

CASE REPORT

Gerd and Psychiatric Disorders in 17-Year-Old Women

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Abstract

Background: Gastroesophageal Reflux Disease (GERD) is a pathological condition characterized by the reflux of gastric acid into the esophagus, with typical symptoms of heartburn and regurgitation. Psychological disorders are associated with many GERD disorders. The purpose of this paper is to determine the correlation between GERD and psychological disorders, particularly depression and anxiety. **Case:** In this research study, a 17-year-old female complained of vomiting, nausea, heartburn, shortness of breath, and a bitter taste in the tongue. The patient felt easily fatigued, lacked enthusiasm, and lost interest in activities. Physical examination revealed general weakness, a hyperemic pharynx, and epigastric tenderness. The patient was cooperative, maintained eye contact, but was unable to maintain it, and was in a dysphoric mood and consistent affect. Endoscopy revealed hyperemia of the esophagus and stomach, suggesting chronic active gastritis. **Discussion:** GERD is a multifactorial disease. In this case, stress and anxiety were linked to GERD. GERD and depression share many similar neurobiological mechanisms, including the "brain-gut" axis, which plays a crucial role in both comorbidities. GERD treatment principles include lifestyle modifications and both medication and non-medication therapies. **Conclusion:** Chronic GERD, which can occur concurrently with or trigger psychological disorders, is certainly dangerous for patients, and further research is needed to determine effective treatment.

Keywords: GERD, psychiatric disorder, patient, special case

INTRODUCTION

According to the American College of Gastroenterology, Gastroesophageal Reflux Disease (GERD) is defined as a condition of reflux of gastric acid into the esophagus due to chronic weakness of the Lower Esophageal Sphincter (LES) [1, 2]. The prevalence of GERD in Indonesia

varies around 9.35% in the general population when using the GERD questionnaire (GERD-Q) [3, 4]. The prevalence of GERD in early adolescence is influenced by various risk factors such as genetics, lifestyle, use of drugs, especially NSAIDs, smoking, excess body weight, diet, such as eating high-fat foods, consumption of carbonated drinks, and coffee. Psychological

factors, such as depression and anxiety, can also increase the risk of persistent GERD symptoms. The clinical manifestations of GERD in adolescents and children are almost the same as in adults, namely in the form of regurgitation and heartburn. Heartburn is a burning sensation in the epigastric region, often called heartburn, while regurgitation is a condition of reflux characterized by a bitter and sour taste on the tongue. Other symptoms that may be found include bloating, dysphagia, nausea, odynophagia, and difficulty sleeping at night. In addition, extra-esophageal symptoms may be present, including chronic cough, wheezing, recurrent pneumonia, hoarseness, halitosis, sore throat, and tooth erosion [3, 5]. GERD symptoms primarily occur at night, causing a decrease in the patient's quality of life, such as sleep disturbances and decreased work productivity. Sleep disorders have an impact on anxiety and depression in patients [4, 6].

The mental health of children and adolescents is a fundamental aspect that influences social development, quality of life, and future academic success. Mental health disorders, including depression and anxiety in children and adolescents, have become a serious problem in recent decades [4, 6–8]. The rate of depressive disorders experienced by children and adolescents is predicted to reach 10%. Anxiety itself is a common mental disorder. Anxiety is generally indicated by hyperactivity, fear, and uncontrolled worry. Although various tools for measuring anxiety are now available, including the Generalized Anxiety Disorder Scale, the Screen for Child Anxiety Associated Disorders, the Depression, Anxiety, and Stress Scale, or other measuring tools and scales, the WHO explains that approximately 10-20% of children and adolescents globally experience anxiety and

depression at some point in their lives, which ultimately leads to learning difficulties, self-harm, decreased motivation, and even suicide [9–12]. These disorders affect not only emotional well-being but also physical, cognitive, and social functioning. Children and adolescents with anxiety and depression experience decreased academic achievement, withdraw from social interactions, and are at high risk for mental disorders.

CASE PRESENTATION

A 17-year-old A was brought by his family to the Emergency Room of Roemani Hospital Semarang on March 15, 2025, complaining of vomiting for 2 days. The vomit was a yellowish-white liquid that was preceded by nausea. The vomiting was continuous, with a frequency of 8-9 times a day, disrupting sleep and daily activities. There were no factors that alleviated or aggravated the patient's complaints. Other complaints included pain in the pit of the stomach and shortness of breath that were felt intermittently and had occurred for 2 days before admission. The patient also had a bitter taste on the tongue, resulting in decreased appetite. He denied complaints of fever, cough, and bowel and urinary disorders.

