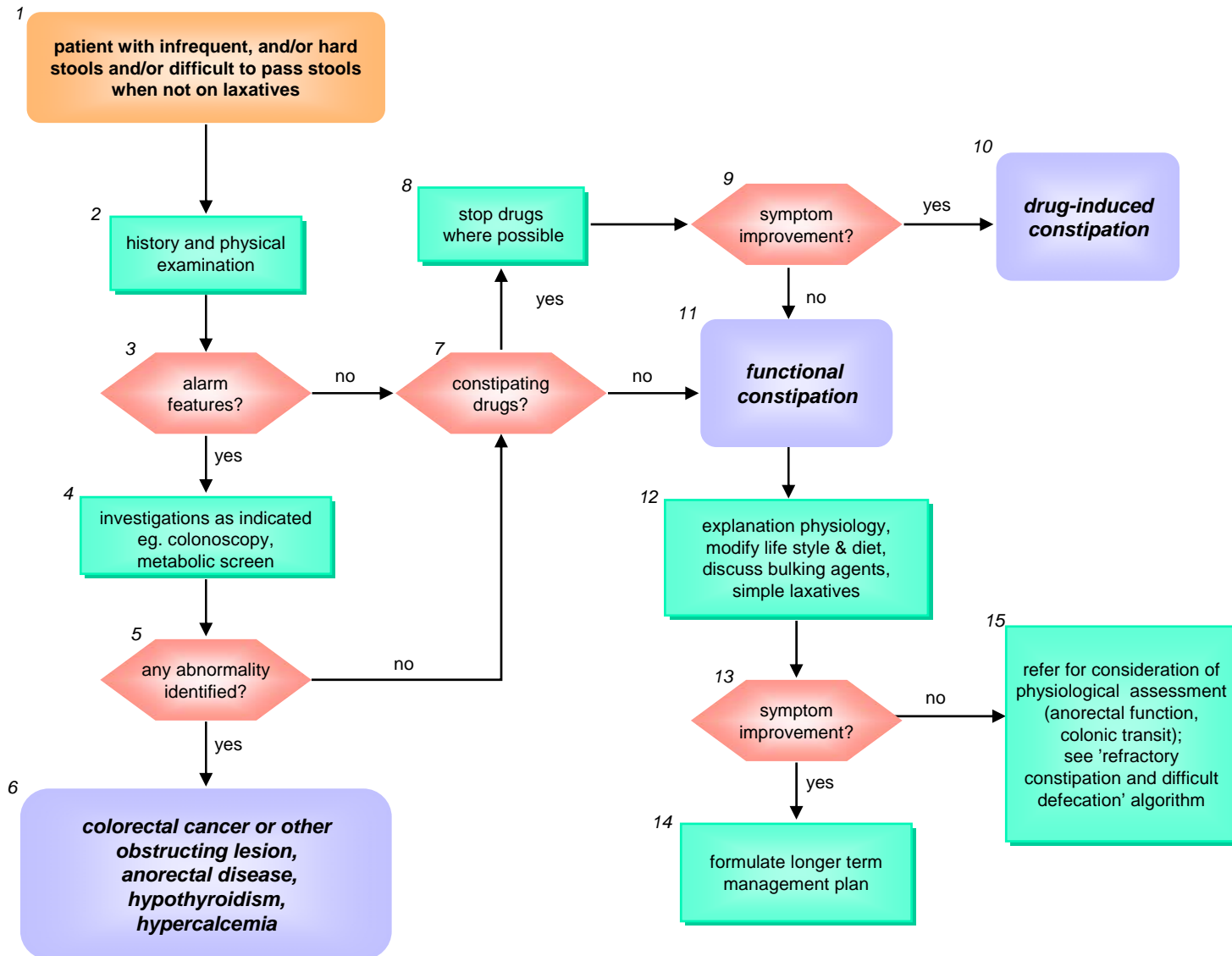


Figure 3: Chronic constipation



Chronic Constipation

Case history

A 40 year-old hairdresser is referred to a gastroenterologist by her primary care physician because of longstanding infrequent hard stools (Box 1, Figure 3). She defecates on average twice a week, and on most occasions this requires considerable straining. The stools consist of small hard pellets, never loose and watery unless she uses laxatives. The gastroenterologist shows the patient the BSFS, and the patient indicates that her stools usually conform to stool type 1 or 2 of the BSFS. These symptoms have been present for eight years, but have become gradually more severe and troublesome over the last two. She denies the need to manually disimpact herself, and does not describe a sensation of something blocking the passage of the stool. There is no abdominal pain, but she experiences abdominal bloating several times a week (Box 2). She has had no weight loss (Box 3). Her periods are very heavy and last 7 days. She smokes five cigarettes daily and does not drink alcohol. She takes no constipating drugs (Box 7). She has two children, both delivered vaginally without complication. She denies depression and describes an active social life. Dietary review indicates her fiber intake to be 15 to 20 g daily. There is nothing relevant in her past medical history, and no family history of constipation, bowel cancer or other gastrointestinal disease.

Physical examination is negative, including the abdominal exam. Small hemorrhoids are evident on anal inspection, and digital rectal examination reveals only hard stool. In particular, anal sphincter tone is normal, and simulated evacuation is accompanied by relaxation of the puborectalis muscle with normal perineal descent (Box 2). The patient has tried a number of over-the-counter preparations, including stool softeners and herbal teas, but these have not been very effective. Recently, she has found that if she takes two bisacodyl tablets in the morning, she can sometimes have a more complete motion later in the day, but the improvement is short-lived.

A CBC is normal. In the absence of evidence suggesting pelvic floor dysfunction or colonic inertia (see 'refractory constipation and difficult defecation' algorithm following), the gastroenterologist makes a diagnosis of **functional constipation** (Box 11) He explains the possible mechanisms for the constipation, and suggests that she gradually increase her dietary fiber intake, and commence a low dose of psyllium, slowly increasing this over several months with adequate fluid intake (Box 12). He indicates she may add a polyethylene glycol (PEG) preparation if needed. Three months later, she reports significant improvement in her stool form and straining, and she defecates 3 or 4 times weekly (Box 13). She has been taking psyllium on a regular basis, with the addition of a PEG preparation as required, and is happy to continue to do this in the longer term (Box 14).

