We are IntechOpen, the world's leading publisher of Open Access books Built by scientists, for scientists

6,900
Open access books available

185,000
International authors and editors

200M
Downloads

Our authors are among the

154
Countries delivered to

TOP 1%
most cited scientists

12.2%
Contributors from top 500 universities



WEB OF SCIENCE™

Selection of our books indexed in the Book Citation Index in Web of Science™ Core Collection (BKCI)

Interested in publishing with us?
Contact book.department@intechopen.com

Numbers displayed above are based on latest data collected.
For more information visit www.intechopen.com



Chapter 2

Fecal Incontinence

Arzu Ilce

Additional information is available at the end of the chapter

http://dx.doi.org/10.5772/57502

1. Introduction

Fecal incontinence (FI) is defined as the recurrent, involuntary passing of solid or liquid stool [1-5]. FI is a common condition that results in significant physical and psychological disability [6].

FI includes the inability to hold a bowel movement until reaching a toilet as well as passing stool into one's underwear without being aware of it happening. Feces is solid waste that is passed as a bowel movement and includes undigested food, bacteria, mucus, and dead cells. Mucus is a clear liquid that coats and protects tissues in the digestive system [3]. FI is a challenging condition of diverse etiology and devastating psychosocial impact [1,3,4]. It severely impacts on the quality of life of many sufferers and their families, often being given as the reason for admission to a care home [7]. Therefore FI can be upsetting and embarrassing. Many people with FI feel ashamed and try to hide the problem. However, people with FI should not be afraid or embarrassed to talk with their health care provider. FI is often caused by a medical problem and treatment is available [1].

Although FI can be both emotionally and socially debilitating, the embarrassment associated with it is so great that it often prevents patients from seeking much needed help from their health care providers. Nursing care begins with case finding and continues through conservative management, which has greatly improved over the past 15 years [8].

2. Epidemiology

FI affects approximately 5% of the general population but its prevalence increases with age. Nearly 18 million United States (US) adults, about one in 12, have FI. FI is common in women; 1:1,010 women in the United States have FI. Nearly 70% of patients with FI have never

INTECH
open science | open minds

© 2014 The Author(s). Licensee InTech. This chapter is distributed under the terms of the Creative Commons Attribution License (http://creativecommons.org/licenses/by/3.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

discussed it with a physician. People of any age can have a bowel control problem, though FI is more common in older adults. Approximately 70% of institutionalized older adults have FI. Obstetric injury is the primary reason for FI in women. Forty-three percent of women who undergo anal sphincter repair following birth still experience FI 12 weeks after surgery, and 11% report FI for as long as 18 months after surgery. FI is common among women with pelvic floor disorders; 20% of women affected by urinary incontinence have FI [4,9-11].

3. Risk factors

FI has many causes, including; diarrhea or constipation, muscle damage or weakness, nerve damage or trauma, loss of stretch in the rectum, aging, congenital disorders, hemorrhoids and rectal prolapse, rectocele, inactivity [1,7,12].

Having any of the following can increase the risk: disease or injury that damages the nervous system; poor overall health from multiple chronic, or long lasting, illnesses, a difficult childbirth with injuries to the pelvic floor, the muscles, ligaments and tissues that support the uterus, vagina, bladder, and rectum [9-11]. Apart from these there are many etiologic factors are given in table 1 [8].

Additional risk factors include obesity [4]. More than 50% of US women are overweight (body mass index 25-30 kg/m^2) or obese (body mass index, 30 kg/ m^2), and the prevalence of obesity is increasing by almost 6% per year [6].

