

Chronic Gastroduodenitis in Children: A Case Report

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ABSTRACT

Recurrent abdominal pain is the most common symptom experienced by children around the world and causes high rates of children absent from school. Gastroduodenitis is a disease with abdominal pain symptoms. The initial clinical symptom was dyspepsia. In most pediatric cases the etiology is unknown (idiopathic). This study presented a case of gastroduodenitis in a 10-year-old boy hospitalized with the chief complaints of heartburn, accompanied by vomiting. The patient has a history of the same complaint in the last 3 months ago, causing the patient to be admitted to the hospital repeatedly. Pain is not relieved by defecation or flatus. On physical examination, tenderness was found in the epigastric and umbilical regions. Chronic gastroduodenitis was confirmed after endoscopic examination and tissue biopsy. Therapy including proton pump inhibitors and lifestyle modifications can improve the child's condition. In the case of gastroduodenitis, it is important to prevent complications, so proper examination and prompt treatment are needed for the sufferer.

Keywords: Gastroduodenitis; Child; Abdominal pain



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Introduction

Gastroduodenitis is inflammation of the two parts of the gastrointestinal tract, namely the stomach and duodenum caused by food, drugs, chemicals, stress, and bacteria which can be acute, chronic, diffuse, or local.¹ The most common clinical symptoms are a burning sensation in the epigastrium, vomiting or gastrointestinal bleeding.² The incidence of gastritis in the world today is relatively high. According to the World Health Organization (WHO) in 2016, the incidence of gastritis in Southeast Asia is around 583.635 of the total population each year. The prevalence of endoscopically confirmed gastritis in Shanghai population is around 17,2% which is substantially higher than the Western population, which is 4,1% and asymptomatic.³ The causes of gastritis are divided into internal factors, such as the presence of conditions that trigger excessive gastric acid secretion, and external factors that cause irritation and infection.⁴

The clinical symptoms of gastritis and duodenitis are generally the same. The patient initially experienced abdominal discomfort like dyspepsia syndrome. Symptoms vary and are not specific, especially in children. Usually, the child is brought to the doctor because of persistent abdominal pain. The recurrent character of the complaint interferes with the child's normal activities, and prompts the doctor to initiate extensive diagnostics. Further investigation to determine the underlying etiology with endoscopic examination and tissue biopsy. Gastroduodenitis is classified into acute and chronic based on the inflammatory infiltrate.^{5,6} This report highlights a rare case of chronic gastroduodenitis in children. The diagnosis in this case was made based on endoscopy and tissue biopsy after the patient had the same complaint in the last 3 months before admission to the hospital.

Case

A 10-years-old boy was referred on November 3rd, 2021, to Dr. Wahidin Sudirohusodo Hospital Makassar with complaints of heartburn 1 day before being admitted to the hospital. Pain is felt intermittent, noticed not every day. Pain is like a burning sensation in the pit of the stomach, the pain improves when the patient takes painkillers. Pain is not relieved by defecation. There is nausea, accompanied by vomiting frequency 2 times, does not spray, contains leftover food and water. Children are lazy to eat and drink. Urinating smoothly, yellow. Regular, yellow bowel movements, hard consistency.

Three months before being admitted to the hospital, the patient often experienced the same complaints, causing the patient to be readmitted to the hospital. The patient had a history of being diagnosed with salmonellosis 2 months before hospital admission and had a history of black stools, at that time the patient was given antibiotic therapy and a proton pump inhibitor. After being treated for 1 week

the patient showed clinical improvement and then outpatient. However, the patient was hospitalized again one week ago with the same complaint and improved after taking ranitidine. The patient is known to have a habit of snacking while at school outside the supervision of his parents.

Physical examination showed no typical symptoms. The general condition appeared to be moderately ill, good consciousness, overweight, and vital signs within normal limits. Physical examination of the abdomen revealed tenderness in the epigastrium and umbilical region, with a pain scale of 4 NRS. Based on history and physical examination, the patient met the Rome IV criteria with symptoms; recurrent abdominal pain in the epigastric region that is bothersome, burning abdominal pain, felt > 1 day/week in the last 2 months, bowel movements of hard consistency, nausea and vomiting and pain symptoms do not decrease with defecation.

Laboratory examination revealed reactive thrombocytosis, while other blood chemistries were within normal limits. From the ultrasound examination of the abdomen and photos of gastric duodenography that had been done when the patient was admitted to the hospital previously, the results showed no abnormalities. This prompted a further endoscopy examination, so the patient was referred to the Internal Medicine section and an Upper Gastrointestinal Endoscopy (UGIE) and tissue biopsy were performed. The UGIE results showed grade I superficial pangastritis and grade III duodenitis dd/Inflammatory Bowel Disease, Crohn's Disease type.

From the results of histopathological examination of tissue biopsies with Giemsa staining, the results showed that the gastric mucosal lamina propria showed infiltration of lymphatic inflammatory cells and solid histiocytes, and in the duodenum mucosal lamina propria there was an influx of inflammatory cells of lymphocytes and solid PMN leukocytes, no signs of malignancy were found.

