Constipation

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Definitions ‘Constipation’ is not a disease but rather a term often used by patients to describe dissatisfaction with their bowel function or their ability to defecate. As such it means di ff erent things to di ff erent patients (and di ff erent doctors) and can describe symptoms that directly relate to defecation, e.g. straining, or those considered consequent in the abdomen, e.g. pain and bloating. More formal definitions such as that of the American College of Gastroenterologists – ‘unsatisfactory defecation, for at least 3 months’ – cover most symptoms and introduce a time criterion to exclude patients with transient symptoms (sometimes called ‘simple constipation’). Stricter definitions of ‘c hronic constipation’ include a measure of resistance to treat - ment – ‘unsatisfactory defecation characterized by infrequent stools, di ffi cult stool passage or both for at least 6 months where this has proven unresponsive to lifestyle alterations and basic laxative therapy’. Epidemiology - Self-reported constipation is very common, with a worldwide - prevalence of about 10% (making it one of the commonest ailments in humans). Fortunately , patients with chronic constipation (based on 6 months of symptoms and failure of e is at least two laxatives) are much less common (approximately 0.5%). Most studies report a higher prevalence of self-reported constipation in women than in men with a ratio of 2:1. The ratio is much higher for chronic constipation at approximately 9:1 female to male. Risk factors The vast majority of patients with chronic constipation lack a single unifying cause for their problems. The main associated medical conditions and diseases within the gastrointestinal tract itself are listed in Table 73.5 . Diagnosis Clinical history A thorough history will determine whether constipation represents a new complaint, i.e. one indicative of a change

TABLE 73.5 Risk factors for constipation. Gastrointestinal causes Mechanical obstruction Benign and malignant strictures Functional obstruction Pelvic organ prolapse syndromes (dynamic obstruction at the level of the anorectum) Megarectum Anal pain, e.g. chronic /f_i ssure Medical causes Metabolic disorders Hypercalcaemia, uraemia, hypokalaemia, hypomagnesaemia Endocrine disorders Hypothyroidism, diabetes, pregnancy Degenerative CNS diseases, e.g. multiple sclerosis, Parkinson’s, cerebrovascular disease, Neurological disorders spinal or pelvic nerve lesions, autonomic neuropathies, cognitive impairment Drugs Opioids Anticholinergics Calcium channel blockers Psychological Severe endogenous depression Eating disorders Cognitive behavioural disorders Other Connective tissue diseases Joint hypermobility Causes of immobility, e.g. degenerative joint disease CNS, central nervous system.

the frequency and consistency of bowel movements and the progress of such changes over time (as well as other alarm symptoms such as rectal bleeding and weight loss). With additional information regarding family history , previous colon cancer screening and other gastrointestinal investigations, an informed decision can be made whether intraluminal investigation of the colon is required. Other organic causes of constipation may be deduced by appropriate history taking and biochemical investigation. With the exclusion of treatable secondary causes, if the history is short

