Clinical features and follow-up of surreptitious laxative users[1]

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Surreptitious laxative use may mimic several organic diarrhea syndromes, including inflammatory bowel disease and secretory diarrhea. Seventeen cases of surreptitious laxative use were uncovered within five years at the Cleveland Clinic. Characteristic features included diarrhea, abdominal pain, nausea and vomiting, and weight loss. Findings on physical examination were nonspecific, and laboratory and roentgenographic studies were not helpful. Two patients were also covertly taking diuretics. The diagnosis was made by stool analysis for phenolphthalein and by room search. Psychiatric treatment, although not always accepted or helpful, was recommended in each case. Follow-up indicated that about half the patients had improved once the diagnosis was established.

Index terms: Cathartics • Diarrhea
Cleve Clin Q 51:167–171, Spring 1984

The workup of patients with chronic diarrhea can be complex, cumbersome, expensive, and sometimes unrewarding in establishing a diagnosis.[1] The patient who surreptitiously ingests laxatives in order to cause diarrhea presents a special diagnostic challenge.[2–4] Other than clinical suspicion, there may be no clues as to the cause of the patient's illness in the absence of melanosis coli on proctoscopic examination[5] and cathartic colon on barium enema studies.[6] We review our clinical experience with surreptitious laxative users and describe the clinical features and follow-up of these patients.

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Materials and methods

Charts of patients with complaints of diarrhea attributed to surreptitious laxative use within the five-year period between 1 January 1978 and 31 December 1982 were reviewed. Data retrieval included personal experiences, review of medical records for diagnosis of laxative abuse, and review of laboratory records for stools positive for phenolphthalein. Simple laxative abusers and patients who used laxatives as part of another illness, i.e., anorexia nervosa, and admitted it were exluded. For each patient, features of the history, physical examination, laboratory studies, and radiographs, along with results of psychiatric interventions, when performed, were noted. Follow-up was done six months or more after diagnosis by means of a telephone interview with a standard set of questions. Presence of phenolphthalein in the stool was determined by addition of sodium hydroxide to a stool aliquot, which was then observed for a typical color change.

Results

A total of 17 patients who had surreptitiously taken laxatives was found,16 by positive stool examination and one by a room search (*Table 1*). Sixteen were women; age at the time of diagnosis ranged from 20 to 57 years, with a mean of 37 years. Four patients were medical workers: one was a hospital histology technician, and 3 were registered nurses. The duration of symptoms was extremely variable, ranging from four weeks to 15 years, with a mean of 3.1 years.

History: Seven patients described their diarrhea as being "continuous," and only one had intermittent diarrhea of two episodes per month. For those with continuous symptoms, stool frequency per 24-hour period ranged from three to more than 20 episodes. Ten of the 17 patients (58.8%) described the stools as being watery, and 6 (35.2%) occasionally noted blood. Urgency was characteristic for 7 patients (41.1%), and 9 (52.9%) also described nocturnal diarrhea; patient 12 appeared to have secretory diarrhea. All 17 patients (100%) experienced associated abdominal pain; 13 (76.5%) described their pain as cramping. In 8 patients (47.1%) pain was localized to the abdomen. In 4 patients (23.5%) pain coincided with the diarrhea.

Generalized weakness was a presenting complaint or prominent feature in 10 patients (58.8%). Weight loss, which was common, was experienced by 15 of the 17 patients (88.2%) (excluding patient 1 who had been on a weight reduction diet) and ranged between eight and 60 pounds, with an average loss of 24 pounds. One patient reported a 50-pound weight gain. Nausea and/or vomiting were frequent accompaniments, occurring in 13 of the 17 patients (76.5%);

