>
<td></td>
</tr>
<tr>
<td>BUT no difference in position of anorectal junction in defaecatory imaging</td>
<td></td>
</tr>
<tr>
<td>More enterocoeles seen</td>
<td>Less enterocoeles seen</td>
</tr>
<tr>
<td>Small rectocoeles seen</td>
<td>Small rectocoeles missed</td>
</tr>
<tr>
<td>BUT not necessarily superior for depicting clinically relevant findings</td>
<td></td>
</tr>
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</table>
Defaecation MRI vs Defaecation Proctography

<table>
<thead>
<tr>
<th>Author</th>
<th>n</th>
<th>Position</th>
<th>Rectal evacuation</th>
<th>Conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pilkington et al.</td>
<td>42</td>
<td>Supine</td>
<td>Yes</td>
<td>MRI – ↓intussusception – ↑anismus</td>
</tr>
<tr>
<td>Pennu et al.</td>
<td>82</td>
<td>Supine</td>
<td>Yes (35) No (47)</td>
<td>With contrast – similar Without contrast – MRI↓ abnormalities</td>
</tr>
<tr>
<td>Gellin et al.</td>
<td>10</td>
<td>Supine</td>
<td>Yes</td>
<td>Similar detection rates – prolapse</td>
</tr>
<tr>
<td>VinBrackaert et al.</td>
<td>35</td>
<td>Supine</td>
<td>No</td>
<td>MRI lower sensitivity</td>
</tr>
<tr>
<td>Schoenenberger et al.</td>
<td>15</td>
<td>Sitting</td>
<td>Yes</td>
<td>MRI superior</td>
</tr>
<tr>
<td>Healy et al. b</td>
<td>24</td>
<td>Supine</td>
<td>No</td>
<td>MRI more organ decent</td>
</tr>
<tr>
<td>Heelan et al.</td>
<td>10</td>
<td>Supine</td>
<td>No</td>
<td>MRI no rectal intussusception/ prolapse</td>
</tr>
<tr>
<td>Delemarre et al.</td>
<td>51</td>
<td>Prone</td>
<td>No</td>
<td>Examination for rectocoele corresponds with defaecation proctography but not MRI</td>
</tr>
</tbody>
</table>

• MRI underestimates posterior pathology
• Contrast expulsion is the key to detection of pathology
• Reason for underestimation probably difficulty evacuating contrast when supine

Defaecation MRI

What is normal?
(asymptomatic subjects – rectocele, pelvic floor hypermobility).

Decision making
Small studies - has clinical impact

Integrated Total Pelvic Floor Ultrasound

Endoanal, transperineal and transvaginal ultrasound

Routine
• anterior/ middle dysfunction
• endoanal - anal sphincters

Posterior dysfunction not routine

Integrated Total Pelvic Floor Ultrasound

Transperineal Ultrasound vs Defaecation Proctography

<table>
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<th>Author</th>
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<th>Findings</th>
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<tr>
<td>Beer Gabel et al.</td>
<td>103</td>
<td>Sensitivity good/excellent &amp; specificity high for rectocele, intussusception, enterocele, rectal prolapse.</td>
</tr>
<tr>
<td>Martello et al.</td>
<td>54</td>
<td>Agreement substantial/ perfect for rectocele, intussusception, enterocele No significant difference for anorectal angle</td>
</tr>
<tr>
<td>Terenina et al.</td>
<td>79</td>
<td>Agreement moderate/good - rectocele/ enterocele/fair - intussusception.</td>
</tr>
<tr>
<td>Beer Gabel et al.</td>
<td>62</td>
<td>Both methods accurate for cul-de-sac hernia Ultrasound more readily diagnoses peritoneocoele, upgrades enterocoele</td>
</tr>
<tr>
<td>Perosa et al.</td>
<td>37</td>
<td>High positive predictive value for rectocele, intussusception, rectal prolapse Poor agreement for rectocele (8 depth), intussusception, anorectal angle</td>
</tr>
<tr>
<td>Grasso et al.</td>
<td>63</td>
<td>Moderate agreement for rectocele, excellent agreement for intussusception, excellent concordance for ARA straining / rest ratio</td>
</tr>
<tr>
<td>Buzzanco et al.</td>
<td>114</td>
<td>High specificity - Intussusception and rectocele. Transperineal ultrasound confirm rectocele, intussusception and enterocoele</td>
</tr>
<tr>
<td>Beer Gabel et al.</td>
<td>33</td>
<td>Good agreement for rectocele, intussusception, rectal prolapse. Ultrasound more likely to make multiple diagnoses No difference in measurement of anorectal angle, anorectal junction position</td>
</tr>
</tbody>
</table>

* Ultrasound is a suitable screening tool for defaecatory dysfunction

In summary …
Anorectal Physiology

**Advantages**
- Bedside test
- Minimally invasive
- Physiological and functional
- Biofeedback tool

**Useful in diagnosis of...**
- Neurological conditions
- Muscle tone, sphincter injury, fistulas
- Anismus
- Increased rectal capacity

**Disadvantages**
- May underestimate pathology

**Unhelpful in diagnosis of...**
- Functional & anatomical assessment of defaecatory techniques
- Sitting
- Expulsion contrast
- Visual biofeedback


Integrated Total Pelvic Floor Ultrasound

**Advantages**
- Dynamic multicompartmental assessment without contrast
- Safe, cheap, portable,
- One-stop clinic
- Visual biofeedback
- Screening tool

**Useful in diagnosis of...**
- Muscle tone, sphincter injury, fistulas
- Anismus
- Increased rectal capacity

**Disadvantages**
- User dependent, training, experience
- Spinal surgical
dry lateral

**Unhelpful in diagnosis of...**
- Physiological examination


MRI Proctography

**Advantages**
- Functional & anatomical assessment of defaecatory techniques
- Open configuration magnets – sitting
- Expansion of contrast
- Multicompartmental
- Soft tissue
- No radiation

**Useful in diagnosis of...**
- Trapping of gel in rectocoele
- Effects of vaginal splinting & correct defaecatory techniques

**Disadvantages**
- Expulsion of rectal gel not routine
- Anismus
- Muscle tone, sphincter injury, fistulas
- Anismus
- Increased rectal capacity


Summary

No one perfect assessment tool

**Combination**
- *clinical review*
- *physiological examination*
- *radiological investigation*

Determine pathophysiology, treatment planning

Future developments - ? imaging with simultaneous physiological assessment.