and multiple previous therapies have not already been tried, the patient may be first considered to have ‘simple’ constipation that can be managed with reassurance and lifestyle advice (fibre, fluids and exercise) with/without simple laxative therapy . In patients with chronic symptoms, after exclusion of a sec ondary cause, the focus should shift to the investigation and management of chronic constipation. Many patients may attribute the start of symptoms to a major life e vent. Common among these are hysterectomy and childbirth, other abdomi nal surgeries or trauma. Constipation can also be associated with previous abuse and it may sometimes be necessary to tact fully seek a history of physical or sexual abuse. Other patients will have no such triggers , having had symptoms from child hood and on occasion fr om infancy . Such patients are overwhelmingly female (>95%) and on investigation are often found to have generalised slow-transit constipation as opposed to other pathophysiological findings (this group , who represent 5–10% of patients with chronic constipation, are variably referred to in the literature are ‘idiopathic slow-transit consti pation’ or ‘colonic inertia’). It is helpful to systematically docu ment the main symptoms that in the patient’s mind constitute a problem since this has some bearing on treatment decisions and subsequent monitoring of e ff ectiveness. Several questions form detailed scoring systems to systematically facilitate this in a research context. How ever, in routine practice it is su ffi cient to list in the patient’s record the presence or absence of several common symptoms (Summary box 73.7). The presence of prolapse symptoms reflects the overlap between diagnoses in patients with pelvic floor disorders (see Chapter 80 remaining history should document prescribed and self- administered laxatives (and therapeutic benefit thereof) and also gain an impression of the quality of diet in respect of fibre and fluid intake. Clinical examination Poor nutritional status should prompt a search for a secondary cause, including occult carcinoma, more widespread intestinal motility disorders such as IPO (see Chronic impairment of intestinal motility with dilatation of the small intestine: intestinal pseudo-obstruction) and eating disorders. An abdominal examination should be conducted to look for scars, any significant abdominal distension, tenderness or masses. Bloating is a common and expected finding with chronic constipation, but significant distension, tenderness or masses should prompt a full investigation. All patients presenting with constipation should undergo a rectal examination. The perineum and anus should be examined for evidence of faecal incontinence that may indicate Symptoms to directly question in patients with constipation /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF - /uni25CF /uni25CF - /uni25CF /uni25CF - - impaction and overflow . Some degree of faecal incontinence and chronic constipation coexists in 40% of patients; marked soiling of the underwear is especially associated with the rarer diagnosis of megarectum. Scarring, e.g. from episiotomy , sen - tinel pile formation secondary to an underlying anal fissure, external haemorrhoids or prolapse, may also be present. The - degree of perineal descent on straining, indicative of pelvic - floor weakness , should also be determined visually (>3 /uni00A0 cm is usually considered abnormal). A digital rectal examination will diagnose impaction, gain a rough measure of anal tone at rest and on squeeze and ascertain obvious sphincter defects. An e ff ort should be made to look for any anterior defect in the rectovaginal septum leading to a rectocele. Anoscopy and proctoscopy should be performed if there is any history of rectal bleeding and may indicate fissure or internal piles. A urogynaecological examination is desirable in all patients with). The suspected pelvic multi-organ prolapse. Investigations While findings from history or physical examination may indicate a secondary cause of constipation, making further investigation mandatory , it is also typical practice in patients with chronic constipation to exclude certain secondary causes by investigation even though the diagnostic utility of such investigations is acknowledged to be low (the commonest undiagnosed systemic disease is hypothyroidism). Thus,

serum electrolyte, creatinine, calcium, glucose, haemoglobin levels and thyroid function tests are usually performed. The approach taken to structural investigation of the colon when patients have no suspected intraluminal pathology varies on the basis of available resource and may include colonoscopy . In patients with chronic constipation in whom basic laxatives have failed, further specialist investigative tests may be warranted. Colonic transit can be investigated by a radio-opaque marker study (Figure 73.2). In addition, rectal

Abdominal symptoms Abdominal pain Bloating Defecatory symptoms Frequency of spontaneous or assisted bowel opening Painful defecation Stool consistency (can use Bristol stool scale) Digitation (vaginal or anal) Straining Incomplete/unsuccessful evacuation Leakage/incontinence Prolapse Other pelvic symptoms Vaginal bulging or prolapse Urinary incontinence

if the patient has a functional or dynamic structural cause of evacuation disorder. Problems such as dyssynergic defecation (functional) and intussusception/rectocele (structural) may occur in isolation or coexist with transit disturbances (Figure 73.10). Management The treatment of chronic constipation follows a stepwise progression from lifestyle changes through potentially to major surgery in a small minority of patients. Table 73.6 lists the main available approaches, noting where some apply only to certain diagnoses derived from the results of specialist tests of colonic and anorectal function. Figure 73.11 provides a basic algorithm to accompany Table 73.6 . symptoms for many years and will have tried a number of rem - edies and prescribed laxatives. They will also usually have tried to address lifestyle modifications. Before resorting to specialist tests, it is possible to try and rationalise laxative therapy and provide a programme of n urse-led behavioural interventions. In regard to laxatives, current advice is to stop current laxatives (unless these are working well) and then titrate an oral osmotic laxative, e.g. polyethylene glycol (PEG), until the stool form is soft or liquid. If this is insu ffi cient then a stimulant laxative such as bisacodyl may be added. If symptoms of obstructed defecation predominate then rectal laxatives in the form of suppositories or enemas may be tried with or without contin - uation of oral laxatives. The failure of such drugs should then prompt a trial of one of the newer prokinetic or secretagogue