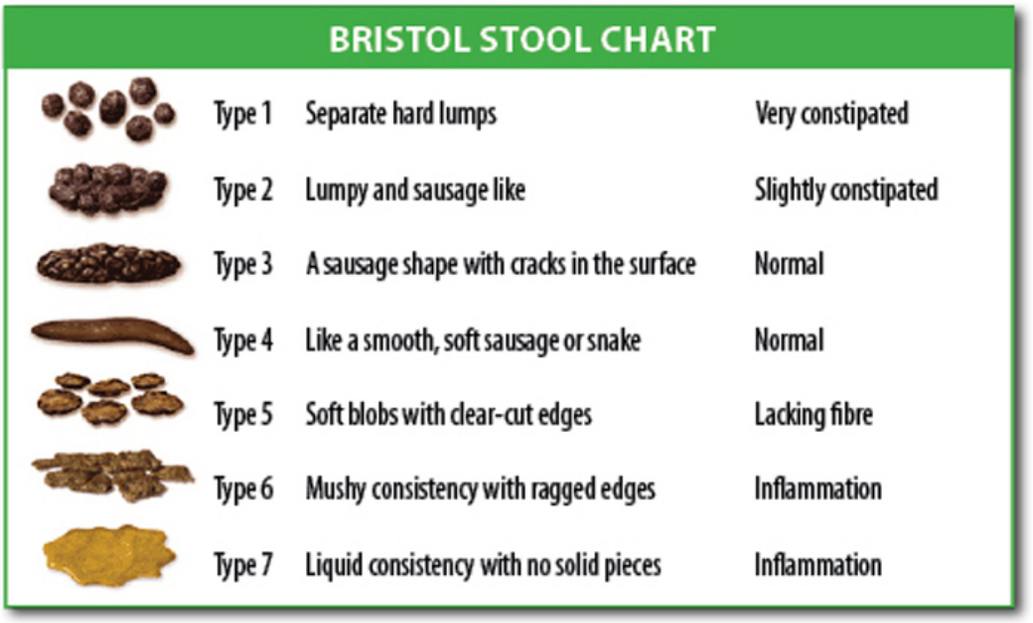


Figure 1. Bristol Stool Chart [13]

Etiologic factors
Perianorectal trauma
Anal sphincter injury
Obstetric procedures or childbirth
Anorectal surgery complications
Pelvic fracture
Abnormal anal sphincter or pelvic floor function
Rectal prolapse
Chronic straining
Neurologic disorders
Spinal cord
Brain injuries, stroke and cerebrovascular disease
Myelomeningocele
Multiple sclerosis
Neuropathy (as may occur in diabetes, for example)
Loose stool consistency or bowel irritation or inflammation
Diarrhea
Gastrointestinal infections
Inflammatory bowel disease or irritable bowel syndrome
Short bowel syndrome resulting from bowel resection
Radiation enteritis
Obstruction and overflow
Impaction
Neoplasms
Medications with antimotility adverse effects
Cognitive or functional disability
Dementia or delirium
Decreased mobility (resulting from stroke, arthritis, lower back problems, or weakness)
Restraints
Inability to access the toilet independently for any reason
Congenital anorectal malformations
Imperforate anus
Hirschsprung's disease
İdiopathic incontinence

Table 1. Etiologic factors of FI [8]

The ideal stool consistency is type three or four on the Bristol stool chart (figure 1). Type one and two stools are hard and can be difficult to pass. Type five, six and seven stools are soft to liquid hard to retain and make it difficult for the person with FI to remain continent [12].

Some medication can cause constipation or diarrhea such as pain medications, iron and depression (table 2) [12].

Medications that cause constipation	
Medication group	Example
Opiates	Morphine sulphate
Codeine based analgesia	Co-dydramol, co-codamol
Iron preparations	Ferrous sulphate
Anticholinergics	Oxybutinin
Diureties	Frusemide
Antidepressants	Amitriptyline, citalopram
Antispasmodics	Propantheline
Antihypertensives	Captopril
Antipsychotics	Risperidone
Medications that cause diarrhea	
Medication group	Example
Digitals	Digoxin
Antidepressants	Fluoxetine (Prozac)
Antidiabetics	Metformin
Antiobesity	Orlistat

Table 2. Medications that cause constipation and diarrhea [12].

Additionally, antibiotics can affect the bacreria in the gut which can increase the risk of developing *Clostridium difficile* and other forms of diarrhea [12].

4. Assesment/ Diagnosis

Health care providers diagnose FI based on a person's lifestyl, medical history, physical exam, and medical test results [2,12,14].

A stool diary is a chart for recording daily bowel movement details. Medical history enables the assessor to work out the possible causes or contributing factors that have led to the

development of FI. Some of these factors can be easily treated. while others may require management.

The healthcare professional should check the condition of the anorectal skin. Enzymes present in faeces can cause incontinence dermatitis, especially if the person has also incontinence of urine. Older people who are living in nursing homes have an increased risk of developing incontinence dermatitis, because large number of residents have continance problems. The healthcare professional should check the anal region for abnormalities such as external haemorroids, skin tags, rectal prolapse, and an anus that gapes open. A cognitive assessment is essential when assessing the older person who has FI. When staff are fully aware of any problems wiih memory and reasonlng, they can devise a plan to treat or manage incontinance [2,12,14].