**In summary...**

**MRI Proctography**

**Disadvantages**
- Available, practical
- Cost
- Functional & anatomical assessment of defaecatory techniques
- Sitting
- Expulsion contrast
- Visual biofeedback

**Useful in diagnosis of...**
- Posterior compartmental dysfunction
- Barium trapping in a rectocoele
- Effect of vaginal splinting & correct defaecatory techniques

**Unhelpful in diagnosis of...**
- No consistency in technique
- Debate
- *normal parameters
- Implications of findings
- Radiation
- Multicompartmental assessment – contrast

**Advantages**
- Available, practical
- Biofeedback tool
- Soft tissue
- Screening tool for obstructed defaecation
- One stop clinic
- Safe, cheap, portable,
- Dynamic multicompartmental assessment
- Effective visual biofeedback

**Useful in diagnosis of...**
- Defaecation Proctography
- Multicompartmental anatomical prolapse
- Splinting effects of probe/normal anatomy/prevent Valsalva

**Disadvantages**
- User dependent, training, experience
- Limited access to open configuration magnets
- Pathology may be underestimated due to noise
- No expulsion of rectal contrast

**Expulsion of rectal prolapse**

- If no rectal expulsion – intussusception
Tackling the Taboo: Defecatory Dysfunction from the Urogynecologist’s Perspective
Heidi W. Brown, MD, MAS
Assistant Professor, Urogynecology
University of Wisconsin-Madison
School of Medicine and Public Health
Departments of Obstetrics & Gynecology and Urology

Overview
• Definitions
• Concomitant Symptoms
• Evaluation
• Treatment

Joint Terminology
• Straining to defecate: need to make intensive effort (by abdominal straining or Valsalva) to initiate, maintain, or improve defecation
• Splinting: need to digitally replace vaginal prolapse / apply manual pressure to vagina / perineum
• Manual evacuation: placement of fingers in the rectum to evacuate stool
• Feeling of incomplete evacuation: rectum does not feel empty after defecation
• Diminished rectal sensation: decreased / absent sensation of contents in the rectum

Functional Constipation (Rome III)
1. ≥2 symptoms w/ ≥ 25% of defecations over last 3 mo:
   • Straining
   • Lumpy or hard stools
   • Sensation of incomplete evacuation
   • Sensation of anorectal obstruction / blockage
   • Manual maneuvering required (vaginal or rectal)
   • Fewer than 3 defecations / week
2. Loose stools rarely present without use of laxatives
3. Insufficient criteria for irritable bowel syndrome
When you have a hammer...

Concomitant Symptoms

- Urinary incontinence
- Urinary urgency
- Urinary frequency
- Urinary retention
- Fecal incontinence
- Pelvic organ prolapse

Urinary Symptoms & Bowel Dysfunction

- Stool in rectum can press on bladder → urgency, frequency
- Incontinence can be related to pressure, retention, loss of pelvic floor muscle coordination
- Retention from urethral occlusion or underlying nerve dysfunction

Bowel Leakage & Defecatory Dysfunction

- Stool in rectum can press on bladder → urgency, frequency
- Incontinence can be related to pressure, retention, loss of pelvic floor muscle coordination
- Retention from urethral occlusion or underlying nerve dysfunction

Prolapse and Defecatory Dysfunction

- Rectocele
- Enterocele

Association versus causation

- Straining → prolapse
- Prolapse → straining
- Constipation → urinary incontinence → fluid restriction
- Urinary incontinence → fluid restriction → constipation

Roommates in a small apartment
Overview

- Definitions
- Concomitant Symptoms
- Evaluation
- Treatment

Urogynecologist’s Evaluation

- History
  - Duration, bother, mediators and triggers
  - Prior therapies and results
  - Alarm symptoms \(\rightarrow\) referral
- Validated Instruments
  - Pelvic Floor Distress Inventory (PFDI)
  - Pelvic Floor Impact Questionnaire (PFIQ)
  - Bristol Stool Scale
- Physical Exam
- Additional testing?

Pelvic Floor Distress Inventory

Pelvic Floor Impact Questionnaire (PFIQ):
A validated, condition-specific Quality of Life instrument

Assessment of Stool Consistency

Physical Exam

- Neurological assessment (S2-4)
- Abdominal exam
- Bimanual exam
- Pelvic organ prolapse
- Pelvic floor muscle tone
- Rectal exam (including IAS, EAS tone)
- Cough stress test
- Post-void residual
Minimum assessment of bladder function

Reduce bulge & observe urethra with full bladder
Enterocoele or rectocele can prevent urine leakage
Post-void residual

Defecography if symptoms ≠ exam

Prior to defecation:
With attempt to defecate:

Black arrow: vagina
White arrow: rectum
Rectocele

Overview

- Definitions
- Concomitant Symptoms
- Evaluation
- Treatment

The Urogynecologist’s Management:

Fiber & fluid – 25-35 g/day, referral to dietitian
Patient education and diary, consider pessary
Medications (laxatives – polyethylene glycol)
Referrals (pelvic floor physical therapy, GI, health psych, nutrition/dietitian)
Surgical correction (only for appropriate candidates)

Schedule follow up to assess response to therapies
Urogyn Treatment Options

If not bothered: Nothing!
If bothered: Knee injury analogy
  • Physical therapy
  • Brace (pessary)
  • Surgery

Balance risks with likelihood that interventions will improve symptoms

Eclipse vaginal bowel control system

- N = 61 subjects fitted / 110 enrolled
- 6 episodes / week → 1 episode per week (1 month)
- No device-related serious adverse events
- Pelvic cramping and discomfort (esp during fitting)

Surgical repair

1. Offered if symptoms persist after other treatments fail.
2. Posterior compartment prolapse with native tissue vaginal posterior repair has success rates for anatomic restoration of 76–98% for traditional posterior colporrhaphy and 56–100% for site-specific repairs.
3. No role for biological or synthetic grafts in the posterior compartment.

Post-op: avoid constipation / straining

Conclusions & Recommendations

- Symptom tracking enables self-directed, personalized effort and evaluation of results
- Best outcomes involve multidisciplinary approach to optimize various mechanisms contributing to symptoms

Pharmacological management of PFDD

Valentina Passananti, MD
University College Hospital, London UK
Lifestyle measures

Laxatives

Biofeedback

Prokinetic or secretagogue

Others

Treatments

Modest effect of exercise

Several studies link exercise with reduced risk:
Community survey of 1,699 Japanese
>4 h/day walking reduces risk OR 0.46 (0.2-1.0)
Nakaji et al. Eur J Nutr 2002;41(5):244-8

One RCT of exercise in IBS-C
56 IBS randomised to usual care or 12 weeks exercise programme
Primary endpoint: QOL showed no change
Significant improvement in constipation

In patients with chronic idiopathic constipation
moderate physical activity 1 h/d improves stool consistency
Dr Schroyer AM et al. Gastroenterol 2005

Are current laxative options effective for chronic constipation?