Table 1. Clinical features

Patient/ age/ sex	Occupation	Duration of symptoms	Stool frequency per day	Nausea/ vomiting	Abdominal pain	Weakness	Weight change in lbs.	Prior abdominal operations	Abdominal tenderness	K^+ mEq/L	Proctoscopic examination
1/57/F	Histology technician	3 mo	10–20	+/−	+	−	↓ 150	2	+	3.7	Mucosal erythema
2/29/F	Clerk	5 yr	5–6*	+/−	+	−	↓ 23	4	−	N.A.	Melanosis cell
3/42/F	Housewife	15 yr	10–15*	+/+	+	+	↑ 50	6 or more	+	4.1	Normal
4/48/F	Language professor	9 mo	15	+/+	+	−	↓ 20	0	−	2.6	N.A.
5/49/F	Housewife-RN	2 yr	Constant	+/+	+	+	↓ 40	3	+	4.0	Normal
6/29/F	Housewife	11 yr	6–10*	−/−	+	+	None	2	−	2.9	Mild Crohn's colitis
7/30/F	Teletype operator	9 wk	19	+/+	+	−	↓ 20	4	+	4.3	N.A.
8/26/F	Secretary	7 wk	18–23*	+/−	+	−	↓ 13	0	+	3.6	Normal
9/37/F	Housewife	3 yr	4–6 intermittent	+/+	+	−	↓ 54	4	+	3.9	Normal
10/23/F	RN	4 yr	>20	−/+	+	+	↓ 22	8	+	2.5	Normal
11/20/F	Restaurant manager	2½ yr	10	+/+	+	+	↓ 17	0	−	4.1	Normal
12/50/F	Housewife-RN	1 yr	6–12*	+/−	+	−	↓ 12	3	−	3.8	Normal
13/35/F	Elementary teacher	4½ yr	N.A.	+/+	+	+	↓ 11	6	+	2.4	Normal
14/50/F	Exec secy	4 wk	10–12	−/−	+	+	↓ 8	3	−	4.2	Normal
15/37/F	Model, actress	4 mo	10–20*	−/−	+	+	↓ 10	2	−	4.2	Mucosal friability
16/29/F	Secretary	1 yr	8–15	+/+	+	+†	↓ 60	0	+	3.8	N.A.
17/40/M	Auto worker	2 yr	3–5	−/−	+	+	↓ 26	6	+	4.1	Melanosis coli

* Occasional bloody stools; $^+$present; $^-$ absent; N.A. = not available; †has muscular dystrophy.

nausea and vomiting were the main complaints in patient 13.

All patients had had some prior surgery, and 13 had had abdominal surgery, including patient 10 who had had eight abdominal procedures. Prior significant psychiatric problems were uncovered in 4 patients. Patient 8 had had hysterical seizures diagnosed previously. Patient 3 was dependent on diazepam and narcotics, and patient 11 had a history of multiple suicidal gestures and chronic alcoholism. Patient 15 had a history of drug overdose and hysterical syncope. Patient 10, a registered nurse, had recurrent multiple abdominal abscesses and was suspected of injecting her abdominal cavity with a foreign substance. Five patients had been taking antidepressants, including amitriptyline and doxepin; 5 patients were taking tranquilizers, including chlordiazepoxide and diazepam. Of these, 2 were taking both antidepressants and tranquilizers.

Physical examination and laboratory studies: Several patients were described as thin and cachectic, but findings on physical examination were not specific. Ten patients (58.8%) had abdominal tenderness to palpation, particularly in the lower quadrants. Patient 5 exhibited clubbing of the fingers. Proctoscopic and colonoscopic examinations, when performed, were unremarkable, with the exception of melanosis coli in 2 patients and mild changes of inflammatory bowel disease in one patient with known Crohn's disease. In three instances, proctoscopic examinations were not performed. Patient 4 had had repeated negative gastrointestinal workups, and the stools were promptly reported as positive for phenolphthalein after admission. Patient 7 did not return for the proctoscopic examination ordered, but did submit stool specimens. Patient 16 recently had had a complete colonoscopy just prior to referral.