The patient was hospitalized on February 17-21, 2025, with similar complaints. The patient had been undergoing treatment with a pediatrician for the past 3 years, but the complaints continued to recur. The family stated that the patient had experienced the same complaints repeatedly since 2022 and was diagnosed with GERD. In the past year, the patient had experienced similar complaints more than 5 times, and they arose whenever the patient experienced a problem. The doctor advised the

patient to undergo an endoscopy and consult a psychiatrist. In January 2025, the patient underwent an endoscopy at Kariadi General Hospital, with results showing hyperemia and petechiae in the esophagus and stomach, as well as rough mucosa and ulcers in the gastric fundus, suggesting chronic active gastritis and esophagitis. The patient had also consulted a psychiatrist for one month in January 2025, with a diagnosis of anxiety and depression.

There were no similar complaints in the patient's family. The patient admitted to having a habit or tendency to think about events excessively and repeatedly (overthinking). The patient's mother stated that there were problems in the family that were suspected to be the initial trigger for the patient's complaints. Furthermore, the complaints also occurred when the patient was performing a heavy task. The patient admitted to having a habit of lying down after eating and frequently consuming spicy foods [13, 14].

Physical examination was conducted in the ward on March 15, 2025. The results of the physical examination were *compos mentis* consciousness, general condition appeared weak, spontaneous breathing was adequate, appearance was appropriate for the age. Vital signs were blood pressure 110/80 mmHg, respiratory rate 21×/minute, pulse 80×/minute, height 157 cm, temperature 36.7 °C, weight 50 kg, BMI 20.3 (normal). General examination found dry lips, hyperemic pharynx, and epigastric tenderness. Mental status examination found normoactive patient behavior, patient behavior, and attitude towards the examiner were cooperative, there was eye contact but could not be maintained, a hypothymic mood, and appropriate affect. The patient received therapy in the form of lansoprazole 3 x 30 mg capsules,

sucralfate suspension 3 x 100 mg/5 ml, and domperidone 3 x 10 mg tablets. In addition, psychotherapy was provided to the patient and family, including education about the disease and medication administration.

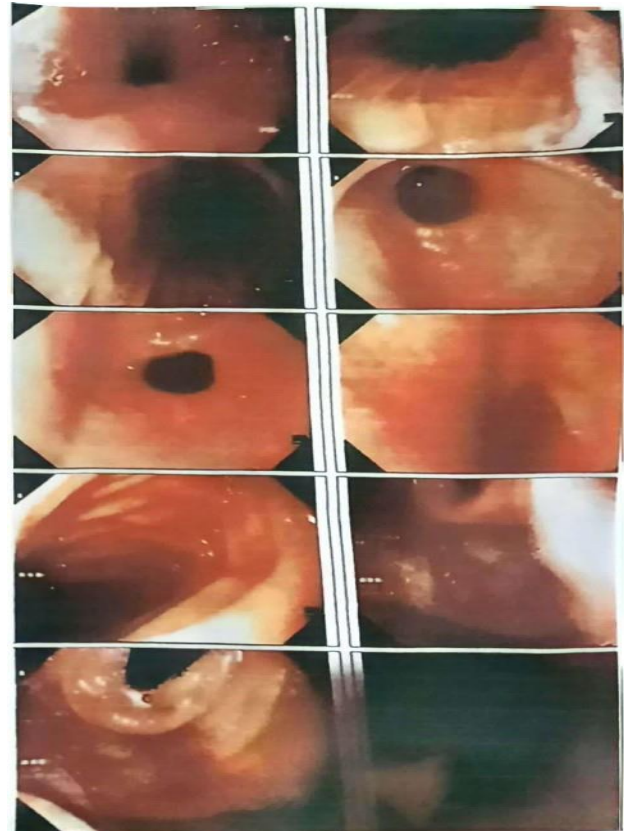


Figure 1. Endoscopy

DISCUSSION

From the patient's anamnesis findings on March 15, 2025, the main complaint of SMRS was vomiting for 2 days, yellowish white in color, with a frequency of 8-9 times a day, with other complaints of heartburn, bitterness at the base of the tongue, and shortness of breath. So, this is related to the theory obtained, where the most common symptoms of GERD are a burning sensation in the chest (heartburn), heartburn, and regurgitation. In several studies that have been conducted, it is stated that acidic fluids are corrosive (damaging the esophageal mucosa,

whose structure is different from the stomach), causing the esophageal mucosa to become hyperemic, erosive, or even ulcerated, causing nausea, vomiting, and heartburn [12, 15, 16]. The rising stomach acid can also irritate the respiratory tract or trigger reflex bronchospasm, which is why An. An experienced shortness of breath [17, 18].