16–40% of those with constipation use laxatives
Symptoms persist despite laxative use

Effect of fiber on Constipation Subtypes

149 patients with chronic constipation (mean age 53 yr, range 18-81 yr, 84% women)
Plantago ovata seeds, 15-30 g/day, for a period of at least 6 wk

Approximately 2000 adults each from: United States, US; United Kingdom, UK; France, FR; Germany, DE; Italy, IT; Brazil, BR; South Korea, SK
Ward et al. Aliment Pharmacol Ther 2006;23(9):1615-23

Severe water restriction reduces stool weight.
RCT in volunteers reducing fluid intake from 2500 ml to <500 ml
Results: Stool weight fell from 1.290 to 940 g/wk, p<0.05

No evidence of benefit with additional water if already well hydrated.
RCT of 108 children with CC randomised to:
No change
50% increase in fluid intake with water
50% increase in total fluid intake as soft drinks
Results: No change in stool frequency of consistency

Laxative options for chronic constipation

Agent and mechanism of action

Example

Therapeutic response

Bulk ing agent

• Increase stool volume making it easier to pass

• Psyllium

• Decreased gut transit time and increased stool frequency

Stool softener

• Soften stool making it easier to pass

• Docusate

• Less effective than psyllium in improving bowel movements and stool output

Chronic laxative

• Increase fluids within the intestine making stools softer and easier to pass

• Lactulose

• Decreased transit and reduced faecal impaction

Stimulant laxative

• Stimulate muscles helping them to move stools and waste products along the large intestine

• Bisacodyl

• Increased frequency of bowel movements

• Sennoside

• Increased frequency of bowel movements in elderly patients

Although 16-40% of patients use laxatives, symptoms persist despite laxative use in up to 70% of patients

Symptom free
Improved
No effect

30%
30%
55%

56%
85%
31%
21%

Defecatory Disorder
Slow Transit
Normal Transit
Total Cohort


Current therapeutic options for chronic constipation

<table>
<thead>
<tr>
<th>Agent and mechanism of action</th>
<th>Example</th>
<th>Therapeutic response</th>
</tr>
</thead>
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<tr>
<td>Bulking agent</td>
<td>Psyllium</td>
<td>Decreased gut transit time and increased stool frequency</td>
</tr>
<tr>
<td>Stool softener</td>
<td>Docusate</td>
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Osmotic agents: Lactulose

Slow transit success (needing ≤1 additional laxative during 3-week treatment period) with lactulose

Reduced faecal impaction after 2 months of lactulose

Osmotic agents: Polyethylene glycol

Higher stool frequency with PEG vs lactulose after 1 month: elderly

Less straining with PEG vs lactulose after 1 month: elderly

Bulking agents

Decreased total gut transit time after 1 month of psyllium in patients with dyssynergic defaecation

Increased stool frequency after 2 months of psyllium in patients with normal transit constipation

Stool softeners

Docusate appears less effective than psyllium in improving bowel movements and stool output after 2 weeks in patients with normal transit constipation

agent and mechanism of action

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<td>Sennoside</td>
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Symptoms persist despite laxative use in up to 70% of patients.

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Fibre and bulking agents

Salts, sugars and osmotic agents

Stool softening & lowers surface tension of stool

Peristalsis

Fibre and bulking agents

Docusate and stool softeners

Serotoninergic agents

Prucalopride

At doses of 2 mg represents a safe and effective treatment option in subjects with CC. This is the drug that have been studied with the longest follow-up, in which only 10% of patients abandoned the treatment due to adverse effects.

Lubiprostone

Though FDA-approved for use in CC, IBS, and OIC, it is not currently approved by the EMA. It is a drug that is generally safe at a dose of 24 mcg, according to the results of clinical trials undertaken at 4 weeks.

Linaclotide

It is a non-absorbable drug which has been shown to be safe and effective in the treatment of CC and IBS at doses of 145 and 290 mcg, respectively.

Tailoring laxatives to the patient, based on their symptoms and diagnosis

Prosecretory agents

Linaclotide

It is a non-absorbable drug which has been shown to be safe and effective in the treatment of CC and IBS at doses of 145 and 290 mcg, respectively.

Placebo

Prucalopride 2 mg

*P<0.0001 vs placebo

More frequent bowel movements with bisacodyl vs placebo in patients with occasional missed days

More frequent bowel movements with semisone plus bulbus laxative in elderly patients (n=30)

CSBM, complete spontaneous bowel movement

Stool softener and stimulant laxative

Larinaclotide or bulking agent

Increased frequency of bowel movements

Increased frequency of bowel movements in elderly patients

Episodic hard stool

Episodic reduced frequency

Slow transit constipation

Difficulty evacuating

Megarectum or megacolon

If no improvement:
• Increase dose
• Rational combination e.g. stool softener and stimulant laxative or bulking agent

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Episodic reduced frequency

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Difficulty evacuating

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Episodic hard stool

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Slow transit constipation

Difficulty evacuating

Megarectum or megacolon

If no improvement:
• Increase dose
• Rational combination e.g. stool softener and stimulant laxative or bulking agent
Suppositories

Mainly for patients with normal urge sensation where rectal evacuation is problem
• Typically glycerine suppositories first-line followed by bisacodyl suppositories
Only weak evidence supporting their use in chronic constipation
WGO Practice Guideline (2007) recommends suppositories as an osmotic laxative option (glycerin) or where a fast-acting stimulant laxative is needed
• WGO Global Guideline (2011) makes no recommendations on the use of suppositories

Surgical treatment of PFDD

Conservative
• maximal medical treatment
• biofeedback or pelvic floor retraining, rectal irrigation
Surgery
• failed conservative treatments
• underlying structural abnormality – e.g. rectocoele
• vaginal, transanal, abdominal or laparoscopic
• Significant recurrence and complication rates

• Surgery
  • Vaginal
    • Transvaginal rectocoele repair
  • Perineal
    • Transperineal rectocoele repair
  • Anal
    • Prolapse repair
    • STARR
  • Abdominal or laparoscopic
    • Prolapse repair
    • Ventral mesh rectopexy

Surgical treatment of PFDD

Surgery for Rectocoele

Transvaginal
  Posterior repair + Sphincteroplasty
  Site specific repair

Transanal
  Delormes
  Intral/subanal Deformes

Perineal
  Ventral mesh Rectopexy
  Laparoscopic

Excision / reduction of redundant tissue
buttressing the R/V septum + / - sphincteroplasty / repair
Results of Rectocoele Repair