All patients had gastrointestinal roentgenographic studies, either prior to or after referral. Patients 10 and 13 had had an extraordinary number of radiographic procedures, 55 and 46 examinations, respectively.

Laboratory examinations, including a complete blood count and multichannel biochemical screening, were not helpful. Hypokalemia (serum potassium less than 3.5 mEq/L) was present in 4 patients (23.5%). Patient 1 had a serum amylase of 1,134 U/L (normal 10–135 U/L) at admission. In no instance was renal function significantly impaired.

Patient 5, who had had a previous diagnosis of pseudo-obstruction syndrome, was also found to be surreptitiously taking a diuretic (bendroflumethiazide). She developed rebound edema when treated with intravenous fluids. Patient 4 had a history of surreptitious thyroid use, and furosemide was present on urine testing.

The diagnosis of surreptitious laxative use was made in 16 of the 17 patients (94.1%) by stool analysis for phenolphthalein by alkalinization of the stool specimen and in one patient via room search. In four instances, a room search turned up laxatives; 2 patients also had diuretics.

Outcome and treatment: Patient response to confrontation ranged from ready admission and assent to psychiatric treatment to heated denial. Patient 1 subsequently ingested 12 flurazepam capsules as a suicide gesture and then agreed to psychiatric consultation.

The short-term outcome depended in large part upon the severity of the underlying psychiatric disorder. As an example, patient 11 had the diagnosis of adjustment disorder of adulthood, and improvement was rapid. However, continued psychotherapy was quite unrewarding for patient 13 with conversion, and patient 4, with an ultimate diagnosis of anorexia nervosa, who left the hospital against medical advice.

Follow-up: To assess the impact of evaluation and diagnosis on continued symptoms, a telephone interview consisting of prearranged questions was designed for patients who had been given a diagnosis at least six months previously (*Table 2*).

We contacted 11 of the 13 patients; the follow-up interval ranged from six to 57 months. Five

Table 2. Results of follow-up questionnaire

Case	Follow-up duration (months)	Status since evaluation	Further medical attention required	Days missed from work outside home ↑ or ↓
1	39	Improved	No	↓
2	40	Not improved	Yes	↑
3	29	Not improved	Yes	N.A.
4		Lost to follow-up		
5	57	Not improved	Yes	N.A.
6	19	Improved	No	N.A.
7		Lost to follow-up		
8	15	Improved	No	↓
9	11	Not improved	No	N.A.
10	9	Improved	Yes	N.A.
11	6	Improved	No	↓
12	21	Improved	No	↓
13	48	Not improved	No	↓

N.A. = Not applicable; ↑ = increased; ↓ = decreased.

of the 11 indicated their symptoms had not diminished. Comments from this group included "too many conflicting opinions," "didn't understand explanation," and "not satisfied with explanation," despite the fact the diagnosis had been thoroughly discussed. However, 2 patients with improvement "never heard a definite cause" and "didn't recall the explanation." Four patients felt further medical attention was required and have since been admitted for additional evaluation at other hospitals.

Discussion

The clinical features of our patients with surreptitious laxative use are similar to those reported in other series[1,7] and included complaints of nausea, vomiting, abdominal pain, and weight loss in association with diarrhea. Proctoscopic examination was of little help other than to exclude other causes of diarrhea. A history of prior psychiatric illness was frequent; characteristically, the patients had undergone previous extensive evaluations for diarrhea. Hypokalemia[8] was noted in several patients, and cachexia,[9] finger clubbing,[10] pseudo-obstruction,[11] and rebound edema[12] were also seen. No patient had significant renal impairment.[13]

It is apparent that little in the history leads the physician to suspect surreptitious laxative use in preference to the many other causes of diarrhea. The high incidence of weight loss, nocturnal diarrhea, and blood in the stools makes differentiation from organic diarrheas by history difficult indeed.[1] Moreover, the fact that we uncovered only 17 cases of surreptitious laxative use in a five-year period at a large referral center with a 1,000-bed hospital indicates the relative infrequency of this cause of diarrhea. Thus, it is all the more difficult for the physician to keep surreptitious laxative use prominent in the differential diagnosis in the absence of a high index of clinical suspicion.