The person may be referred to a doctor who specializes in problems of the digestive system, such as a gastroenterologist, proctologist, or colorectal surgeon, or a doctor who specializes in problems of the urinary and reproductive systems, such as a urologist or urogynecologist. The specialist will perform a physical exam and may suggest one or more of the following medical tests: Anal manometry, anal ultrasound, magnetic resonance imaging (MRI), defecography, flexible sigmoidoscopy or colonoscopy, anal electromyography (EMG) [2,12,14].

5. Treatment

Fecal incontinence is not a disease but a symptom and can be treate. Treatment for FI may include one or more of the following: eating, diet, and nutrition, medications, bowel training, pelvic floor exercises and biofeedback, surgery, rectal irrigation, colostomy [11,14].

Eating, Diet, and Nutrition: A food diary should list foods eaten, portion size, and when FI occurs. After a few days, the diary may show a link between certain foods and FI. A food diary can also be helpful to a health care provider treating a person with FI [1,9,15].

Dietary modifications are often included as an early treatment strategy for FI, but minimal data exist to guide the recommendations on types of dietary changes. Increasing soluble fiber intake has been shown to improve FI. Overweight and obese women report a high prevalence of monthly FI associated with low dietary fiber intake. Increasing dietary fiber may be a treatment for FI [6]. If constipation is causing fecal incontinence, dietary may recommend drinking plenty of fluids and eating fiber-rich foods. If diarrhea is contributing to the problem, high-fiber foods can also add bulk to stools and make them less watery [16]

The bowel is sensitive to the amount of fibre eaten, and also to contain foods. If a diet contains too much fibre the person may develop loose stools, if the diet is lacking in fibre, the person may become constipated. People who eat too much or too litttle fibre may develop FI. Certain foods, such as figs, prunes and plums, contain a natural laxative that can affect bowel habit. Some spices, such as chilli, can also affect the bowel. Excessive consumption of foods and drinks sweetened with sorbitol (an artificial sweetener) can cause loose stools [12].

A conscious effort to have a bowel movement at a specific time of day, for example, after eating. Establishing when you need to use the toilet can help you gain greater control [16].

Medications: If diarrhea is causing FI, medication may help. Health care providers sometimes recommend using bulk laxatives, such as Citrucel and Metamucil, to develop more solid stools that are easier to control. Antidiarrheal medications such as loperamide or diphenoxylate may be recommended to slow down the bowels and help control the problem [14]. If chronic constipation is causing FI, Laxatives may use [16].

Skin should be protected from Fecal enzymes by using either a barrier cream, such as Proshield Plus Skin Protective or Sudocrem", or a barier film such as Cavilon no sting barrier film [12].

Kegel exercises and biofeedback: Kegels or pelvic floor exercises can be problematic in frail older people who often have impaired cognition [12], but specially trained physiotherapists teach simple exercises that can increase anal muscle strength. People learn how to strengthen pelvic floor muscles, sense when stool is ready to be released and contract the muscles if having a bowel movement at a certain time is inconvenient. To perform Kegel exercises, contract the muscles that you would normally use to stop the flow of urine and stool. Hold the contraction for three seconds, then relax for three seconds. Repeat this pattern 10 times. As your muscles strengthen, hold the contraction longer, gradually working your way up to three sets of 10 contractions every day [16].

If the biofeedback session is aimed at strengthening your pelvic muscles, the practitioner will insert a slim sensor into your rectum. (In women, it is sometimes placed in the vagina, or an additional sensor may be used there.) Other electrodes will be placed on your abdomen to help record muscle contractions there. A computer screen provides feedback about the strength of your contractions and about whether you are using the correct muscles. If the biofeedback training is aimed at improving your ability to sense stool in the rectum, the practitioner will use anorectal manometry equipment to vary the pressure in your rectum. This is intended to increase the sensitivity of the rectum, which, in turn, helps some patients to recognize the presence of stool before the situation becomes despereat [17].

Surgery: Surgery may be an option for FI that fails to improve with other treatments or for FI caused by pelvic floor or anal sphincter muscle injuries [15].

