

Duodenal Stenosis Caused by *Helicobacter Pylori*: Mimicker of Chronic Constipation

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Abstract

Although the most common causes of childhood chronic constipation are functional, a minority have an organic cause. We report an 11-year-old girl who was diagnosed as chronic constipation, but actually suffered from duodenal stenosis caused by *Helicobacter pylori*. An enhanced computed tomography was useful for investigation. Duodenal stenosis should be listed as a differential diagnosis for childhood chronic constipation.

Key words: Duodenal stenosis, Chronic constipation, Enhanced CT

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Introduction

Chronic constipation remains one of the most frequent complaints in pediatric clinics¹⁻³. Chronic constipation is mainly functional:⁴ very small fraction of it is caused by organic disorders³⁻⁵. Although various differential diagnoses have been reported^{3,4}, duodenal stenosis caused by *Helicobacter pylori* is not well known. Herein we report an 11-year-old girl who was diagnosed as chronic constipation, but actually suffered from duodenal stenosis caused by *H. pylori*.

The Case

All procedures followed were in accordance with the ethical standards of the responsible committee (Tara Town Hospital, Japan) and with the Helsinki Declaration of 1975, as revised in 2013. Written informed consent was obtained from the family members of the patient for the publication of this report.

An 11-year-old girl with an unremarkable medical history suffered from repeated vomiting, abdominal pain, and constipation. She was diagnosed as chronic constipation at the age of 10 years. When she experienced the above symptoms, she was given medical treatments such as an enema, oral magnesium, and oral picosulfate. The frequency of vomiting and abdominal pain increased at the age of 11 years. We performed an enhanced computed tomography (CT) to determine some underlying conditions. We found that the duodenum wall being edematous (Figure 1). Endoscopic examination revealed duodenal stenosis and multiple duodenal ulcers (images not shown). Examination on the biopsized specimen revealed *H. pylori* in the duodenal ulcerative lesions.

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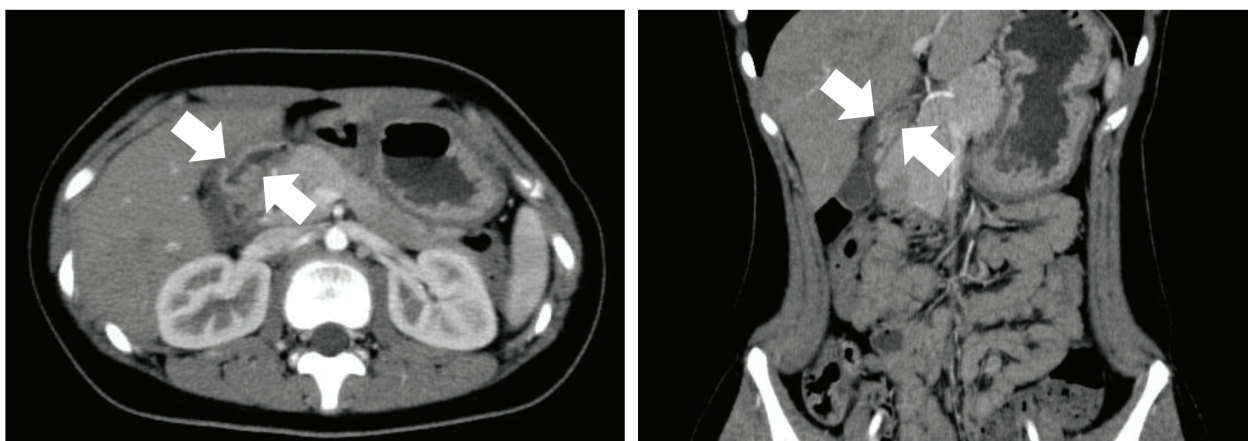


Fig 1: Edematous changes (arrows) in the duodenum were detected by an enhanced CT scan.

She received medications to eradicate *H. pylori*. A urea breath test was employed to evaluate the effectiveness of the eradication. The first-line agents administered, including clarithromycin, amoxicillin, and vonoprazan, did not eradicate *H. pylori*. The second-line agents administered, including metronidazole, amoxicillin, and vonoprazan, successfully eradicated *H. pylori*. After the eradication, she has not suffered from repeated vomiting and abdominal pain for more than 11 months. Endoscopic examination revealed amelioration of duodenal stenosis and duodenal ulcers.

Discussion

The courses of the present case illustrate two important clinical issues. First, duodenal stenosis can be a mimicker of childhood chronic constipation. The symptoms of duodenal stenosis and chronic constipation include repeated vomiting and abdominal pain. Correct diagnosis is important because the treatments for these diagnoses are different. The present patient's course well illustrated the pitfalls for management of childhood chronic constipation.

Second, an enhanced CT may be useful for examining the underlying conditions in pediatric patient with chronic constipation. Presently, CT revealed duodenal stenosis. CT can be performed on children with little invasiveness and it promptly give us information of the organ structure. The duodenal edema/swelling here revealed by CT was non-specific; however this prompted us to employ further strategies, including an endoscopic examination, leading to a definitive diagnosis.

Chronic constipation is a common and long-lasting childhood disorder^{6,7}. Careful consideration of the medical history and a physical examination can exclude other differential diagnoses in most patients without thorough medical examinations. Dietary interventions, behavioral modifications, and oral medicines, such as magnesium, lactulose, and sorbitol, are recommended to ensure that bowel movements occur at normal intervals with good evacuation in the daily management of constipation^{4,8,9}. When the management is complex, there is concern that an organic disease may exist, and pediatricians should reevaluate the diagnosis. The present patient's course demonstrated that duodenal stenosis caused by *H. pylori* may be one of the differential diagnoses for pediatric chronic constipation. Eradication using antibiotics and a proton pump inhibitor may ameliorate duodenal stenosis caused by *H. pylori*. An indwelling stent^{10,11} and duodenectomy¹², which are highly invasive for children, should be considered in severe duodenal stenosis cases. Eradication of *H. pylori* ameliorated duodenal stenosis in the present patient without an invasive procedure.

Conclusion

Duodenal stenosis can be a mimicker of chronic constipation. An enhanced CT is useful to detect some organic underlying conditions behind pediatric chronic constipation. We should be aware that pitfalls can be hidden even in usual management of chronic constipation. Further studies are needed to determine whether duodenal stenosis caused by *H. pylori* can become a major differential diagnosis for childhood chronic constipation.

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