Our patients had undergone large numbers of examinations in the past in an attempt to discover the cause of diarrhea. Multiple radiographs with attendant radiation exposure and other inconvenient and expensive tests were the rule rather than the exception. In addition, several patients had undergone one or more laparotomies.

Although the suffering incurred by the patient and family is of prime concern, we cannot begin to quantitate the number of weeks lost from the workplace and the home due to the symptoms of this disorder and their evaluation. The financial cost of medical care can only be estimated, but it is certainly very high. For all of these reasons, the physician should always bear in mind the possibility of surreptitious laxative use in a patient with chronic, unexplained diarrhea.

Based on the current study and previous reports,[1–4] phenolphthalein appears to be a popular cathartic for surreptitious laxative users. However, its popularity may be more apparent than real because phenolphthalein is much easier to detect than are other cathartics; in addition, many of our cases were obtained by examining laboratory records for stools positive for phenolphthalein. Its presence in the stool is readily detected by its pH-dependent color change,[14] a test discovered by serendipity.[15] Alkalinization of a stool specimen with sodium hydroxide is inexpensive, convenient, and can be performed in the office or on the hospital ward, yielding prompt, valuable information. Repeated analyses are necessary since patients may use laxatives intermittently.[7]

Detection of laxatives without phenolphthalein presents a more difficult problem. When melanosis coli is present on either gross or microscopic examination of a rectal biopsy specimen, the use of anthraquinone laxatives such as cascara and senna should be considered. Two of our patients who had melanosis coli may well have been taking these laxatives also. As melanosis coli disappears within four to 12 months after discontinuation of anthraquinones, its continued presence suggests continued use.[5] A thin-layer chromatography technique reportedly detects several absorbable laxatives excreted in the urine.[16] Other types of covert laxative use, including osmotic cathartics, may be more difficult to detect, but methods are available.[17]

The ethical controversy inherent in performing a room search to confirm the suspicion of surreptitious drug use is well recognized.[18,19] On one hand, the physician and the hospital have moral and legal responsibilities to respect the patient's integrity. On the other hand, the physician has a responsibility to the patient to uncover the cause of disabling symptoms. If, after careful appraisal of the case, we feel that surreptitious laxative use is likely, and the diagnosis cannot be otherwise substantiated, we think a room search is justified. In retrospect, in two of the four instances in which a room search was done, the diagnosis could have been established in other ways. In one case it was probably necessary, and in the fourth case the diagnosis could

not have been obtained by the usual measures short of a room search.

Once the diagnosis is established, the physician is still confronted with the problem of what to do next.[2] We feel that in most instances it is appropriate to discuss the findings with the patient. Angry confrontations can usually be avoided by explaining to the patient in a nonjudgmental manner the test results and what they mean. Our patients responded in a variety of ways, ranging from prompt admission of the surreptitious drug ingestion to heated denial. Nevertheless, a psychiatric consultation is usually in order.

Little has been written about the long-term follow-up of patients discovered to be surreptitious laxative users.[1] Although 6 of our patients seemed to have benefited from the diagnosis, it is surprising (and disappointing) that almost as many felt that they had not been helped, and many subjected themselves to further medical evaluations for diarrhea at other institutions. If these relatively poor long-term results can be confirmed, it suggests that the current, conventional treatment strategies, consisting in many cases of short-term psychotherapy, are inadequate.

Surreptitious laxative use is probably more common than is generally believed. The patient who presents with chronic diarrhea, abdominal pain, and weight loss, particularly with a past or present psychiatric disorder, should be suspected of covert laxative use. Appropriate studies to detect laxative use should be performed as they may avoid expensive, unnecessary, prolonged, and repeated evaluations and hospitalizations.

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