Sphincteroplasty the most common FI surgery, reconnects the separated ends of a sphincter muscle torn by childbirth or another injury. Sphincteroplasty is performed at a hospital by a colorectal, gynecological or general surgeon [15].

Artificial anal sphincter involves placing an inflatable cuff around the anus and implanting a small pump beneath the skin that the person activates to inflate or deflate the cuff. This surgery is much less common and is performed at a hospital by a specially trained colorectal surgeon [18].

Nonabsorbable bulking agents can be injected into the wall of the anus to bulk up the tissue around the anus. The bulkier tissues make the opening of the anus narrower so the sphincters are able to close better. The procedure is performed in a health care provider's office; anesthesia

is not needed. The person can return to normal physical activities 1 week after the procedure [18].

Bowel diversion: It is an operation that reroutes the normal movement of stool out of the body when part of the bowel is removed. The operation diverts the lower part of the small intestine or colon to an opening in the wall of the abdomen, the area between the chest and hips. An external pouch is attached to the opening to collect stool. The procedure is performed by a surgeon in a hospital and anesthesia is used [2-18].

Rectal irrigation: can be very benefical for some patients [12].

Colostomy: It is generally considered only after other treatments have been tried [16].

6. Fecal containment devices

Containment products, such as incontinence pads and pants, are widely used to collect feaces and provide a degree of protection, but should only be considered once all other treatment options have been explored [7].

Incontinance pads are not ideal when a person is FI with profuse diarrhoea or loose stools. In these cases, Fecal containment device may be appropriate, such as Dignicare (Bard) or Flexi-Seal (Convatec) [12].

Fecal containment device (FCD) prevents contact of perineal skin with fecal matter, reducing the risk for incontinence-associated dermatitis, pressure ulcer formation, fecal contamination of wounds and reduction in frequency of diaper, clothing, and linen changes [19].



Figure 2. Fecal containment device [20].

FCD is an external drainage pouch that fits over the anus to collect stool. FCD and a bowel waste management system (BMS), which consists of an indwelling rectal catheter through which liquid or semi-liquid stool passes and is drained into an external drainage pouch. This patients should monitoring fluid and electrolyte status [20].

FCD, nurses responsibilities involved in the placement and maintenance of an FCD, including application (and removal) of the FCD based on the treating clinician's orders and manufacturer's instructions, the treating clinician's orders for the FCD, including pre-procedure analgesia. Any allergies; uses alternate materials during the procedure if allergies (e.g., latex) are noted [20].

7. Nursing care

1. In a reasonably private setting, directly question any patient at risk about the presence of FI. If the client reports altered bowel elimination patterns, problems with bowel control or "uncontrollable diarrhea," complete a focused nursing history including previous and present bowel elimination routines, dietary history, frequency and volume of uncontrolled stool loss, and aggravating and alleviating factors. Unless questioned directly, patients are unlikely to report the presence of FI [21]. The nursing history determines the patterns of stool elimination to characterize involuntary stool loss and the likely etiology of thein continence [22].

2. Complete a focused physical assessment including inspection of perineal skin, pelvic muscle strength assessment, digital examination of the rectum for presence of impaction and anal sphincter strength, and evaluation of functional status (mobility, dexterity, visual acuity).

A focused physical examination helps determine the severity of fecal leakage and its likely etiology. A functional assessment provides information concerning the impact of functional status on stool elimination patterns and incontinence [23,24].

1. Complete an assessment of cognitive function. Dementia, acute confusion, and mental retardation are risk factors for FI [22,25].

2. Document patterns of stool elimination and incontinent episodes via a bowel record, including frequency of bowel movements, stool consistency, frequency and severity of incontinent episodes, precipitating factors, and dietary and fluid intake. This document is used to confirm the verbal history and to assist in determining the likely etiology of stool incontinence. It also serves as a baseline to evaluate treatment efficacy [22].

3. Identify the probable causes of FI. FI is frequently multifactorial; therefore identification of the probable etiology of FI is necessary to select a treatment plan likely to control or eliminate the condition [22,25,26].

4. Improve access to toileting:

- Identify usual toileting patterns among persons in the acute care or long term care facility and plan opportunities for toileting accordingly.
- Provide assistance with toileting for patients with limited access or impaired functional status (e.g., mobility, dexterity, access).