<table>
<thead>
<tr>
<th>Author</th>
<th>n</th>
<th>Improved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Khubchandani et al (1983)</td>
<td>59</td>
<td>63%</td>
</tr>
<tr>
<td>Siproudhis et al (1993)</td>
<td>26</td>
<td>76%</td>
</tr>
<tr>
<td>Janssen &amp; van Dijke (1994)</td>
<td>76</td>
<td>59%</td>
</tr>
<tr>
<td>Mellgren et al (1995)</td>
<td>25</td>
<td>52%</td>
</tr>
<tr>
<td>Van Dam et al (1996)</td>
<td>75</td>
<td>71%</td>
</tr>
<tr>
<td>Karbom et al (1996)</td>
<td>34</td>
<td>79%</td>
</tr>
<tr>
<td>Khubchandani et al (1997)</td>
<td>105</td>
<td>82%</td>
</tr>
<tr>
<td>Van Laarhoven et al (1999)</td>
<td>22</td>
<td>73%</td>
</tr>
<tr>
<td>Lamah et al (2001)</td>
<td>24</td>
<td>75%</td>
</tr>
<tr>
<td>Boccasanta et al (2002)</td>
<td>30</td>
<td>80%</td>
</tr>
<tr>
<td>Murthy et al (1996)</td>
<td>31</td>
<td>92%</td>
</tr>
</tbody>
</table>

(Selective policy)

Overall: 73%

Ventral Mesh Rectopexy

- External rectal prolapse
- Internal organ prolapse / descent
- Intra rectal intussusception
  - ? Incontinence
  - ? SRUS
  - ? Pelvic pain

- External rectal prolapse
- Internal organ prolapse / descent
- Intra rectal intussusception

- ? Incontinence
- ? SRUS
- ? Pelvic pain
VMR

- Rectocele
  - Improvement in vaginal discomfort 66%
- Reduction in ODS score 40%
  - 86% patients improvement
- Ext Rectal Prolapse
  - Recurrence 2% - 4%
- Resolution / Improvement constipation 72% - 84%
- New Constipation 2%

Types of prolapse

- Full Thickness External Prolapse
  - Low Take Off
  - High Take Off
    - (external protrusion of intra-rectal intussusception)

Intra-rectal Intussusception

Rectal wall prolapse (rectocele)

Perineal approaches

<table>
<thead>
<tr>
<th>Proctosigmoidectomy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delorme’s operation</td>
</tr>
<tr>
<td>Described in 1900</td>
</tr>
<tr>
<td>Resection of sleeve of mucosa with plication of remaining muscle and suture of bowel mucosa to anal mucosa</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Delorme’s procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of studies (1979-2003)</td>
</tr>
<tr>
<td>No. pts</td>
</tr>
<tr>
<td>Recurrence (%)</td>
</tr>
<tr>
<td>Continence improved (%)</td>
</tr>
<tr>
<td>14</td>
</tr>
<tr>
<td>487</td>
</tr>
<tr>
<td>21</td>
</tr>
<tr>
<td>71</td>
</tr>
</tbody>
</table>

Prolapse Surgery

- Abdominal procedure
  - Ventral Mesh Rectopexy
  - Sutured Rectopexy
  - Resection Rectopexy
- Perianal procedures
  - Delorme’s procedure
  - Altmeier’s

Full Thickness External Prolapse

- Low Take Off
- High Take Off
  - (external protrusion of intra-rectal intussusception)
Perineal rectosigmoidectomy (Altmeier’s)

<table>
<thead>
<tr>
<th>No. of studies (1971-1999)</th>
<th>No. pts</th>
<th>Recurrence (%)</th>
<th>Continence improved (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>558</td>
<td>17</td>
<td>84</td>
</tr>
</tbody>
</table>

STARR - Indications

- Prolonged evacuation or repeated straining
- Excessive time spent on the toilet
- Frequent calls to defaecate prior to or following evacuation
- Incomplete evacuation
- Laxative and or suppositories/enema use
- Vaginal prolapse
- Pelvic pressure, rectal discomfort, and perineal pain

STARR - Indications

- STARR (surgery) corrects anatomical abnormality
- STARR: symptomatic patients with abnormality

STARR - Outcome

Improvement ODS and structure in >90% of patients

European STARR registry

- 2,224 patients, 12-month follow-up
- Significant improvement
  - Obstructive defaecation score (15.8 vs. 5.8, P<0.001)
  - Symptom severity score (15.1 vs. 3.6, P<0.001)
  - Quality of life

Exclusion Criteria

- External full-thickness rectal prolapse
- Perineal infection (abscess, fistula)
- Recto-vaginal fistula
- Inflammatory bowel disease (including proctitis)
- Radiation proctitis
- Anal incontinence (Cleveland Clinic Florida; Wexner Score > 7)
- Anal stenosis precluding insertion of the stapling device
- Enterocoele at rest

Significant gynaecological or urinary pelvic floor abnormality requiring combined treatment
- Presence of foreign material adjacent to the rectum (e.g. mesh)
- Absence of anatomical or physiological abnormality associated with ODS
- Intra-operative technical factors which preclude the safe execution of the operation
- Significant rectal or perirectal fibrosis
- Prior rectal anastomosis

STARR - Complications

Overall - 36%

- Urgency 20%
- Bleeding 5%
- Sepsis 4.4%
- Staple line complications 3.5%
- Incontinence 1.8%
- Pain <2%
- Rectal necrosis <1%
- Rectovaginal fistula <1%
Surgical treatment of PFDD

• Clear understanding of pathology
• Appropriate decision with each patient
• If any surgical options are available
• Most appropriate for their symptoms

Affiliations to disclose:

Funding for speaker to attend:

- [x] Self-funded
- [ ] Institution (non-industry) funded
- [ ] Sponsored by:

Aims of this presentation

• What is Biofeedback Therapy?
• What does the literature say?
• Assessment pre Biofeedback
• Biofeedback therapy techniques
• Outcome of Biofeedback
• Conclusion
What is Biofeedback?

Biofeedback (BFB) therapy is an instrument-based learning process that is based on "operant conditioning" techniques.

The governing principal is that any behavior when reinforced its probability of being repeated and perfected increases several fold.

Biofeedback first described in 1981 as the "Light at the end of the tunnel".

Goals of Biofeedback

- To restore a normal pattern of defecation
- To correct the dyssynergia or incoordination of the abdominal, rectal, puborectalis and anal sphincter muscles
- To enhance rectal sensory perception in patients with impaired rectal sensation
- To strengthen the pelvic floor musculature

Biofeedback Therapy nowadays?

