

Constipation: definition and classification

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Summary

When a patient complains of constipation it is important to find out exactly what is meant by the term. A detailed history, general physical examination, digital examination of the anus and rectum, sigmoidoscopy and possibly barium enema or other investigations are needed to exclude recognized clinical causes of decreased bowel frequency or difficulty in passing the stools.

Among patients without obvious disease, a frequency of fewer than three bowel actions weekly is found in less than 1% of the population. Some patients complaining of decreased bowel frequency in fact pass a normal number of stools each week.

The intestinal transit rate of patients complaining of constipation may be measured simply using radio-opaque markers. Those patients with a normal transit rate do not need chemical or osmotic laxatives, though a bulk laxative may be helpful. Patients with a slow transit rate appear to need regular laxatives. A few patients are seen who conceal their bowel actions. Some young patients have a normal transit rate round the colon but stools accumulate in a large and insensitive rectum. These patients do not require laxatives so much as training and local treatment to help the rectum to empty.

Introduction

Constipation is a symptom and, like all symptoms, it is difficult to define. It is a common symptom for one in twenty-five of over 1000 people interviewed at their work considered themselves to be constipated. It is interesting, however, to analyse what these people meant by the term. About half of them had fewer than five bowel actions a week, a small proportion described their stools as hard but had a bowel action on most days and over a third had a daily bowel action with a stool of normal consistency (Connell *et al.*, 1965).

Senses in which patients use the term 'constipation'

These findings are supported by clinical ex-

perience that patients complaining of constipation may mean different things by the term. The frequency of their bowel actions may be less than 'normal', their stools may be difficult to pass, or they may have a sense of malaise or abdominal discomfort which they attribute to a 'sluggish bowel', though the stool frequency and consistency are apparently normal. It is important, therefore, to find out exactly what constipation means to each patient.

There are recognizable clinical causes of decreased bowel frequency and of difficulty in passing the stools. In most cases, however, no clinical cause is apparent and it is then important to decide whether a functional abnormality is present or whether the main problem is one of education and reassurance.

Recognizable clinical causes of decreased bowel frequency

When defaecation occurs infrequently, at intervals of weeks or months, and then only in response to laxative or enemas, the problem of defining the term constipation hardly arises. Very often in these circumstances, a structural abnormality of the intestine or a systemic disorder is present. The conditions known to be associated with decreased bowel frequency may be summarized as follows:

Lesions of the gut	Aganglionosis	} Hirschsprung's disease Chagas' disease
	Obstruction Idiopathic megacolon	
Neurological		
Metabolic	Hypercalcaemia Porphyrria Drugs	
Endocrine	Hypothyroidism	
Psychiatric	Depression	

Hirschsprung's disease is usually diagnosed and treated during infancy but it may also be diagnosed for the first time in adult life. The condition may be recognized radiologically by the typical narrow distal segment and histologically

in biopsy specimens from this segment by the absence of ganglia in the autonomic nerve plexuses. There is a rare form of aganglionosis in which most or the whole of the colon is involved and these cases are difficult to diagnose because the colon appears normal radiologically (Stone, Hendrix & Schuster, 1965). Chagas' disease, due to infection with *Trypanosoma cruzi*, is an acquired form of aganglionosis and should always be considered in patients coming from South America, particularly Brazil (Ferreira-Santos, 1961).

Idiopathic megacolon is characterized by a dilated distal segment of bowel which extends down to the anus. The condition referred to later as the 'terminal reservoir syndrome' may be a variant in which the rectum only is enlarged and in which the main problems are faecal impaction in the rectum with spurious diarrhoea and faecal incontinence, rather than decreased bowel frequency.

Neurological lesions do not generally present with constipation alone but tend to be associated with bladder symptoms.

Of the metabolic causes of decreased bowel frequency hypercalcaemia should be specially considered if the patient also complains of thirst. Chronic barbiturate intoxication, the frequent use of calcium or aluminium containing antacids, and anti-cholinergic drugs are examples of drug-induced constipation.

Hypothyroidism must always be remembered and can be difficult to diagnose in the early stages.

A depressive illness is perhaps one of the commonest conditions seen by a physician and a complaint of constipation may be a prominent feature.

Recognizable clinical causes of difficult defaecation

Constipation, meaning difficult or painful defaecation, is usually due to hardness of the stools. However, a structural lesion may be apparent such as an anal fissure. Sometimes, a hard faecal mass collects in the rectum and it is too great in diameter to pass through the anus. Such a mass often resists vigorous purgation, enemas and wash-outs and has to be broken up and removed digitally.

Parks, Porter & Hardcastle (1966) have described a syndrome in which a sense of incomplete rectal emptying, with an urge to strain repeatedly and for long periods, is associated with the passage of mucus per rectum and often with dull aching pain in the perineal and sacral region. In these patients, the anal margin is either situated

several centimetres below the normal level of a line drawn between the coccyx and the lower border of the symphysis pubis, or it rapidly descends 3–4 cm, as compared with the normal of less than 2.5 cm, below this line on straining. On digital examination during straining the anterior rectal wall is pushed down onto the examining finger and on proctoscopy during straining the anterior rectal wall bulges down into the instrument and follows it as it is withdrawn. Because of these findings the condition has been termed the 'descending perineum' syndrome. The sense of incomplete rectal emptying, which the patient believes to be due to stool in the rectum, may be due to the prolapse of mucosa into the sensitive anal region. This prolapse may in turn be due to the weakness of the pelvic floor muscles with consequent loss of the normal right-angle bend between the rectum and anal canal. These patients often complain bitterly of their symptoms and they are not helped by laxatives. Once the condition is recognized, they can be greatly helped by explanation of the way in which their symptoms arise, advice to avoid straining, a single daily and effortless evacuation of the rectum using a suppository, injection treatment of the prolapsing mucosa and faradism to the pelvic floor muscles.