- Institute a prompted toileting program for persons with impaired cognitive status (e.g., retardation, dementia).
- Provide adequate privacy for toileting.
- Respond promptly to requests for assistance with toileting.
- Acute or transient FI frequently occurs in the acute care or long term care facility because of inadequate access to toileting facilities, insufficient assistance with toileting, or inadequate privacy when attempting to toilet [10,23,26,27].

5. For the patient with intermittent episodes of FI related to acute changes in stool consistency, begin a bowel reeducation program consisting of:

- Cleansing the bowel of impacted stool if indicated.
- Normalizing stool consistency by adequate intake of fluids (30ml/kg of body weight/day) and dietary or supplemental fiber.
- Establishing a regular routine of fecal elimination based on established patterns of bowel elimination (patterns established before onset of incontinence).
- Bowel reeducation is designed to reestablish normal defecation patterns and to normalize stool consistency to reduce or eliminate the risk of recurring FI associated with changes in stool consistency [10].

6. Begin a prompted defecation program for the adult with dementia, mental retardation, or related learning disabilities. Prompted urine and fecal elimination programs have been shown to reduce or eliminate incontinence in the long term care facility and community settings [10,27].

7. Begin a scheduled stimulation defecation program, including the following steps, for persons with neurological conditions causing FI:

- Before beginning the program, cleanse the bowel of impacted fecal material.
- Implement strategies to normalize stool consistency, including adequate intake of fluid and fiber and avoidance of foods associated with diarrhea.
- Whenever feasible, determine a regular schedule for bowel elimination (typically every day or every other day) based on previous patterns of bowel elimination.
- Provide a stimulus before assisting the patient to a position on the toilet. Digital stimulation, stimulating suppository, "mini-enema," or pulsed evacuation enema may be used.
- The scheduled, stimulated defecation program relies on consistency of stool and a mechanical or chemical stimulus to produce a bolus contraction of the rectum with evacuation of fecal material [10,24,27].

8. Begin a pelvic floor reeducation or muscle exercise program for persons with sphincter incompetence or pseudodyssynergia of the pelvic muscles, or refer persons with fecal

incontinence related to sphincter dysfunction to a nurse specialist or other therapist with clinical expertise in these techniques of care. Pelvic muscle reeducation, including biofeedback, pelvic muscle exercise, and/or pelvic muscle relaxation techniques, is a safe and effective treatment for selected persons with FI related to sphincter or pelvic floor muscle days function [23,26,27].

9. Begin a pelvic muscle biofeedback program among patients with urgency to defecate and FI related to recurrent diarrhea. Pelvic muscle reeducation, including biofeedback, can reduce uncontrolled loss of stool among persons who experience urgency and diarrhea as provacative factors for FI [28]. Reducing the incidence of diarrhea can help to reduce bowel incontinence [10,23].

10. Cleanse the perineal and perianal skin following each episode of FI. When incontinence is frequent, use an incontinence cleansing product specifically designed for this purpose. Frequent cleaning with soap and water, dry as possible may compromise perianal skin integrity and enhance the irritation produced by fecal leakage [1,29].

11. Apply mineral oil or a petroleum based ointment to the perianal skin when frequent episodes of FI occur. These products form a moisture and chemical barrier to the perianal skin that may prevent or reduce the severity of compromised skin integrity with severe FI [28].

12. Assist the patient to select and apply a containment device for occasional episodes of FI. A fecal containment device will prevent soiling of clothing and reduce odors in the patient with uncontrolled stool loss [28].

13. Teach the caregivers of the patient with frequent episodes of FI and limited mobility to regularly monitor the sacrum and perineal area for pressure ulcerations.Limited mobility, particularly when combined with FI, increases the risk of pressure ulceration. Routine cleansing, pressure reduction techniques, and management of fecal and urinary incontinence reduces this risk [23,24,21].

14. Consult the physician concerning the use of an anal continence plug for the patient with frequent stool loss. The anal continence plug is a device that can reduce or eliminate persistent liquid or solid stool incontinence in selected patients [18,28].

15. Apply a fecal pouch to the patient with frequent stool loss, particularly when FI produces altered perianal skin integrity. Fecal pouches contain stool loss, reduce odor, and protect the perianal skin from chemical irritation resulting from contact with stool [14,23].