A combination of all of these therapies will help the patient to defecate effectively. Also, evacuating regularly may also stimulate gut transit.

References:
What does the literature say?

- Currently there is insufficient evidence regarding the efficacy and safety of biofeedback for the management of people with pelvic floor defecatory dysfunction (PFDD).
- There is low or very low quality evidence from single studies to support the effectiveness of biofeedback for the management of PFDD.
- However, the majority of trials are of poor methodological quality and subject to bias.
- Further well-designed RCT’s with adequate sample sizes, validated outcome measures and long-term follow-up are required to allow definitive conclusions to be drawn.

Biofeedback therapy is recommended:
- For the short term and long term treatment of constipation with dyssynergic defecation (Level I, Grade A).

Assessment pre BFB

- History taking
  - Standardized assessment tools
  - Outcome measures – Thompson score
  - Bowel diary
- Observation and Physical examination
  - Digital Rectal Examination
    - Sensitivity of 75% and Specificity of 87% for detecting dyssynergia!
  - Pelvic floor muscle assessment via PV and/or PR
- Further tests and investigations
  - When basic treatment has failed e.g. education, fluid and fibre intake, review of medication, etc.

So, what do we do during Biofeedback sessions?

The Clinician's Toolbox

What are the main symptoms to treat in BFB?

- Straining
- Incomplete evacuation
- Urinary and/or genital symptoms
- Pain
- Digital assistance
- Post defecation sitting
- Fragmented defecation
- Extended time on the toilet
- Decreased bowel frequency

75% Improvement in symptoms

Rao et al. (2016) Gastroenterology 150:1430–1442
75% Improvement in symptoms

Messelink B et al. (2005) Neurourology and Urodynamics 24:374-380
Tantiphlachiva et al. (2010). Clin Gastroenterol Hepatol. 8:955–960
Biofeedback Therapy

**Lets get the basics covered!**
- Education
- Defecation dynamics
- Dietary advice
- Physical Activity
- Medication
- Pelvic floor muscle training

**Emotional support and/or Therapeutic Alliance and Behavioral support!**

**The more fancy treatment!**
- EMG Biofeedback
- Rectal sensation and balloon expulsion training
- Neuromuscular electrical stimulation
- Perineal splinting/support: Femmeze
- Transanal irrigation

**Education is the key to success!!!**
- Discussion of digestive tract, function and the defecation process
  - If possible with models/pictures
- Normalize bowel frequency according to patient’s symptoms and pathology
  - Demystify the myth of the ‘once a day rule’
- Discuss previous treatments and failures
- Discuss results of investigations and the relationship to patients symptoms

Bowel training

- Regular attempt following breakfast (stimulation of gastro-colic reflex) or after exercise
- Privacy and time
- Avoid ignoring the urge to defecate
- Strain for no more than 5-10 minutes
- During attempted defecation, they must be instructed to push at a level of 5 to 7, assuming level 10 as their maximum effort of straining
- Avoid prolonged sitting
- Advise to stop digitating anally

Defecation dynamics: what should happen?

- Defecation technique:

Dietary Advice

- Trials evaluating the effect of increased liquid intake in patients with PFDD are lacking, and there is no evidence that bowel evacuation difficulties can be improved by increasing oral fluid intake, unless the patient is dehydrated.
- Recent studies concluded that psyllium, a natural fiber supplement increases stool frequency and gave this compound a grade B recommendation, but there was insufficient data to make a recommendation for the synthetic polysaccharide methylcellulose, or calcium polycarbophil or bran in patients with bowel evacuation difficulties.
- Any eating disorder should be managed accordingly
- **ONE RCT:** 25 grms of fibre + increased fluid intake improves chronic constipation in patients


Physical Activity

• Physical activity can increase colonic transit time and reduce bowel evacuation symptoms in elderly subjects

  However...

• Despite the recommendation to patients with PFDD of regular physical activity there is no evidence that bowel evacuation difficulties can be improved by an increased in physical activity.


Medication

• Laxatives
  • IDEALLY THEY SHOULD BE DISCONTINUED!!

• Review medication that may aggravate bowel dysfunction (e.g. pain medication/narcotics/calcium channel blockers)

• Initial stages of biofeedback therapy the use of glycerin or bisacodyl suppositories can be used as an evacuatory aid if bowels not opened for 3 days


Pelvic floor muscle training

Chronic straining  ➔ Pudendal Neuropathy  ➔ Pelvic floor weakness

• PFMT
• Exercise programs should follow the principles of:
  - Specificity, Overload, Progression, Maintenance and reversibility
• For a minimum of 5 months
• Include strategies to adhere to the exercise regime

Be et al (2007) Evidence-Based Physical Therapy for the Pelvic floor

Neuromuscular Electrical Stimulation (EMG BFB)

• NMES is aimed at training the pelvic floor and external anal sphincter muscles by producing a series of electrically induced contractions, to improve strength, sensation and function

• Home stimulator
• Patients should join in with the electrically induced contraction.


Pelvic floor muscle Trigger Points

• Travell and Simons (1992)
  1) Focal tenderness
  2) Reproduction of ‘familiar’ pain
  3) Predicted referral pattern
  4) Local twitch response
  5) Painful limited range of movement
  6) Follow the same principles of TrP release
    - Firm pressure
    - Contract-relax technique

EMG BFB

• To teach patients to relax their pelvic floor muscles when straining
• This skill can be taught by providing visual feedback regarding anal canal pressure or EMG activity
• The subject should be seated on a commode with the manometry/EMG probe in situ.
• The monitor display of the pressure/EMG changes from the rectum and anal canal provides visual feedback and facilitates learning.
• First, their posture and breathing techniques during attempted defecation are corrected.
• After few sessions the patient is encouraged to perform these maneuvers without visual or verbal feedback

Biofeedback with sEMG

Red indicates an elevated resting tone
Green indicates normal resting pelvic floor tone

Rectal Sensation Training

To improve Rectal hyposensitivity and promote better awareness of stool.

- This is performed by intermittent inflation of the balloon in the rectum.
- The goal is to teach the subject to perceive a lower volume of balloon distention but with the same intensity as experienced with a higher volume.
- With repeated inflations and deflations newer sensory thresholds can be established.

Rose S (2014) Constipation: A Practical Approach to Diagnosis and Treatment

Balloon expulsion training

Simulated Defecation Training: educate patient to practice defecation and expulsion of a lubricated, inflated balloon.