The impression from the histopathological examination was chronic gastritis and active chronic duodenitis. Based on the history, physical examination, and supporting examination, the proposed working diagnosis is chronic gastroduodenitis.



Fig. 1: Upper Gastrointestinal Endoscopy (UGIE) Result

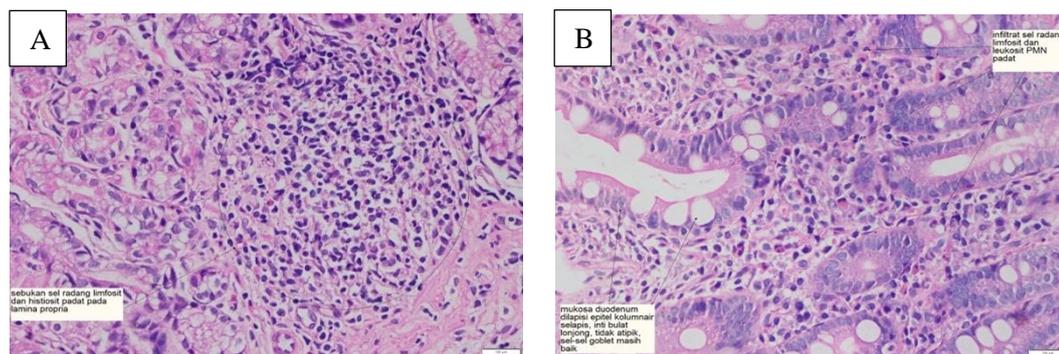


Fig. 2: (A) Lamina propria of gastric mucosa with Giemsa stain: inflammatory cells of lymphocytes and histiocytes. (B) Lamina propria of duodenal mucosa with Giemsa stain: inflammatory cells of lymphocytes and solid PMN leukocytes.

The patient was treated with omeprazole injection, metronidazole injection, and probiotics. During hospital monitoring for 2 weeks, the patient experienced clinical improvement, and was allowed outpatient treatment with oral omeprazole, and oral metronidazole continued for 7 days at home. Education is needed to modify the patient's diet and lifestyle.

Discussion

Our case presented with recurrent abdominal pain and vomiting. Most adolescents with chronic abdominal pain met the criteria for functional abdominal pain disorder as defined by the Rome criteria.⁷ Several factors that cause gastritis include the use of NSAID drugs, *Helicobacter Pylori* infection, frequent stress, and irregular eating habits. Duodenitis is usually due to things that irritate the intestinal wall such as the use of aspirin, NSAIDs, and excessive gastric acid secretion.^{4,8} Although the symptoms are not severe, they can interfere with the quality of life.⁹

The clinical manifestation of gastroduodenitis in children tends to be asymptomatic until a pathological component is found such as erosion, ulcer, perforation, and or malignancy.¹⁰ Early gastritis symptoms include epigastric pain, bloating, early full sensation, and nausea. In erosive gastritis patients, symptoms such as lower weight, hematemesis, melena, cyclic vomiting, and nocturnal pain are frequently found. Some of those symptoms were also found in this patient starting from three months before current hospital admission. Due to recurrent hospitalization, patients are advised to undergo an endoscopic examination test. Because endoscopic examination requires hemodynamic stability and the patient has complaints, the patient must be admitted to the hospital a few days before the examination day for observation.

The results of the endoscopy examination showed that there had been superficial pangastritis and duodenitis differential diagnosis with Inflammatory Bowel Disease (IBD) Chron's disease type (Figure

1). However, the results of tissue biopsy analysis concluded that chronic gastritis and active chronic duodenitis occurred (Figure 2). No signs of malignancy were found. Endoscopic examination is specific diagnostic support for gastritis and duodenitis both acute and chronic.¹¹ Histopathological examination can distinguish between acute and chronic inflammation.¹²

Treatment of both gastritis and duodenitis is aimed at eliminating aggressive factors that irritate the mucosa and increase its mucosal defenses.¹² The first-line therapy of gastroduodenitis is Proton Pump Inhibitor (PPI) as this patient was receiving for two weeks. Sucralfate was also suggested for patients with abnormal gastric morphology such as erosion.¹³ The effectiveness of probiotics has been shown to reduce clinical symptoms due to side effects of drugs in gastritis sufferers.¹⁴ If constipation was found, it can be caused lack of fiber in the patient's diet. Therefore, lifestyle modification such as consuming high-fiber food as also rehydration fluid is highly suggested. Dietary therapy for patients with gastrointestinal disorders is to provide a diet of soft foods with small portions, given 3 times complete meals and 2-3 times snacks. Laxatives could also help the improvement of constipation as it decrease fecal viscosity.^{15, 16} This patient was discharged from the hospital after being treated and improved by clinical symptoms. The Patient suggested further endoscopy follow-up examination test in the next month.

Conclusion

Early diagnosis and prompt treatment of gastroduodenitis are strongly important to prevent the complications such as ulcer pepticum which can even develop into a malignancy. Definitive diagnosis of gastroduodenitis based on endoscopic examination and biopsy results. The physicians should focus on a proper history and physical examination of the symptoms of recurrent abdominal pain.

Conflict of Interest:

The authors declare that they have no competing interests.

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