16. Consult the physician concerning the use of a rectal tube for the patient with severe FI. A large-sized French indwelling catheter has been used for fecal containment when incontinence is severe and perianal skin integrity significantly compromised [26].

8. Evidence — Based practices in fecal incontinence

Evidence Based Practice (EBP) is the use of systematic decision-making processes or provision of services which have been shown, through available scientific evidence, to consistently improve measurable patient outcomes. Instead of tradition, gut reaction or single observations as the basis for making decisions, EBP relies on data collected through experimental research and accounts for individual patient characteristics and clinician expertise.

Evidence Based Treatments (EBTs) are interventions which have scientific findings to demonstrate their effectiveness or efficacy in improving patient outcomes. Treatments are often placed along a continuum of support based on the rigorousness and amount of supporting research ranging from treatments which have strong support to those which are untested to those which have produced negative outcomes. Data sources used to make these evidence determinations include randomized experiments, which compare treatment with a control or placebo group or compare the treatment with another already established treatment; and single case design experiments which compare an individual subject's baseline with their response to treatment [30].

There are four or five generally accepted evidence levels along the continuum of research support on which experts attempt to categorize practices, based on the body of evidence and outcomes indicated supporting each treatment method.

A. Evidence of Type I or consistent findings from multiple studies of Type II, III, or IV
B. Evidence of Type II, III, or IV and generally consistent findings
C. Evidence of Type II, III, or IV but inconsistent findings
D. Little or no systematic empirical evidence

Table 3. Grades of Recommendations [31]

I. Meta-analysis of multiple well-designed, controlled studies, randomized trials with low false- positive and low false-negative errors (high power).
II. At least one well-designed experimental study; randomized trials with high false-positive or high false-negative errors or both (low power).
III. Well-designed, quasi-experimental studies, such as nonrandomized, controlled, single-group, preoperative-postoperative comparison, cohort, time, or matched case-control series.
IV. Well-designed, nonexperimental studies, such as cornparative and correlational descriptive and case studies.
V. Case reports and clinical examples.

Table 4. Levels of Evidence [31]

	Level of Evidence	Grade of Recommendation
Assessment		
1. Evaluation of FI should include consideration of severity and impact.	**Class II**	**B**
Diagnosis		
1. A problem-specific history and physical examination should be performed.	**Class V**	**D**
2. Endoanal ultrasound is usually the procedure of choice to diagnose sphincter defects in patients with suspected sphincter injury. Anorectal physiology studies mav be helpful in guiding management.	**Class II**	**B**
Nonoperative Treatment		
1. A trial of increased fiber intake is recommended in milder forms of FI to improve symptoms.	**Class III**	**B**
2. Antidiarrheal agents, such as adsorbents or opium derivatives, mav reduce FI symptoms.	**Class III**	**C**
3. Enemas, laxatives, and suppositories mav help to promote more complete bowel emptying in appropriate patients and minimize further postdefecation leakage	**Class V**	**D**
4. Biofeedback is recommended as an initial treatment for motivated patients with incontinence with some voluntary sphincter contraction.	**Class III**	**B**
5. An anal plug is effective in controlling FI in a smail minority of patients who can tolerate its use.	**Class V**	**D**
Surgical Options		
1.Sphincter repair is appropriately offered to highly symptomatic patients with a defined defect of the external anal sphincter.	**Class II**	**A**
2. Overlapping or direct sphincter repair yield similar results, as long as adequate mobilization of both ends of the sphincters are performed.	**Class II**	**A**
3. Repeat anal sphincter repair could be considered in patients who have recurrent symptoms and residual anterior sphincter defect after a previous sphincter repair.	**Class III**	**B**
4. Repair of the internal anal sphincter alone has a poor functional outcome and is not generally recommended.	**Class III**	**B**
5. When passiye FI caused by internal sphincter dysfunction is the predominant symptom, injectable therapy seems to be effective and safe, although its long-term efficacy has yet to be defined.	**Class II**	**B**
6.Sacral nerve stimulation (SNS) is a promising modality for FI.	**Class III**	**B**
7. Postanal repair or total pelvic floor repair has a limited role in the treatment of neuropathic FI.	**Class III**	**B**
8. Dynamic graciloplasty mav have a role in the treatment of severe FI when there is irreparable sphincter disruption.	**Class III**	**B**
9. The artificial bowel sphincter has a role in the treatment of severe FI, especially in patients with significant sphincter disruption.	**Class III**	**B**
10. The SECCA (safety and effectiveness of temperature-controlled radiofrequency energy delivery to the anal canal) procedure mav be useful for selected patients with moderate FI.	**Class IV**	**C**
11. A stoma (colostomy or ileostomy) is appropriate for patients with limiting FI in which available treatments have failed, are inappropriate because of comorbidities, or when preferred by the patient.	**Class III**	**B**

