

# SURREPTITIOUS LAXATIVE ABUSE - AN UNUSUAL CAUSE OF CHRONIC DIARRHOEA

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## ABSTRACT

Laxative abuse is an unusual but probably under-recognized cause of chronic diarrhoea. We describe two patients diagnosed to have this condition in our unit over a five-year period. The typical patient is a female presenting with severe, large-volume, watery diarrhoea. There may also be abdominal pain, weight loss, nausea, vomiting and hypokalemia. By the time of diagnosis most patients would have seen several physicians, been hospitalised on one or more occasions, and some would even have undergone operations for their conditions. A high index of suspicion is required to make the correct diagnosis. Unnecessary and repeated investigations can then be avoided, even though treatment may not be satisfactory.

**Keywords :** cathartics, substance abuse, Munchausen's syndrome, hypokalemia, female

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## INTRODUCTION

Chronic diarrhoea can be a difficult diagnostic problem. Multiple investigations are often required, some of which can be expensive and not entirely devoid of risks. Although laxative abuse is uncommon it is probably an under-diagnosed condition. We describe two patients seen recently in our unit to illustrate how this condition presents and how the correct diagnosis can be made.

## CASE REPORT

### Case 1

A 78 year-old Armenian lady was referred from another hospital because of diarrhoea. This started two years previously, resolved spontaneously over about six months, but then recurred over the last three months. Bowel frequency was up to 20 times daily. The stools were watery, brownish, containing mucus and occasional streaks of blood. She denied any abdominal pain. There was anorexia and weight loss.

There was a 12-year history of sero-negative rheumatoid arthritis which particularly affected her knees so that she was restricted to a wheel-chair most of the time. She had been on various non-steroidal anti-inflammatory drugs on and off. There was also

longstanding hypertension for which the patient was on propranolol. The patient stayed in an old folk's home. Her only relative was a brother in Hong Kong.

Although slightly pale, the patient was not dehydrated and general and abdominal examinations were unremarkable. Investigations included : Haemoglobin – 9.89 g / dl, ESR = 45 mm / hr, total white count =  $14 \times 10^9/L$ . A blood film showed mild microcytosis and hypochromia. Serum folate was 5.1 ug/l; vitamin B12 405 ng/l. Serum iron was 41 ug/dl (60-152); total iron binding capacity was 229 ug/dl (216-336). Serum urea was 106 mg/dl, sodium 129 mmol/l, potassium 3.1 mmol/l, chloride 98 mmol/l, creatinine 2.0 mg/dl, random glucose 111 mg/dl, magnesium 2.0 mg/dl (1.7 - 2.3). Liver function tests showed an albumin of 28 g/l (30-55) but were otherwise unremarkable.

Stool examinations for amoeba, cysts and fat as well as stool culture were negative on several occasions. Barium meal showed duodenal diverticula in the second part of duodenum. Small bowel enema and abdominal ultrasound examinations were normal. Colonoscopy showed no abnormality. Rectal and low duodenal biopsies showed no diagnostic features while bone marrow aspirate showed reactive changes.

The following 24-hour stool volumes were recorded : 1.1 litre, 1.5 litre, 1.65 litre. With a 48 hour fast the stool output dropped to 1 litre on the first day and 450 mls on the second. A specimen of stool showed an osmolality of 432 mosm/kg, sodium 58 mmol/l, potassium 14.3 mmol/l, chloride 106 mmol/l, bicarbonate 5 mmol/l. There was therefore an osmotic gap of 287 mOsm/kg [stool osmolality -  $2 \times ([Na] + [K])$ ], indicating the presence of poorly absorbable solutes in the faecal water. Phenolphthalein was detected in the stool. The stool magnesium concentration was elevated at 35.6 mmol/l indicating that the patient had been taking magnesium-containing laxative preparations. There was therefore evidence of surreptitious purgative intake.

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The patient denied this despite confrontation with the biochemical findings. However, her diarrhoea settled for the remainder of her hospital stay. She declined follow-up and we understand her diarrhoea has since recurred.

## Case 2

A 44-year old Chinese lady was first seen in 1984 for the problem of watery diarrhoea up to 10 times daily with intermittent rectal bleeding, upper and lower abdominal pain, giddiness and headaches. Pulmonary tuberculosis was diagnosed and treated 10 years previously. She was under psychiatric follow up for depressive illness and had a previous admission for drug overdose.

Clinical examination was unremarkable. Blood count, liver and thyroid function tests were normal. Urea and electrolytes were normal except for hypokalemia on several occasions. Chest X-ray showed no active lesions. Gastroscopy, colonoscopy, small bowel series and abdominal ultrasound examinations were normal. Proctoscopic examination revealed haemorrhoids. Low duodenal biopsy and stool culture and microscopic examinations for parasites were negative on multiple occasions.

Twenty-four hour stool volumes were up to 1700 ml. During a 48 hour fast volumes fell to 500 ml and 475 ml. Phenolphthalein was not detected. There was a stool osmotic gap of 75 mosm/kg but the magnesium level was not elevated.