Figure Legend

1. A detailed description of the patient's defecation pattern should be obtained. In addition to stool frequency, form, and effort, and a sensation of incomplete evacuation should be noted. The need to digitate manually to expel stool, or prolonged straining are features that may suggest a defecation disorder. The BSFS can be used to confirm the patient's current and most usual stool form. Furthermore, abdominal pain is not necessarily a feature of chronic constipation, but if present the diagnosis could be IBS-C (see "Recurrent abdominal pain/discomfort with altered bowel habit" Figure1)
2. The history should include precipitating factors occurring at the onset of symptoms including any new constipating drugs, and an estimation of dietary fiber intake. Any changes in exercise or life style should also be noted. General inspection of the patient may reveal evidence of anemia or occasionally hypothyroidism. A complete examination of the abdomen including digital rectal examination should be performed. Anal sphincter tone should be assessed, both at rest and during squeeze. The normal relaxation of the puborectalis muscle, and perineal descent, should be assessed during simulated evacuation. If relaxation of the puborectalis or perineal descent cannot be demonstrated a defecation disorder may be present, see 'Refractory Constipation and Difficult Defecation' algorithm below.
3. The most important alarm features include a recent change in bowel habit, weight loss, family history of colorectal cancer, rectal bleeding or age over 50 years.
4. If there are one or more alarm features, colonoscopy is the most important investigation. CBC and ESR/CRP help exclude occult anemia or inflammation. Metabolic screening for hypothyroidism and hypercalcemia can be performed, especially if there are any clinical indicators, but rarely alters management
- 5-6. Colon cancer is rare under the age of 50 years⁵⁶. Melanosis coli is a distinctive pigmentation of the colon mucosa that is seen in some patients at the time of colonoscopy and indicates chronic anthraquinone laxative

24

use⁵⁷. Borderline hypothyroidism is common in the general population but rarely presents as constipation in the absence of other features of thyroid disease such as lethargy, cold intolerance and weight gain⁵⁸.