Rao et al. (2014) Gastroenterology 150:1430–1442
Rose S (2014) Constipation: A Practical Approach to Diagnosis and Treatment

Abdominal Massage


Perineal splinting/support: Femmeze

- No literature available regarding the effectiveness of this gadget
- Anecdotal information suggests that patients have mixed feelings about using it when PFDD is present

Femmeze

Aims to reduce the rectocele in order to improve the rectal evacuation.
‘Emotional support’ or ‘Therapeutic alliance’?

Good relationship between the clinician and patient is considered central to the therapeutic process.

Commonly referred to as the therapeutic alliance, helping alliance, or working alliance.

Positive alliance is associated with improved health outcomes such as depression, anxiety, mood, interpersonal problems, and general psychological functioning.

Trust is seen as a global attribute of treatment relationships, encompassing satisfaction, communication, competency, and privacy, and is vital to cooperation with treatment and physician recommendations.

End of Biofeedback Therapy

- The number of sessions and frequency of sessions should be customized for each patient.
- Each session takes 45 mins, and on average, 4 to 6 training sessions are required.
- Patients are encouraged to practice exercises at home.
- Biofeedback therapy is discontinued when patients demonstrate:
  - consistent coordinated pattern of defecation with anal relaxation;
  - improved stooling habit; and
  - normal balloon expulsion time.
- If no improvement, the patient should be referred back to the Colorectal Surgeon or back to the GP.

Can we predict outcome of BFB?

Factors That Predict Outcome of Biofeedback Therapy in Constipation With Dyssynergic Defecation (DD)

Patcharatrakul et al (2016) AGA Abstract

<table>
<thead>
<tr>
<th>Bowel satisfaction score (VAS 0-100), mm</th>
<th>Session (n=77)</th>
<th>Failure (n=50)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>62±15</td>
<td>60±14</td>
<td>NS</td>
</tr>
<tr>
<td>Gender (male/female)</td>
<td>56/21</td>
<td>49/31</td>
<td>NS</td>
</tr>
<tr>
<td>Bowel satisfaction score (VAS 0-100), mm</td>
<td>91±21</td>
<td>170±33</td>
<td>0.002</td>
</tr>
<tr>
<td>Digital maneuvers to facilitate defecation, n(%)</td>
<td>20(26.6)</td>
<td>5(10)</td>
<td>0.03</td>
</tr>
</tbody>
</table>

- Bowel evacuation time (s) 75 (68-90) vs 94 (81-100) NS
- Rectal evacuation threshold (mm) 281 (180-350) vs 289 (180-350) NS
- Distress to defecate threshold (cm) 100 (100-120) vs 100 (100-120) NS
- Rectal hypotonicity (%T) 29 (9-56) vs 31 (9-56) NS
- Rectal hypotonicity, %T 90 (40-100) vs 90 (40-100) NS

Dyssynergic defecation type (%T)
- Type 1 20 (30)
- Type 2 12 (20)
- Type 3 12 (20)
- Type 4 16 (20)
- Type 5 16 (20)
- Type 6 16 (20)
- Type 7 16 (20)
- Type 8 16 (20)
- Type 9 16 (20)
- Type 10 16 (20)

Conclusions: Five biofeedback sessions are more effective than continuous polyethylene glycol for treating PFD, and benefits last at least 2 years. Biofeedback should become the treatment of choice for this common and easily diagnosed type of constipation.

Conclusion – Take home messages

- Biofeedback therapy is a labor-intensive approach but has NO ADVERSE EFFECTS:
  - It should be first line management for PFDD!
- Identification of patients is the key to success of BFB
- Only offered in a few centers around the world
- Despite being effective in over 75% of patients, the mechanism of action is still unclear
- We should aim for a standardization of protocols and equipment

- There is marked variation in practice, training and supervision of BFB therapists in the UK

Aims of this presentation

• What is Trans-anal Irrigation Therapy?
• Benefits, Indications and Contraindications
• Complications of TAI
• When should TAI be considered?
• Patient selection/investigations required/initiating treatment
• What does the literature say?
• Rectal Irrigation systems
• Rectal Irrigation – Decision Matrix
• Trouble shooting

Trans-anal irrigation therapy

• Trans-anal irrigation therapy (TAI), commonly known as Rectal irrigation, involves facilitation of bowel evacuation by instilling water into the rectum via the anus, using either a balloon catheter or cone delivery system.


http://www.jacmedical.com/colon_articles/The%20history%20of%20colonic%20hydrotherapy.pdf

History of TAI

• Reintroduced into modern medicine in the 1980’s
• Reintroduced into modern medicine in the 1980’s as a treatment of neurological bowel dysfunction (Spina Bifida, MS,...)
• And more recently (early 2000’s) to treat Pelvic floor defecatory dysfunction (functional bowel dysfunction)!

TAI in modern medicine

In a 1637 edition of the UAMA, Dr. Adeq reported that in over forty thousand gastrointestinal disease cases, he had used surgery in only twenty cases. The rest were helped as a result of cleansing the bowel, diet, and exercise.
How does TAI work?

- TAI assists bowel evacuation by introducing warm water into the rectum and colon via the anus and using a balloon catheter and/or cone system;
- The balloon catheter or cone delivery system is attached via a plastic tube to an irrigation bag holding up to 1.5 liters of water although typically only 0.5–1 liter is required;
- Alternatively a low-volume system consisting of a hand pump and a cone may be employed. This will normally deliver up to 80mls of water;
- The water is subsequently evacuated into the toilet with the content of the descending colon, sigmoid colon and rectum.

Benefits of TAI

- The regular use of TAI allows to re-establish and control bowel function in patients with bowel dysfunction. This enables patients to develop a bowel routine by choosing the time and place of evacuation.
- In patients with PFDD, regular evacuation of the rectosigmoid region can accelerate transit through the entire colon and therefore helps to prevent blockages.
- Alternative to surgery.
- Improving confidence and quality of life in patients!

Indications of TAI

- Pelvic floor defecatory dysfunction (PFDD): Obstructed defecation syndrome (ODS), Functional defecation disorder (FDD), Chronic idiopathic constipation (CIC), and Constipation-predominant irritable bowel syndrome (IBS-C).
- Idiopathic Post-traumatic Constipation
- Neurological Bowel dysfunction (MS, SCI, Spina bifida...)