Figure 73.10 Schematic overview of pathophysiology of chronic constipation. DD, defecation disorder; STC, slow-transit constipation. TABLE 73.6 Treatment options in patients with chronic constipation. Lifestyle Increase /f_l uid intake Dietary modi /f_i cation, e.g. increased /f_i bre Increase exercise Reduce body mass (pelvic /f_l oor prolapse syndromes) Drugs Oral laxatives (favoured for slow transit) Rectal laxatives (favoured for rectal evacuation disorders) Prokinetics, e.g. prucalopride Secretagogues, e.g. linaclotide Behavioural therapies Habit training Habit training with direct visual biofeedback (favoured for dyssynergic defecation) Pelvic /f_l oor muscle training (favoured for pelvic /f_l oor prolapse syndromes) Transanal irrigation High- or low-volume systems available Surgery See Summary box 73.8 15% normal 5% STC 45% mixed STC and DDs 40% DDs Structural Functional

drugs. These drugs are successful in a proportion of patients but do have some unwanted side e ff ects (that the patient should be warned about). All drugs should be tried daily for a mini mum of 4 weeks before concluding that they are ine ff ective and the reactionary use of laxatives, i.e. in response to being con stipated, rather than their preventative use, should be str discouraged. The most common form of behavioural intervention is often described by the term ‘habit training’. This

involves optimising dietary patterns to maximise gastrocolic response and the morning clustering of colonic high-amplitude prop aga ted contractions that propel contents towards the rectum for subsequent evacuation. Dietary advice to optimise intake of liquid and fibre is given as well as advice about frequency and length of toilet visits and posture (Figure 73.12). Patients ar e also instructed on basic gut anatomy and function and gain an appreciation of how psychological and social stresses may influence gut functioning. Simple pelvic floor and balloon expulsion exercises are often included. Such appointments also μ - - ongly -

modi /f_i cation and basic pharmacological treatment Review lifestyle modi /f_i cation (/f_i bre, /f_l uid, exercise) Rational laxative use (PEG, stimulant laxatives) Prokinetics if naive (prucalopride 1–2 mg daily or linaclotide 290 Response Anorectal function Abnormal Dyssynergic Other evacuation defecation disorder defecography, rectal No sensory testing and response Direct visual anorectal manometry) biofeedback

No response Transanal irrigation Response 4 initiated high volume Figure 73.11 Algorithm of chronic constipation management. MDT, multidisciplinary team; PEG, polyethylene glycol. 1, alarm features excluded and secondary causes treated appropriately; 2, in constipation-predominant irritable bowel syndrome, consider antispasmodics or neuromod ulators in case constipation improves but abdominal pain persists and is dominant symptom; 3, examples of overt prolapse include anterior (stage 3

cystocele), middle (stage 3 rectocele, uterovaginal prolapse) and posterior compartments (grade IV/V intussusception); 4, unless patient preference for low volume or speci /f_i c contraindications to high volume; 5, may reduce speci /f_i c symptoms but not have overall effect on quality of life; 6, common adjuncts include sacrocolpopexy, hysterectomy, transvaginal tape and cystocele repair. 1 2 Response g or other secretagogues) No response Obvious clinical evidence of Habit training 3 overt pelvic

organ prolapse No response Colonic/whole gut transit Normal +/– defecography testing (balloon +/– adjunctive tests, e.g. urodynamics expulsion test, Abnormal Abnormal Re-evaluation of MDT meeting to symptom–investigation discuss surgical correlation to focus on further options pharmacology or other untried interventions Other surgical targets Posterior compartment prolapse and procedures syndrome with high +/– grade intussusception retrocele Consider laparoscopic

ventral 5 rectopexy or alternative, 6 +/– e.g. STARR adjuncts

Figure 73.12 Correct posture for defecation.

