The Cause of Rectal Prolapse in Children

William T. Zempsky, Beryl J. Rosenstein, MD

- Fifty-four pediatric patients with rectal prolapse (RP) were identified by review of medical records from 1977 to 1987. Rectal prolapse was attributed to chronic constipation (15 patients), acute diarrheal disease (11 patients), cystic fibrosis (CF) (six patients), and neurologic/anatomic abnormalities (13 patients). In nine patients, no underlying cause was identified. The patients with CF did not differ from the other groups in terms of age at time of onset of prolapse, growth measurements, or number of episodes of prolapse. All patients with CF had a history of abnormalities or presented with signs and symptoms consistent with this diagnosis; none had a history of constipation. Although physicians can be reassured that CF is not a likely diagnosis, a test is indicated in all such cases as well as in those in which there is no apparent underlying cause. A test is not usually indicated in patients with RP in association with underlying anatomic abnormalities.

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Rectal prolapse (RP) is a common complication in patients with cystic fibrosis (CF), occurring in 18% to 23% of patients before definitive diagnosis.1,2 Rectal prolapse has also been reported in association with diarrheal disease,8 ulcerative colitis,9 chronic constipation,10 malnutrition,11 Hirschsprung's disease,12 Ehlers-Danlos syndrome,13 meningomyeloce1,1 pertussis,12 rectal polyps,6 and following surgical repair of anorectal anomalies.8 A test is recommended to rule out CF in all patients presenting with RP.1,2 We attempted to determine the cause of RP in pediatric patients presenting with this complaint and to focus on the associated clinical findings in patients with an eventual diagnosis of CF.

PATIENTS AND METHODS

We attempted to retrieve the charts of all patients younger than 18 years of age who presented to The Johns Hopkins Hospital, Baltimore, from 1977 to 1987 with a complaint of RP. Records were obtained from the following sources: hospital medical records (ten patients), pediatric gastroenterology clinic (four patients), general pediatric surgery clinic (two patients), sweat test referrals (22 patients), and the pediatric emergency room and walk-in clinics (16 patients). The diagnoses of all patients were identified by their pediatricians except those seen in the pediatric emergency room and walk-in clinics, who were brought in for evaluation by the emergency department and identified as having RP. In patients with RP, episodes of RP secondary to constipation may be seen in patients with CF. The patients with CF, four of six were equal to or less than the 25th percentile for weight compared with 11

![Associated Diagnoses in Patients With Rectal Prolapse](image-url)
of 35 patients without CF.

The six patients who were eventually confirmed to have CF all had a history of abnormal (loose) stools at the time of presentation with RP. None had a history of constipation. We therefore compared the six patients with CF with the 11 patients without CF who had acute diarrhea at the time of RP. The two groups were similar for age at presentation with RP, growth variables, and number of episodes of RP. Repeated episodes of RP were seen in all six patients with CF and in eight of the 11 patients with acute diarrhea.

However, there were clinical clues to the underlying diagnosis in all six patients with CF, including loose stools (six patients), poor growth pattern (four patients), wheezing (one patient), history of meconium plug syndrome (one patient), family history of CF (one patient), and digital clubbing (one patient). Among the 11 patients with acute diarrhea, one had a history of wheezing and one had a history of recurrent upper respiratory tract infections. Respiratory symptoms (wheezing) were prominent in only one of the patients with CF.

**COMMENT**

Cystic fibrosis has been cited as the most common cause of RP in children in the United States. The diagnosis of CF needs to be considered in all children who present with RP, and a diagnostic sweat test is recommended for all such patients. These recommendations were based on studies that approached RP by examining a population of patients with CF rather than examining a group of patients presenting with RP. In other countries, particularly developing countries, most cases of RP have been attributed to acute diarrheal disease and intestinal parasitic infestation, usually in association with malnutrition. In a study from India, among 80 children with RP, diarrhea was present in 84%, two thirds of whom had amebiasis.

The results of our study suggest that, at least in the United States, most instances of RP are not related to CF but rather to stool abnormalities, such as acute diarrhea and chronic constipation, or neurologic or anatomic defects. Among 41 children who presented with RP and who did not have an anatomic defect, a diagnosis of CF was eventually established in only six patients (14.6%). These results are similar to those reported in a study from the Soviet Union. Among 418 children with RP, underlying problems included colitis (39.6%) and chronic constipation (27%), along with a variety of other problems, including anorectal anomalies and respiratory problems. Cystic fibrosis was not specifically mentioned.

The patients with and without CF in our study did not differ in terms of age at time of initial RP, growth status, or frequency of episodes of RP. However, all of the patients with CF had a history of chronic stool abnormalities, including the passage of greasy, oily, malodorous, and/or floating stools. None of the patients with CF had a history of constipation. Careful review of the records of the patients with CF revealed that clues to the underlying diagnosis were present in all six patients. Most helpful was a stool history consistent with fat malabsorption. It is of interest, and possibly misleading, that only one of the patients with CF had a history of significant respiratory symptoms. Among the 11 patients with acute diarrhea, only one had a history that was at all suggestive of CF.

On the basis of our results, it is clear that CF needs to be considered in patients presenting with RP. In this regard, it is important to obtain a careful history to identify stool and respiratory problems, family history, and history of neonatal stool problems, and to evaluate for the presence of growth failure and digital clubbing. However, it is important not to be dissuaded from the diagnosis of CF by the absence of respiratory symptoms or normal results of a physical examination.

Our results indicate that the majority of cases of RP in children are not related to CF but rather to constipation or acute diarrheal disease. In such instances, physicians can usually be reassured that CF is not a likely diagnosis. Because of the difficulty in differentiating diarrhea from steatorrhea by history, we recommend that a quantitative pilocarpine iontophoresis sweat test be carried out in all patients with RP who report loose stools. A sweat test is also indicated in all instances of RP in which there is no apparent underlying cause. In patients with RP in association with underlying anatomic abnormalities, a sweat test is not usually indicated. In patients with a clear history of constipation and no other abnormalities according to history or on physical examination, the likelihood of CF is probably very small. However, in view of the ease of performing a sweat test and the potentially disastrous consequences of missing the diagnosis of CF, a sweat test is indicated in all such patients.

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**References**