Defecation disorders and chronic abdominal pain in children. Pathophysiology and treatment
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Citation for published version (APA): van Ginkel, R. (2002). Defecation disorders and chronic abdominal pain in children. Pathophysiology and treatment

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Chapter 6

Loperamide suppositories
in longstanding
functional non-retentive fecal soiling

a case report

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submitted for publication
1. Abstract

Encopresis in the absence of signs of fecal retention was recently classified as functional non-retentive fecal soiling (FS). In the treatment of idiopathic fecal incontinence in adults, which resembles FS in childhood, the oral application of loperamide is a well established agent. A 20-year old male with FS since childhood was treated with loperamide. Loperamide was given rectally in a dose of 5 mg twice daily. Since the start of medication the encopresis disappeared. No side effects were reported. Discontinuation of the medication immediately resulted in a relapse of encopresis.

2. Introduction

Encopresis is characterized by the voluntary or involuntary passage of a quantitatively normal bowel movement in the underwear after the age of four. In the majority of patients, encopresis is the result of constipation. However, in our practice 20% of children experience encopresis as a single complaint. These children have a normal defecation frequency, no palpable abdominal/rectal fecal mass on physical examination and a normal colonic transit time. Laxatives have no or an adverse effect in these children.

Recently, encopresis in the absence of signs of fecal retention has been classified as functional non-retentive fecal soiling (FS) by the new pediatric Rome-II criteria. The treatment of these children is often disappointing, with only 29% of the patients with FS cured after 2 years of intensive treatment.

Although the complaints are often distressing to the patients and their relatives, the pathophysiological mechanisms (psychological or somatic) underlying FS are poorly understood. Using the Child Behavior Checklist, behavioral problems were shown in 35% of these patients. However, children with initial abnormal behavior scores showed significant improvement of their behavior profiles after successful treatment arguing against a psychological etiology.

The symptomatology of children with FS resembles that of adults with idiopathic fecal incontinence. A study in adults with chronic diarrhea and fecal incontinence showed that the oral application of loperamide, an opioid agonist, resulted in significant improvement of continence. Moreover, loperamide caused a significant increase in basal sphincter pressure, possibly contributing to better sphincter function.

Here, we describe a 20-year-old male with longstanding encopresis who dramatically improved after rectal application of loperamide.

3. Case report

A 20-year old male with primary encopresis was treated and followed at our outpatient clinic since the age of 13. He passed meconium within 24 hours after birth and never experienced any defecation problems during his toddler years. However, at the age of 9, despite a normal defecation frequency, he was still not fully toilet trained. He had no other gastrointestinal
complaints and he had a normal appetite. He was on treatment with a regimen of various kinds of laxatives, prokinetics and mineral oil without any improvement of his defecation problems.

He was referred to our motility unit to exclude Hirschsprung’s disease. At that time encopresis occurred daily. The majority of “accidents” occurred during physical exercise and stressful moments (birthday, school exams). He had a normal urge to defecate, but suffered from urgency resulting in fecal incontinence. Stool consistency was always normal. He also complained of nocturnal enuresis twice a week, whereas daytime enuresis did not occur. Abdominal and rectal examination revealed no signs of fecal retention. Apart from his father suffering from idiopathic fecal incontinence, his family history was negative regarding gastrointestinal disorders. He was not mentally retarded (IQ:89), although he received specialized education, and psychological examination revealed no mental disorders. Anorectal manometry at the age of 12, showed a normal resting and squeeze pressure, normal expulsion profiles and a normal threshold for first sensation (25ml). A normal anorectal inhibition reflex excluded Hirschsprung’s disease. Total colonic transit time measurement, using the Metcalf method (6), was 33.6 hours, well below the upper limit of normal transit (62 hours). (9)

Discontinuation of the longstanding, intensive laxative treatment did not alter his defecation pattern. Subsequently, at the age of 14 years, 5 sessions of biofeedback training were given without clinical improvement. Hereafter, a strict toilet training program (3 times per day for 5 minutes) was recommended without the use of any medication. The patient visited our outpatient clinic every 6 months for follow up. The complaints of encopresis, however, never resolved during the 6 years of follow-up.