Table 5. Evidence- Based Practices İn Fecal İncontinence [31]

8.1. Assessment

Severity instruments assess type, frequency, and amount of incontinence. Impact questionnaires address quality of life and attempt to evaluate the effect of incontinence on emotional, occupational, physical, and social function. Both should evaluate these relatively subjective factors with reliability and validity [31].

8.2. Diagnosis

A detailed medical history mav help to elicit contributing or exacerbating factors, such as gastrointestinal or neurologic disorders. An obstetric account or history of previous anorectal surgery or perineal trauma can direct/prompt a more focused examination.

Inspection of the perianal skin may reveal excoriation, surgical scars, or fistulas, and the anus mav be noted to gape upon spreading the buttocks. Mucosal or full-thickness prolapse may be elicited with a Valsalva maneuver. Digital examination mav provide a rough estimate of resting and squeeze pressures and is helpful to evaluate for a rectal mass or the presence of impacted stool, which would suggest overflow as a possible mechanism for incontinence. Anoscopy and flexible sigmoidoscopy mav help to identify hemorrhoids, inflammatory bowel disease, or neoplasms [31].

8.3. Nonoperative treatment

Nonoperative therapy is usually the first maneuver to improve the symptoms of FI. Most patients with mild FI should usually receive an initial trial of nonoperative management.

Gradual increase of fiber intake during a period of several days can reduce symptoms, such as abdominal bloating and discomfort that mav be associated with increased fiber intake. Fiber supplements in the form of powder, granule, or pill of ten facilitate this goal. Dairy products are problematic in patients with lactose intolerance.

Antidiarrheal agents, adsorbents, such as kaopectate (Pharmacia & Upjohn, Peapack, NJ), act by absorbing excess fluid in the stool. Commonly used opium derivatives are loperamide (Imodium, McNeil Consumer Healthcare, Fort Washington, PA), diphenoxylate hydrochloride plus atropine sulphate (Lomotil, Searle, Chicago, IL), codeine, and tincture of opium. Evaluation and management of abnormal colonic transit also can be helpful.

Biofeedback mav be considered a first-line option for many patients with FI who have not responded to simple dietary modification or medication.

Supportive counseling and practical advice regarding diet and skin care can improve the success of biofeedback. Biofeedback mav be considered before attempting sphincter repair or for those who have persistent or recurrent symptoms after sphincter repair. it mav have a role in the early postpartum period in females with symptomatic sphincter weakness. Biofeedback and a pelvic floor exercise program can produce improvement that lasts more than two years. Biofeedback home training is an alternative to ambulatory training programs, especially in the elderly [31].

8.4. Surgical options

The SECCA (safety and effectiveness of temperature-controlled radiofrequency energy delivery to the anal canal) procedure consists of the delivery of temperature-controlled radiofrequency energy to the anal sphincters. It is believed that the heat generated causes collagen contraction, healing, and remodeling, leading to shorter and tighter muscle fibers [31].

Author details

Arzu Ilce*

Address all correspondence to: arzuilce@hotmail.com

Abant Izzet Baysal University, Bolu Health School, Department of Nursing Turkish, Bolu, Turkey

References

[1] Jarrett ME, Mowatt G, Glazener CM, et al. Systematic review of sacral nerve stimulation for fecal incontinence and constipation. Br J Surg 2004; 91:1559.

[2] Rao SS, American College of Gastroenterology Practice Parameters Committee. Diagnosis and management of fecal incontinence. American College of Gastroenterology Practice Parameters Committee. Am J Gastroenterology 2004; 99:1585.

[3] Barnett JL, Hasler WL, Camilleri M. American Gastroenterological Association medical position statement on anorectal testing techniques. American Gastroenterological Association. Gastroenterology 2009; 116:732.