Hypercalcaemia is also associated with constipation though rarely in the absence of other symptoms of the underlying disease such as back pain or anemia in a person with myeloma⁵⁹.

7. If there are no alarm features, or no abnormalities are detected on further investigations, the potential for any drug effects should be considered. Constipating drugs include opiates such as codeine, morphine, tramadol and dihydrocodeine, tricyclic antidepressants, calcium containing antacids, iron preparations, chemotherapy (e.g. sorafenib, cladribine) and antipsychotics (e.g. chlorpromazine, sulpiride).

8-10. If a drug suspected of causing or exacerbating the constipation can be ceased, and if the constipation improves on its withdrawal, a diagnosis of drug-induced constipation is justified. Switching to non-constipating analgesics such as mefenamic acid or other NSAIDs may be helpful. Opioid detoxification may require more intensive treatment. Clonidine may aid opiate withdrawal as may the substitution of non-opiate analgesics such as pregabalin. Combining centrally acting opioids with naloxone or with peripherally acting opioid antagonists, if available, should also be considered(47). Recently methylnaltrexone has been shown effective for opiate induced constipation in malignant disease⁶⁰.

11. If there are no suspect drugs, or if drug withdrawal fails to improve the constipation, and if there are no alarm features, then a diagnosis of functional constipation can be made.

Rome III diagnostic criteria for functional constipation (1) are:

1) two or more of the following:

- a) straining during at least 25% of defecations**
- b) lumpy or hard stools in at least 25% of defecations**
- c) sensation of incomplete evacuation for at least 25% of defecations**
- d) sensation of anorectal obstruction/blockage for at least 25% of defecations**

e) manual maneuvers to facilitate at least 25% of defecations (e.g. digital evacuations, support of the pelvic floor)

f) fewer than three defecations per week, and

2) loose stools rarely present without the use of laxatives

3) insufficient criteria for irritable bowel syndrome

4) criteria fulfilled for at least three months with symptom onset at least six months prior to diagnosis.

Functional constipation as defined by Rome criteria affects around 8% of the population⁷. The main aim of treatment should be to minimize medication and rely in the long term on behavioral and dietary measures. Most placebo-controlled trials show that symptoms of those on placebo treatment approaches those in the treatment arm after around 3 months suggesting that with proper instruction, constipation can be managed without drugs most of the time.

Careful explanation of the importance of regular meals containing adequate amounts of dietary “fiber” or adequate amounts of small, poorly-absorbed sugars such as fructose or sorbitol. Adequate time and posture for defecation should be explained to the patient as well as the optimal timing. For example it is advantageous to attempt defecation 30-60 minutes after a meal when the gastrocolonic reflex may activate colonic mass movements and aid defecation. Simple bulking agents such as ispaghula husk or psyllium may help increase stool volume and soften stool. Bulkier stools are more easily passed than small ones⁶¹. PEG solutions have been shown in several randomized placebo controlled trials to be effective even with fecal impaction⁶². Stimulant laxatives like senna or osmotic laxatives like lactulose can cause pain⁶³ and may result in watery stool followed by several days with no bowel movement. This may be misinterpreted as constipation leading to further doses and excessive laxation.

14. Improving symptoms reinforce the diagnosis of functional constipation, and at this stage a longer-term management plan should be devised.

15. If the constipation fails to improve, and the patient describes very infrequent stools and/or difficult defecation, particularly a sense of anorectal blockage and/or the need for anal digitation during defecation, he/she should be referred for a study of anorectal function and colonic transit. This may determine if he/she has disordered defecation, or slow colonic transit, or both, underlying their constipation. (see 'Refractory constipation and difficult defecation' algorithm following).