Based on adult literature showing beneficial effects of loperamide on fecal incontinence, a trial of loperamide was started at the age of 20. Written informed consent was obtained. Before the actual treatment, a 1-month bowel diary showed a defecation frequency of 20 times per week (on the toilet) with daily encopresis (in his underwear).

To avoid systemic side effects (dizziness, headache, abdominal discomfort, nausea and vomiting) we administered loperamide-suppositories 10 mg 2 times per day (3). After three days he developed constipation and consequently the dose was lowered to 5 mg loperamide twice daily. The next three weeks his defecation frequency was 14 times per week without any episode of encopresis. Stool consistency was normal. No side effects were reported. Discontinuation of the medication immediately resulted in a relapse of encopresis. Currently, 18 months after initiation of therapy, our patient uses loperamide 5 mg daily and remains continent without any side effects.

While on treatment with loperamide-suppositories, the father (54 years) of our patient confessed that he had the same complaints as his son. He was never toilet trained during his life. The father had a defecation frequency of 25 times per week, but lost stool involuntarily once a day. At the same time he started to use loperamide-suppositories 10 mg twice daily. From then on his defecation frequency normalized and complaints of encopresis disappeared. He never developed constipation. He never experienced any side effect.
4. Discussion

Encopresis in children older than four years of age, is a frequent reason to consult the pediatrician. Despite the high prevalence of encopresis, 1-2% in otherwise healthy schoolchildren, a first visit to the pediatrician, as in our patient, is frequently delayed because of shame and cultural taboos. In our motility unit, 80% of children with encopresis fulfill the criteria for childhood constipation. Encopresis in these cases is often due to impaired rectal sensation as result of prolonged fecal retention. The majority of these children have encopresis several times during the day. In contrast, in the remaining 20% of patients with encopresis no other criteria for constipation can be identified. These children have been classified as functional non-retentive fecal soiling (FS) by a group of experts.

Recently, we observed the occurrence of rectal contractions accompanied by unnoticed fecal loss during barostat studies in some of these patients (submitted). These rectal contractions were not followed by an adequate increase in anal sphincter pressure preventing fecal loss. These observations show resemblance with manometric studies in idiopathic fecal incontinence and chronic diarrhea accompanied by fecal incontinence in adults. As loperamide has been shown to increase anal sphincter pressure, we evaluated its effect in our patient with FS.

Immediately after initiation of loperamide 10 mg, our patient developed constipation. Decrease of the dose to 5 mg 2 times per day resulted in a complete disappearance of the encopresis episodes with daily defecation and no side effects. During follow-up he experienced a relapse of complaints when discontinuing medication.

Loperamide, an opioid-receptor agonist, inhibits peristaltic movement by reducing the release of acetylcholine and prostaglandin, during distension in vitro. It is a well-established agent in the treatment of adults with chronic diarrhea accompanied by fecal incontinence and patients with fecal incontinence after surgery. Moreover, a clinical benefit of loperamide is reported in children with fecal incontinence resulting from neurological disorders or surgical procedures. A decrease in rectal contractions and an increase in rectal volume at which the internal anal sphincter remains continually relaxed was described in adults with fecal incontinence on oral loperamide. Side effects like nausea, vomiting, abdominal pain and abdominal distension, are observed only on high orally administered doses. To elicit the effect of loperamide in the anorectal region, it has been administered topically in the rectum, possibly simultaneously reducing a systemic effect and side effects.

As we did not assess anorectal motility, we can only speculate on the mechanism of action of loperamide in our patient. Since he had a normal defecation frequency and a normal stool consistency, the beneficial effect of loperamide was not due to its anti-diarrheal effect. Therefore, it is most likely that rectal application of loperamide reduced encopresis by increasing the basal anal internal sphincter pressure and/or decreasing rectal contractions.

To our knowledge, this is the first report of the potential effect of loperamide, an opioid-receptor agonist, in the treatment of functional non-retentive fecal soiling. Although our patient was not a child anymore when we first administered loperamide-suppositories, he suffered from encopresis since he was 9 years of age. Since the nature of the patients complaints apparently remained unchanged throughout his childhood and adolescence and were unaffected by any form
of treatment, we believe it is warranted to present this case as functional non-retentive fecal soiling in childhood/adolescence.

A large prospective placebo-controlled trial is underway to further evaluate the potential benefit of rectal application of loperamide in the treatment of functional non-retentive fecal soiling in childhood.
Reference List