Definition of functional constipation in terms of bowel frequency

The majority of patients who complain of decreased bowel frequency have no structural abnormalities of the bowel or general illness, though abnormalities of colonic muscle function may in some cases be demonstrable (Connell, 1962). It is important that a normal range of bowel frequency should be defined so that deviation from normal may be recognized.

Very few surveys of bowel frequency in the general population have been published. Parks (1943) conducted a survey among 1115 postal employees and found that 6.3% had less than one bowel action daily. Hardy's (1945) finding among 440 nurses was similar in that 9% had less than one bowel action daily.

In view of the meagre data on this subject, a survey has been conducted among 1055 workers, who were not seeking medical advice, in three factories and among 400 patients without known bowel disorder attending a general practitioner's surgery. Most of the subjects had five to seven bowel actions weekly and in the remainder a frequency greater than one bowel action daily was more common than a frequency less than five times weekly. In the combined series of 1455 subjects, 99% fell within the limits three bowel

actions weekly to three bowel actions daily. A definition of constipation as a bowel frequency of less than three bowel actions weekly would include only 0.8% of the population studied.

Two interesting correlations emerged from the study. First, those with a bowel frequency of less than three times weekly were all women. Their ages ranged from 20 to 50, most regarded themselves as constipated and most took regular laxatives. Second, there was no obvious correlation of bowel frequency with age though there was a clear correlation between the frequency with which laxatives were taken and increasing age. Whether this increase in laxative taking is due to a natural decrease of bowel frequency with age or to the effect of a laxative habit prevalent some years ago is not known; circumstantial evidence favours the suggestion that it is an effect of up-bringing (Connell *et al.*, 1965).

Definition of functional constipation in terms of transit rate through the gut

By using radio-opaque insoluble pellets, it is possible to measure the transit rate through the gut very simply, either by taking X-rays of the abdomen at intervals or by taking X-rays of the stools (Hinton, Lennard-Jones & Young, 1968). The results may be analysed in terms of the time taken to pass the first marker and of the time taken to pass 80% of the markers. In a series of twenty-five normal male subjects all passed the first marker within 72 hr, twenty-one passed 80% of the markers within 3 days, twenty-four within 5 days and all within 7 days. The upper limits of normal may therefore be taken as 3 days for the first marker and 5 days for 80% of the markers. Investigation of a series of twenty-eight patients complaining of constipation, in whom no structural or general abnormality was found on investigation, showed that some patients fell within the normal range as defined above, but the majority fell outside it. Fifteen of the patients took more than 3 days to pass the first marker, one patient having no bowel action at all without vigorous treatment. Eighteen patients took more than 5 days to pass 80% of the markers, the time in one being 11 and in another 15 days.

It is thus possible to define a functional abnormality in terms of slow transit rate through the bowel in some patients complaining of decreased bowel frequency.

Classification of functional constipation

The intestinal transit rate of patients who complain of decreased bowel frequency may be investigated in the following simple way:

Stop all laxatives immediately before and dur-

ing the test. Ask the patient to record the date and time of all bowel actions.

Day 1. Give twenty radio-opaque markers with breakfast.

Day 4. Plain abdominal X-ray at 09.00 hours.

Day 6. Plain abdominal X-ray at 09.00 hours.

The position and number of the markers are noted. If twenty markers remain on day 4 and more than four markers remain on day 6 transit is slow.

Using this technique, thirty-seven consecutive patients complaining of constipation in whom structural or systemic disease had been excluded, could be divided into the following groups:

(a) *Patients with a normal intestinal transit rate*

Some of these patients were taking laxatives from habit even to the extent of producing a daily liquid stool. Other patients were apparently suffering from the irritable bowel syndrome and were also troubled by abdominal pain or a sense of distension. Certain of these patients passed frequent very small stools.

It is suggested that patients in this group require mainly reassurance and explanation, a bulk laxative may be helpful but cathartics should be avoided and the patient should be weaned from them if necessary.

(b) *Patients with slow intestinal transit rate*

In this group of patients radio-opaque markers travelled slowly through the whole length of the colon. These patients appear to need a regular laxative sufficient to give a soft, but not liquid and not necessarily daily, stool. The best type of laxatives for these patients is not yet established.

An interesting sub-group comprised three patients whose transit rate was slow but who denied having their bowels open despite clear evidence to the contrary. These patients appear to need a regular laxative and psychiatric help is also indicated.

(c) *Patients with the terminal reservoir syndrome* (Bodian, Stephens & Ward, 1949)

The radio-opaque markers in these patients passed at a normal rate round the colon to reach the rectum on the 2nd or 3rd day, the markers then remained in the rectum for several days before being passed.

These patients were young and complained more of faecal incontinence than of constipation. Rectal examination revealed gross faecal impaction and the incontinence could be ascribed to reflex inhibition of the anal sphincters with spurious diarrhoea. Further investigation revealed a very capacious rectum, distension of which failed to produce local sensation though it might produce abdominal pain.

These patients have a rectal defect and the aim of treatment should be to keep the rectum empty. This can be achieved by explaining the situation to the child and his parents and by encouraging a regular and daily attempt at defaecation, half to one hour after using a stimulant suppository containing glycerine or bisacodyl. A laxative may be needed but is less important than rectal stimulation.

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