therapy . If this fails, there may be recourse to the specialist tests to assess colonic transit and also anorectal function (see Chapter 80). Armed with the results of these tests, the patient may have a more targeted approach relative to their observ ed pathophys iology . One example of this approach is for patients with a con dition termed ‘dyssynergic defecation’, where there is a failure to relax, or even paradoxical contraction of the pelvic floor muscles (especially puborectalis) during defecatory e ff orts. In such patients, instrument-based biofeedback learning tech niques pro vide direct visual computer-based biofeedback of pelvic floor activity . The aim is to retrain the patient to appro priately contract abdominal and relax pelvic floor m during defecation with the patient receiving feedback of anal and pelvic floor muscle activity as recorded by surface electro myographic anal pressur e sensors or digital examination by the therapist. Transanal irrigation (TAI) may be used for any patient with an evacuation disorder when habit training and/or biofeedback have failed. A number of devices are available that administer a low (appro ximately 50–100 /uni00A0 mL) or high volume (approximately 500 /uni00A0 mL) of irrigant fluid into the rectum. The patient sits on the toilet to evacuate the fluid and faecal material. Some patients with chronic refractory symptoms may seek a surgical solution to their problem. Surgical procedures can be broadly divided into those addressing dynamic structural problems of the pelvic floor (prolapse pr ocedures), those that seek specifically to address slow-transit constipation and those that may have a role for both (Summary box 73.8). Summary box 73.8 Surgical options in patients with chronic constipation /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF All surgery should be undertaken in the knowledge that none of the above-listed operations is perfect. All represent a trade-o ff between benefits and short-term harms and poor Edmond Delorme , 1847–1929, French military surgeon and Professor of Surgery , V al-de-Grace Military Hospital, Paris, France. Peter Graham Chait , contemporary , radiologist, Toronto, Canada. essential requirements before surgery is undertaken: /uni25CF pathophysiological findings from specialist tests concur with the symptomatology and findings on clinical exam - ination; - /uni25CF conservative (non-surgical) treatment options have been - tried; /uni25CF the patient’s case has been reviewed at a multidisciplinary team (MDT) meeting and surgery recommended; /uni25CF the patient has been consented in the very clear knowledge - of the range of possible outcomes; /uni25CF surgery is undertaken in a centre with expertise in manag - - ing functional conditions. uscles The range of procedures for rectal prolapse are covered in - detail in Chapter 79 . Those primarily targeting the intestine are covered briefly here. Colectomy Colectomy is a radical and clearly irreversible final solution for patients with refractory slow-transit constipation. Its use should be very highly selective, not least because it is not actually a solution for many patients even when the surgery itself passes without complication. Removal of the whole colon with ileorectal anastomosis (as performed for inflam - matory bowel disease) is best studied; subtotal resections with ileosigmoid or caecorectal anastomosis are alternatives. Outcomes vary greatly and are often compromised by ear ly problems of ileus and a higher than expected rate of adhesional small

bowel obstruction. Later problems include ongoing constipation and obstructive symptoms, diarrhoea and urgency , abdominal pain and bloating. Embarking on this procedure requires very careful MDT review , documen - tation of generalised slow-transit constipation and exclusion of a long list of relative contraindications. Stoma A stoma may be used as a definitive procedure, as a guide to further treatment or as salvage from a failed or complicated prior surgical intervention. There are few published data to support evidence-based use; however, an ileostomy may be employed as a guide to colectomy with subsequent resection avoided if ileostomy output is unsatisfactorily high or symp - toms such as pain and bloating are untouched by diversion. As a definitive procedure, there is little evidence in adults to guide the choice of ileostomy or colostomy; however, it is generally considered that slow-transit constipa tion is unsatisfactorily treated by colostomy . Anterograde colonic enema procedures The formation of a conduit to introduce irrigant into the colon is best established in children and in patients with neurological disease. A variety of methods have been proposed to access the caecum either directly , e.g. with a Chait tube caecostomy , or indirectly via the appendix (appendicostomy). The latter is almost certainly preferable although only possible when the

Prolapse procedures for dynamic structural causes of ob structed defecation Hitching procedures, e.g. rectopexy Rectal wall excisional procedures, e.g. stapled transanal rectal resection (STARR) Rectovaginal reinforcement procedures, e.g. posterior vaginal repair, intra-anal Delorme’s procedure Procedures for slow-

transit constipation Colectomy and ileorectal anastomosis Other variants of subtotal colectomy Procedures for refractory chronic constipation in general Stoma: ileostomy or colostomy ACE procedures Neuromodulation

The appendix can be reversed (Malone anterograde continent enema technique) or used in its native orientation (much simpler). Outcomes in adults with chronic constipation are variable but generally this is a good option in patients consid ering colectomy or stoma as the only alternative. Neuromodulation The attraction of being able to treat chronic constipation with a minimally invasive and safe approach such as sacral neuromodulation is supported by research data showing that stimulation improves motility and also some observational data. It is now clear from randomised trials that it has no role for slow-transit constipation but it may yet have a place in modifying anorectal function in some patients with severe functional syndromes leading to obstructed defecation (as it does for the bladder).

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