[4] Caple C, Cabrera G, Strayer DA, Incontinence, Fecal, in Women, Editor Diane Pravikoff, Cinahl Information Systems, May 6, 2011

[5] Harvie HS, Arya LA, Saks EK, et al. Utility preference score measurement in women with fecal incontinence. Am J Obstet Gynecol 2011;204:721-726.

[6] Markland AD, Richter HE, Burgio KL, et al. Fecal incontinence in obese women with urinary incontinence: prevalence and role of dietary fiber intake. Am J Obstet Gynecol 2009;200:5661-5666.

[7] Woodward S, Management options for Fecal incontinence. Nursing & Residential Care 2012; 14: 5.

[8] Bliss DZ and Norton C, Conservative Management of Fecal Incontinence. AJN 2010; 110: 9.

[9] Madoff RD, Williams JG, Caushaj PF. Fecal incontinence. N Engl J Med 1999;326:1002-07.

[10] Wong WD, Congliosi SM, Spencer MP, et al. The safety and efficacy of the artificial bowel sphincter for fecal incontinence: results from a multicenter cohort study. Dis Colon Rectum 2002;45:1139–53.

[11] Whitehead WE, Borrud L, Goode PS, et al. Fecal incontinence in U.S. adults: epidemiology and risk factors. Gastroenterology.2009;137(2):512-17.

[12] Nazarko L, Fecal incontinence: diagnosis, treatmentandmanagement. Nursing & Residential Care. 2011;13(6):270-5

[13] Cabot Health, Bristol Stool Chart http://www.cabothealth.com.au/articles/bristol-stool-chart-2/ (accessed 30 november 2013)

[14] Keating JP, Stewart PJ, Eyers AA, et al. Are special investigations of value in the management of patients with fecal incontinence? Dis Colon Rectum 2012 ; 40:896.

[15] Slavin JL. Position of the American Dietetic Association: health implications of dietary fiber. Journal of the American Dietetic Association.2008;108(31):1716–1731.

[16] Mayo Clinic, Fecal İncontinence, http://www.mayoclinic.com/health/fecal-incontinence/DS00477 (accessed 30 november 2013)

[17] Harvard Health PublicationS, Better Bladder and Bowel Control, 38- 41, www.health,harvard.edu (accessed 30 november 2013)

[18] Ko CY, Tong J, Lehman RE, et al. Biofeedback is effective therapy for fecal incontinence and constipation. Arch Surg 2010; 132:829.

[19] Schub E, Fecal Containment Devices: Providing Patient Care. Cinahl Information Systems 2012.

[20] Fecal containment device http://www.convatec.com/continence-critical-care/flexi-seal-family-of-products/flexi-seal-fms.aspx (accessed 30 november 2013)

[21] Duel BP, Gonzalez R. The button cecostomy for management of fecal incontinence. Pediatr Surg Int 1999;15(8):559-61.

[22] Norton C, Chelvanayagam S, Wilson-Barnett J, et al. Randomized controlled trial of biofeedback for fecal incontinence. Gastroenterology 2003;125:1320-29.

[23] Gray M, Burns SM. Continence management. Crit Care Nurs Clinics N Am 1996;8(1): 29-38.

[24] Fynes M, O'Herlihy C. The influence of mode of delivery on anal sphincter injury and fecal continence. The Obstetrician Gynaecologist 2001;3:120–25.

[25] Jensen LL, Lowry AC. Biofeedback improves functional outcome after sphincteroplasty. Dis Colon Rectum 1997;40(2):197-200

[26] Wald A. Biofeedback for neurogenic fecal incontinence: Rectal sensation is a determinant of outcome. J Pediatr Gastoenterol Nutr 2005;2:302-06.

[27] Shafik A. Perianal injection of autologous fat for treatment of sphincteric incontinence. Dis Colon Rectum 1995;38:583-87.

[28] Chiang L, Ouslander J, Schnelle J, et al. Dually incontinent nursing home residents: Clinical characteristics and treatment differences. J Am Geriatr Soc 2000;48(6):673–76.

[29] Alstad B, Sahlin Y, Myrvold HE. Anal plug in fecal incontinence. Tidsskrift for Den Norske Laegeforening 1999;119(3):365-66.

[30] Evidence Based Practice Institute http://depts.washington.edu/ebpi/ (accessed 30 november 2013)

[31] National Guideline Clearinghause, http://www.guideline.gov/search/search.aspx?term=fecal+incontinence (accessed 24 september 2013)

IntechOpen