During the anamnesis related to RPD, it was discovered that in January 2025, An. A had undergone an endoscopic examination at Kariadi General Hospital and found signs of active chronic gastritis and esophagitis. The purpose of the endoscopy was to confirm the diagnosis, assess the severity of mucosal damage, and ensure there were no other complications such as severe esophagitis or Barrett's esophagus [19, 20]. In the same month, An. A was examined by a psychiatrist because of problems that disturbed his feelings long before the onset of gastrointestinal symptoms. The results found anxiety disorders and depression. Previous research has shown that one of the factors contributing to the development of GERD is psychological factors. Psychological factors, namely anxiety, can contribute to the development of GERD, where anxiety or emotional tension can affect the function of the digestive tract [21, 22]. The severity of gastrointestinal disorders can also be influenced by anxiety, where anxiety can induce pain perception through gut-brain axis activity. Anxiety can also directly precede the onset of GERD manifestations by stimulating gastric acid reflux by increasing gastric acid secretion, altering esophageal motility, and decreasing lower esophageal sphincter muscle pressure.^{23,25} However, it should be emphasized that psychological factors are not

the only cause or aggravating factor of GERD [23–25]. An A's lifestyle also has a significant influence, as the patient's history revealed that she often lies down after eating and likes spicy foods. This is very much in line with the theory. Although the sphincter closes after food enters the stomach, the purpose of not immediately lying down is to reduce pressure on the stomach and optimize the digestive process. If lying spontaneously down, food and stomach acid can more easily rise into the esophagus due to gravity. In addition, an upright position also helps the stomach empty its contents more efficiently [26, 27].

Physical examination findings were compos mentis consciousness, general condition appeared weak, spontaneous breathing was adequate, and the appearance was appropriate for age. Vital signs were obtained: pulse 80x/minute, blood pressure 110/80 mmHg, temperature 36.7 °C, respiratory rate 21x/minute, height 157 cm, weight 50 kg, BMI 20.3 (normal). General examination found dry lips, hyperemic pharynx, and epigastric tenderness. Several studies have found that stress and anxiety can make GERD symptoms worse, which in turn can cause weakness, either due to dehydration from repeated vomiting or anhedonia from depression [28, 29]. And in line with previous research that hyperemic pharynx and epigastric pain are signs of acid fluid rising to the pharyngeal wall. Epigastric pain arises due to irritation of the mucosa in the stomach. In this case, it is important to establish a diagnosis of GERD by looking at the GERD-Q (Gastroesophageal Reflux Disease – Questionnaire), which is a questionnaire that includes six questions related to the classic symptoms of GERD, the impact of GERD on the

quality of life of sufferers, and the effect of medication use on symptoms in the past week. Referring to the GERD-Q assessment, if a score of >8 is obtained, it means the patient has a high tendency to experience GERD; therefore, further evaluation is needed. The GERD-Q can also be used to monitor the response to therapy. In An. A, the GERD-Q score was [30].

Table 1. GERD-Q

| No. | Questions | Score frequency | | | |
|--------|---|--|-------|----------|----------|
| | | 0 day | 1 day | 2-3 days | 4-7 days |
| 1. | How often do you experience a burning sensation behind your breastbone (heartburn)? | 0 | 1 | 2 | 3 |
| 2. | How often do you experience stomach contents rising into your throat/mouth (regurgitation)? | 0 | 1 | 2 | 3 |
| 3. | How often do you experience heartburn? | 3 | 2 | 1 | 0 |
| 4. | How often do you experience nausea? | 3 | 2 | 1 | 0 |
| 5. | How often do you have trouble sleeping at night because of heartburn and/or reflux? | 0 | 1 | 2 | 3 |
| 6. | How often do you take additional medications for heartburn and/or reflux, other than those prescribed by your doctor? | 0 | 1 | 2 | 3 |
| Result | | If your GERD-Q score is ≤7, you probably don't have GERD. If your GERD-Q score is 8-18, you probably have GERD. | | | |

A mental status examination revealed normoactive behavior, cooperative behavior,

and unstable eye contact. The patient's mood was hypothyroid and affect appropriate. When compared with psychiatric theory, the findings suggest depression. However, the classification is less specific. Depression itself has three distinct types: mild, moderate, and severe.

In addition to identifying major and minor symptoms, we can observe the patient's gestures to determine whether they are hypoactive, dysphoric, or hypothyroid.²⁰ A depressive disorder (F.33) can be diagnosed if the above symptoms have been present for more than two weeks. However, if prominent symptoms, such as suicidal ideation, are present, the diagnosis can be made immediately [31].

Unlike anxiety disorders, in psychiatric theory, anxiety disorders are characterized by excessive fear of the future. They are commonly referred to as panic disorders or anxiety disorders (F 41.0). Relapses typically last 20-30 minutes, and the onset must have been present for more than one month. So, when compared with the findings obtained, there is less detail in showing whether the patient is included in mild/moderate/severe depression.