Her haemorrhoids were treated by ligation and injection and her other problems treated symptomatically. The cause of her diarrhoea could not be established despite referral to another centre for investigation. Finally, about 3 1/2 years after initial presentation, a locker search was performed during a hospital stay and several white tablets were recovered. These were found to contain diacetylphenolisatin, used as a laxative. She was not directly confronted with this finding but repeatedly denied taking laxatives. She continued to have diarrhoea.

## DISCUSSION

Surreptitious laxative abuse presents with chronic diarrhoea. Stool frequency is usually high and may exceed 10-20 movements per day. Abdominal pain, weight loss, nausea, vomiting and generalised weakness are associated features. There is an overwhelming (> 90%) predominance of woman in all reported series (1-5). Nearly all patients have seen a large number of physicians and have been admitted to hospital several times. A significant percentage of patients have been operated on because of diarrhoea-related symptoms, sometimes on repeated occasions (2, 4, 6, 7).

Factitious diarrhoea is an uncommon problem. Thus only seven of 200 consecutive patients referred for diarrhoea of uncertain origin to a gastroenterological unit turned out to have purgative abuse (8). On the other hand, this diagnosis features prominently amongst patients with chronic diarrhoea whose aetiology remains unclear despite extensive investigation. Thus seven of 27 such patients referred to a specialist centre from other gastroenterologists turned out to have this diagnosis (3).

Factitious diarrhoea is rare and facilities for complete laxative analyses are not readily available. In practice, therefore, the common causes of diarrhoea should be ruled out first. Stool examination for fat, parasites and enteric pathogens, radiographic and/or endoscopic evaluation of the stomach, small and large intestine, as well as studies for malabsorption are usually required. Uncommon hormonal causes of diarrhoea eg. hyperthyroidism, carcinoid syndrome, gastrinoma, VIPoma should be excluded if facilities are available.

Studies on stool volume and composition are usually performed in the evaluation of chronic diarrhoea. Accurate measurement of stool weight or volume excludes causes of small-volume diarrhoea especially functional disorders. Response to fasting helps to differentiate between the two common forms of severe organic diarrhoea ie. osmotic and secretory. Osmotic diarrhoea abates with cessation of oral intake while secretory diarrhoea remains unabated. An osmotic gap ie. stool osmolality -  $2 \times ([Na] + [K])$  of > 50 mosmol/L favours osmotic diarrhoea and infers the presence of unabsorbed solutes. Laxative-induced diarrhoea can be either osmotic or secretory in type.

A high index of suspicion is essential although several features suggest factitious diarrhoea. The presence of melanosis coli at sigmoidoscopy or colonoscopy or in rectal biopsies indicates use of anthraquinone laxatives. In a patient with diarrhoea who denies the use of laxatives, this signifies surreptitious diarrhoea. The 'cathartic colon' with dilatation and reduced haustration on barium enema examination has similar implications. The appearance of a pink-red color upon alkalinisation of urine or stool suggests the presence of phenolphthalein which can be confirmed by specific spectrophotometric assay. Elevated levels of magnesium in the stool (> 24 mEq/l) or urine (> 16 mEq/day) suggest prior ingestion of magnesium-containing preparations which may be used as laxatives (2). Specific assays for the detection of anthraquinones and bisacodyl are not readily available.

The room and locker search poses moral, legal and ethical problems. However, if felt to be indicated, the search should be done by at least two staff members to guard against a possible claim of theft.

Patients who abuse laxatives surreptitiously usually have several psychological problems. These may include neurosis, hysteria and obsessional paranoia. This self-induced illness gives the patient the emotional gain of receiving sympathy and attention and of escaping from conflicts at home or at work (7). The degree of awareness of their motivation varies from person to person and may actually be subconscious (9). In addition, there may be more than one motive and new motives may evolve. An important characteristic is the compulsive nature of the behaviour and the tenacity with which the patient persists in her actions.

The treatment of laxative abuse is to stop the laxative intake. Unfortunately, this may be as difficult as, if not more difficult than, coming to the correct diagnosis. When patients are confronted with the findings, different reactions may be observed. They may deny the use of laxatives while continuing to take them (4,7,10). Some do stop taking the laxatives (3,4). Others admit their abuse with indifference. Some even attempt suicide (4,11).

Understanding the underlying motivation may help. Our first patient may, for example, benefit from more visits from family and friends. Another possibility is arranging for her to have a room mate. While psychiatric help should be offered, it is often unsuccessful. Many patients often discharge themselves and refuse further treatment (4). If the patient refuses psychiatric help and refuses to admit purgative abuse, she should be persuaded to attend regular outpatient follow-ups. Even though the patient cannot be cured, her electrolyte and nutritional

status could be monitored and further or repeated investigations avoided.

In conclusion, laxative abuse is an uncommon cause of chronic diarrhoea. It is also a difficult diagnosis to arrive at : a difficulty which can only be matched by attempts at a treatment. However, knowing the diagnosis, the physician can at least avoid further extensive investigations and treatment. Our two patients illustrate some of the problems encountered in the investigation and treatment of such patients.

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