Contraindications

**Absolute contraindications:**

- Anal or rectal stenosis
- Active inflammatory bowel disease
- Acute diverticulitis
- Colorectal cancer
- Within 3 months of rectal surgery
- Within 4 weeks after endoscopic polypectomy
- Ischaemic colitis

**Relative contraindications/Precautions:**

- Severe diverticulosis
- Long-term steroid medication
- Radiotherapy to the pelvis
- Prior rectal surgery
- Faecal impaction
- Painful anal conditions
- Current or planned pregnancy
- Bleeding diathesis or anti-coagulant therapy
- Severe autonomic dysreflexia
- Change of bowel habit
- The use of rectal medication
- Children below 3 years of age
- Severe heart/liver disease
Complications – Bowel perforation

• Bowel perforation is a rare complication of TAI
  • DRE/Patient evaluation is mandatory pre TAI!

• The patient usually experiences:
  • Severe/sustained pain in the abdomen/back
  • Severe anal bleeding
  • Patient should be advised to seek immediate medical help!

• In order to minimize the risk:
  • Training the patient + Discuss symptoms of bowel perforation
  • Regular contact + contact details of the health professional that provided the TAI system


When should TAI be considered?


Patient selection and work up!

• The patient should be known to the health care professional initiating TAI
  • Pathophysiology and clinical indication of TAI
  • The escalation of treatment pre TAI is an important part of deciding which method of TAI
  • Complying with clinical guidance and clinical governance
  • Psyche and Motivation!
  • Patient’s manual dexterity

Patient assessment pre TAI

• Review bowel management and ensure that the appropriate escalation of treatment has been completed!

• Assessment by a clinically competent TAI health care professional:
  • Symptoms up to date and comparison to the first visit with an appropriate outcome measure
  • Review PMHx, DHx and SurgHx=check contraindications!
  • Impact on QoL/ADL’s
  • DRE+VE+Abdominal palpation
  • Bowel diary
  • ‘Home made treatments’ (coffee enemas, colonic irrigation, etc...)
**Does the patient require any investigations pre TAI?**

- Necessary to exclude RED FLAGS!
  - Triage clinic in our unit
- Depending on primary referrer
  - GP/Family doctor versus Colorectal Surgeon
- Bowel investigations:
  - Colonoscopy?
  - Flexible sigmoidoscopy?
  - Anorectal physiology?
  - Endoanal/Pelvic floor ultrasound?
  - Transit studies?

**Initiating treatment**

- **PRACTICE-PRACTICE-PRACTICE-PRACTICE-PRACTICE!!!**
- Patient training
  - Explain rationale and procedure for the use of TAI
  - “Make it personal!”: correlation of the benefit of using TAI with the patient’s symptoms and the alternative of not using TAI
  - Ensure the patient provides consent!
  - The patient should demonstrate “competence in clinic”
  - Establish a routine for the patient
    - Is there a better time? What about making use of the gastrocolic reflex?
- Discuss frequency of TAI
  - Ideally, daily use and decrease to alternate days when patient confident with the use and experienced benefit of TAI (individual to each patient)
- Further encouragement of an appropriate diet and fluid intake with a reminder of defecation dynamics

**Ongoing support/adherence to the TAI**

- Discuss use of water and number of pumps required with each TAI system
- Set up realistic expectations
  - It may take a few weeks for an optimum benefit of TAI
- Discuss expected complications with the TAI system and how to resolve them
- Discuss the use of laxatives as an adjunct to TAI depending on initial diagnosis and indication of TAI

**What does the literature say?**

**Trans-anal irrigation therapy to treat adult chronic functional constipation: systematic review and meta-analysis**

**Conclusions:** The reported success rate of irrigation for functional constipation is about 80%, comparable to or better than the response seen in trials of pharmacological therapies. TAI is a safe treatment benefiting some patients with functional constipation, which is a chronic refractory condition. However findings for TAI vary, possibly due to varying methodology and context. Well-designed prospective trials are required to improve the current weak evidence base.

**Key Words:** Constipation, diverticular disease, roman, faecal incontinence, symptomatic haemorrhoids, rectal, functional abdominal pain.
Enough with the overview, lets get our hands dirty now!

TAI systems

• Peristeen – Coloplast
  • [https://www.youtube.com/watch?v=M89WHE3TAZA](https://www.youtube.com/watch?v=M89WHE3TAZA)

• Qufora Irrisedo Cone Guide
  • [https://www.youtube.com/watch?v=4YLSg8RDE_I](https://www.youtube.com/watch?v=4YLSg8RDE_I)

• Qufora Balloon Irrigation system
  • [https://www.youtube.com/watch?v=XV6H-AE6b8](https://www.youtube.com/watch?v=XV6H-AE6b8)

• Qufora Irrisedo Mini Guide
  • [https://www.youtube.com/watch?v=XV6H-AE6b8](https://www.youtube.com/watch?v=XV6H-AE6b8)
Irypump® S Rectal Irrigation with Cone
- https://www.youtube.com/watch?v=uOsIfrGqZdk

Navina- New kid in town!
- https://www.youtube.com/watch?v=VlQOMw8R1IE

TAI – Decision Matrix

<table>
<thead>
<tr>
<th>Rectal Balloon System</th>
<th>Cone Shape System</th>
<th>Pump System</th>
<th>Evidence</th>
<th>Available on prescription (UK)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peristeen®</td>
<td>✓</td>
<td>Act &amp; observational</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Qufora Cone Toilet®</td>
<td>✓</td>
<td>Observational</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Qufora Balloon System®</td>
<td>✓</td>
<td>Observational</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Qufora Mini System®</td>
<td>✓</td>
<td>Observational</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Irypump®</td>
<td>✓</td>
<td>Observational</td>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>

TAI – Decision Matrix

Cannot recommend one system over another!
Most of the time depends on clinicians clinical experience + competence with TAI systems and the PATIENT!

Trouble-shooting

Consensus review of best practice of transanal irrigation in adults

Clinical Indication

<table>
<thead>
<tr>
<th>Why</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Leakage of water around the catheter/cone

<table>
<thead>
<tr>
<th>Irrigator is not expelled</th>
<th>Irrigator is expelled (UK)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>Irrigation stopped immediately</td>
</tr>
<tr>
<td>No</td>
<td>Irrigation continued without a break</td>
</tr>
</tbody>
</table>

No stool is evacuated after transanal irrigation

<table>
<thead>
<tr>
<th>Irrigator is not expelled</th>
<th>Irrigator is expelled (UK)</th>
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<tr>
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02/10/2017
**Conclusion - Take home messages**

- TAI is a beneficial and effective intervention for patients with PFDD
- Escalation of the appropriate treatment and an appropriate assessment (QoL/Symptoms) pre TAI is essential in order to adhere with clinical guidelines/governance
- Patient selection is the number 1 factor for a successful intervention!
- Patient’s support is the key for the success of the intervention in the short and the long term
- Ongoing liaison with the rest of the team is essential for the ultimate benefit of the patient!!