The patient received therapy in the form of lansoprazole 3 x 30 mg capsules, sucralfate suspension 3 x 100 mg/5 ml, and domperidone 3 x 10 mg tablets. And psychotherapy for the patient and family in the form of education related to the disease, and the provision of medication to the patient. The use of Lansoprazole (PPI) as part of the treatment of esophagitis/ulcers due to reflux or gastric acid is in accordance with the guideline that PPI is the main choice for healing esophagitis/ulcers. The latest literature states that PPI is the "mainstay" in patients with esophageal mucosal damage/erosive esophagitis (EE). Then, in terms

of dosage, the latest literature recommends PPI once daily, or a maximum of twice daily for difficult cases. The guideline states: "initial management standard - dose PPI once daily for 4-8 weeks" for erosive esophagitis grade A/B. For severe cases (LA grade C/D) or severe ulcers, twice-daily dosing or longer duration may be considered, but three times daily is not commonly mentioned.

However, other literature suggests that, given the presence of an ulcer/mucosal damage, more aggressive therapy is indeed relevant. Many studies suggest that if erosive esophagitis or an ulcer is present, long-term or high-dose maintenance therapy should be considered. The authors acknowledge that while some studies have found an association between long-term use and adverse events, these studies are flawed, and high-quality data have not demonstrated an increased risk of pneumonia, gastric cancer, osteoporosis-related fractures, chronic kidney disease, vitamin and mineral deficiencies, heart attack, stroke, dementia, or mortality. Although an increased risk of intestinal infections has been observed with long-term PPI use, the ACG guidelines state that long-term PPI use carries inherent benefits that outweigh its risks, but the possibility of adverse events identified in observational studies cannot be completely ruled out.

These guidelines provide several recommendations during long-term PPI use. In patients without risk factors for bone disease, increased vitamin D and calcium intake is unnecessary, and routine bone mineral density monitoring is not necessary. In patients without risk factors for vitamin B12 deficiency, routine vitamin B12 monitoring and vitamin B12 supplementation are not necessary.

Furthermore, in patients without risk factors for kidney disease, routine monitoring of serum creatinine levels is not necessary; however, if there is a diagnosed renal insufficiency, close monitoring and consultation with a nephrologist are recommended [5, 30]. Regarding the use of domperidone, the literature indicates that prokinetic/motility agents (such as domperidone) are only recommended when there is a clear indication of impaired gastric emptying or esophageal motility, not as routine therapy for reflux with normal mucosal damage.

Guidelines from the American Gastroenterological Association (AGA) also state that prokinetics such as metoclopramide or domperidone are not recommended as routine adjunctive agents in esophageal GERD. Regarding the use of sucralfate, the latest literature suggests that sucralfate has only a limited role, for example, in pregnancy or when PPIs cannot be used, or in certain gastric ulcers. In primary erosive esophagitis, evidence for sucralfate as a primary adjunctive agent is very limited. For example: "The addition of prokinetics to a PPI offers no benefit in EE [30, 31].

The case study reveals a unique relationship between the two conditions, which are interconnected and exacerbate the patient's condition. Anxiety and depression can cause GERD, and conversely, GERD symptoms can also cause psychological disorders, namely anxiety and depression [3, 32].

The reason I am publishing this case is that, as a prospective healthcare professional, it is important to understand the connection between GERD and psychiatric disorders for more appropriate prevention and treatment, as well as to increase self-awareness of the complex

interactions between physical and mental conditions.

The benefits of this clinical report are: First, it can provide a deeper understanding of how physical conditions like GERD can affect mental health, and vice versa. Second, it can help medical practitioners identify potentially interrelated symptoms, allowing for more comprehensive treatment. Third, it can serve as a reference for further research and help develop a more integrated treatment approach.

CONCLUSION

This case describes a 17-year-old female patient, A., diagnosed with Gastroesophageal Reflux Disease (GERD) accompanied by anxiety and depression. Based on the history, physical examination, and supporting tests (endoscopy and GERD-Q score = 9), a diagnosis of GERD was confirmed. A mental status examination revealed a hypothyroid mood with symptoms suggestive of anxiety and depression. Psychological factors have been shown to exacerbate GERD symptoms through increased gastric acid secretion, decreased LES pressure, and altered esophageal motility.

RECOMMENDATIONS

Conversely, chronic physical symptoms due to GERD can exacerbate the patient's psychological state, creating a two-way cycle between the body and the mind. In addition to psychological factors, the patient's lifestyle, such as frequently lying down after eating and consuming spicy foods, is also a contributing factor.

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