**Peristeen, Qufora and Bbraun have very kindly put a list of contacts should you want to get the ball rolling in your clinics! Please go and speak with them at end of the session or ask Paula and Carlene.**

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**Faecal incontinence** (it can also happen in patients with PFDD) between uses of transanal irrigation

Increase volume of water by small increments (100 ml) until satisfactory evacuation achieved. Reduce or decrease amount of water instilled. Split the irrigation into two consecutive episodes, 10–15 min between episodes, using half the irrigant each time. Increase frequency of transanal irrigation. Consider laxative use. Leakage of water between irrigations. Ensure patient allows sufficient time on toilet following transanal irrigation. Encourage use of adjunctive measures to encourage emptying. Reduce or decrease amount of water instilled. Split the irrigation into two consecutive episodes, 10–15 min between episodes, using half the irrigant each time. An Anal Plug (Coloplast) can be tried if problem persists.

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**Grazie mille**

Ci Vediamo subito
Psychological evaluation of patients with PFDD

Dave Chatoor
Colorectal Surgery
University College London Hospital

Posterior floor dysfunction is common

<table>
<thead>
<tr>
<th>Evacuation Disorders</th>
<th>Fecal Incontinence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prevalence</td>
<td></td>
</tr>
<tr>
<td>1 in 5: Constipation</td>
<td>1 in 50</td>
</tr>
<tr>
<td>1 in 10: Evacuation disorder</td>
<td>50% of institutionalised</td>
</tr>
<tr>
<td>80% of institutionalised</td>
<td></td>
</tr>
<tr>
<td>Age related</td>
<td></td>
</tr>
<tr>
<td>20% &gt; 65 years</td>
<td>20% &gt; 80 years</td>
</tr>
<tr>
<td>M : F ratio</td>
<td></td>
</tr>
<tr>
<td>1 : 3, Equal &gt; 80 yrs</td>
<td>Equal</td>
</tr>
<tr>
<td>Quality Of Life</td>
<td></td>
</tr>
<tr>
<td>&gt;30 % impaired QoL</td>
<td>&gt; 50% impaired QoL</td>
</tr>
<tr>
<td>Tx outcome</td>
<td></td>
</tr>
<tr>
<td>Poor surgical outcome</td>
<td>Better Tx outcomes</td>
</tr>
</tbody>
</table>

Regulation of colonic function

Brain gut axis

- Two-way interaction between ENS and CNS via sympathetic and parasympathetic nervous system
- Factors influence colonic function:
  - Conscious: Behavioural factors e.g. toilet avoidance
  - Unconscious: Emotional distress
- Hormonal: Increased expression of progesterone receptors

Psychological Burden

- Neuroticism, introversion associated with IBS
- Psychological disorders in 65% with evacuation disorders
- Sexual abuse an underlying factor in 22%
- Associated with poor outcome of surgery

Case History

- 28 Year old with 10 year history of bowel infrequency, evacuation difficulty.
- Feeling of incomplete emptying, anally digitates, spends half hr per day in the bathroom, irrigates with shower hose
- Has a very restrictive diet, refuses to be weighed, wants more laxatives
- Cant work, stays at home, gets panic attacks, avoids public bathrooms
- Has been seen in 2 previous hospitals and extensively investigated
- Already emailed 4 times, and contacted my secretary 5 times to get a sooner appointment
- Thinks a colectomy will solve her problems

Funding for speaker to attend:

- Self-funded
- Institution (non-industry) funded
- Sponsored by:

1. Kamm MA. Gastroenterology 2006;131:233-239
4. Image developed for programme
5. Tjandra et al. DCR December 1999
6. Sympathetic nervous system
7. Parasympathetic nervous system
**Psychological Correlates**

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Comparison with those without symptoms</th>
<th>Symptomatic vs asymptomatic (p value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dysthymia (21 - 73 (60%))</td>
<td>Lower anxiety (HAD – A) More somatized (DSM – SDQ)</td>
<td>6.7 ± 8.8 vs 5.8 ± 5.9 (p = 0.04)</td>
</tr>
<tr>
<td>Anxiety (21 - 73 (60%))</td>
<td>Higher anxiety (HAD – A) More somatized (DSM – SDQ)</td>
<td>7.4 ± 8.4 vs 5.9 ± 5.9 (p &lt; 0.001)</td>
</tr>
<tr>
<td>Somatic (21 - 73 (60%))</td>
<td>More depressed (HAD – C) More somatized (DSM – SDQ)</td>
<td>9.3 ± 9.6 vs 5.6 ± 5.8 (p &lt; 0.001)</td>
</tr>
</tbody>
</table>

Clean et al Gut 2009

**Reversibility**

- High scores of anxiety, depression and somatization correlate with slow transit
- Biofeedback in treating constipation improves objective measures of transit in parallel with improving anxiety scores

Emmanuel et al Gut 2001

**Assess the ‘Hidden History’**

- Optimize the first encounter
- ‘Listen’ to what they aren’t saying
- Primary complaint isn’t always linked to cause
- Understand bowel behavior
- Don’t dictate but guide realistic goals

**Types of assessments**

- Symptom Severity
  - Wexner Constipation score
  - Bowel diaries
  - QoL Assessments
  - Visual Analog Scale (0 - 10)
- HAD – Hospital Anxiety and Depression Scale
- Psychometric Testing
  - PHQ-Patient Health Questionnaire -22 , 15
- Family drawing test: Barnes & Kaufman 2012

**Family drawing test**

**Kinetic Family drawing**

Biasi et al Psychology 2014
Algorithm for Constipation

First line measures
- History and physical examination
- Simple measures include dietary modification, exercise, increase fluid intake, address toileting behaviour

Persisting symptoms sub divided and confirmed with in
- Exclude luminal causes if change in bowel habit, investigate and treat reversible, organic causes and sinister symptoms

Special investigations
- Simple measures include dietary modification, exercise, increase fluid intake, address toileting behaviour

Conservative Tx
- Diet, lifestyle modification, fluid intake, activity

Definitive treatment
- Antispasmodics
- Tricyclics, SSRI’s
- Osmotic laxatives +/ - biofeedback, suppositories, enemas

Disorder
- Pseudo-obstruction
- Megarectum
- Hirschsprung’s

Functional
- Anatomical

Biofeedback, Behavioural retraining, Rectal irrigation, laxatives, prokinetics

Surgery for rectocele and or intussusception

Who to refer to?

Key points in assessment
- Brain gut connection is strong
- Explore hidden symptoms
- Guide, don’t dictate goals
- Refer appropriately