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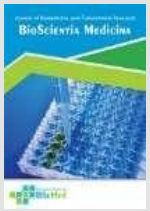

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Concurrent Hiatal Hernia, Gastric Polyp, and Lupus Nephritis in an Adolescent: A Case Report

Andyan Yugatama[1*], Yusri Dianne Jurnalis[2], M. Iqbal Rivai[3], Irwan[3]

[1]Resident, Department of Child Health, Faculty of Medicine, Universitas Andalas/Dr. M. Djamil General Hospital, Padang, Indonesia

[2]Lecturer, Department of Child Health, Gastrohepatology Division, Faculty of Medicine, Universitas Andalas/Dr. M. Djamil General Hospital, Padang, Indonesia

[3]Lecturer, Department of Digestive Surgery, Faculty of Medicine, Universitas Andalas/Dr. M. Djamil General Hospital, Padang, Indonesia

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***Corresponding author:**
Andyan Yugatama

E-mail address:
andyanyugatama@yahoo.com

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A B S T R A C T

Background: The coexistence of hiatal hernia (HH), gastric polyp, and lupus nephritis in an adolescent patient presents a unique clinical challenge, demanding a multidisciplinary approach to diagnosis and management. This case report aims to highlight the complexities involved in addressing these concurrent conditions and their implications for patient care. **Case presentation:** A 16-year-old girl with a history of systemic lupus erythematosus (SLE) and lupus nephritis presented with recurrent abdominal pain. Esophagogastroduodenoscopy (EGD) revealed a hiatal hernia and an esophageal polyp. The patient underwent laparoscopic gastrofundoplication for the hiatal hernia, and the polyp was subsequently removed via polypectomy. Histopathological examination confirmed a hyperplastic gastric polyp. The patient's postoperative course was complicated by electrolyte imbalances and dysphagia, which were managed successfully. **Conclusion:** This case underscores the importance of a thorough diagnostic workup in adolescents with SLE presenting with gastrointestinal symptoms. The concurrent presence of HH, gastric polyp, and lupus nephritis necessitates a multidisciplinary approach involving gastroenterologists, surgeons, rheumatologists, and other specialists. Careful attention to potential complications, such as electrolyte imbalances and dysphagia, is crucial for optimal patient outcomes.

1. Introduction

Systemic lupus erythematosus (SLE) is a complex and multifaceted autoimmune disease characterized by the production of autoantibodies and the formation of immune complexes, leading to a cascade of inflammatory responses that can affect multiple organ systems. The clinical manifestations of SLE are diverse and can range from mild, intermittent symptoms to severe, life-threatening complications. The disease predominantly affects women of childbearing age, with a peak incidence between 15 and 44 years.[1] The etiology of SLE remains elusive, but it is believed to involve a complex interplay of genetic, environmental, and hormonal factors.[2] The gastrointestinal (GI) tract is frequently involved in SLE, with manifestations ranging from mild dyspepsia to severe complications such as GI bleeding, perforation, and pancreatitis.[3] The mechanisms underlying GI involvement in SLE are multifactorial and include direct tissue damage by autoantibodies and immune complexes, vasculitis, and drug-induced side effects.[4] The most common GI manifestations of SLE include abdominal pain,

nausea, vomiting, diarrhea, and constipation.[5] However, less frequent manifestations such as esophageal dysmotility, intestinal pseudo-obstruction, and protein-losing enteropathy can also occur.[6] Lupus nephritis, a major complication of SLE, is characterized by inflammation of the kidneys, leading to proteinuria, hematuria, and impaired renal function.[7] The prevalence of lupus nephritis varies depending on the population studied and the diagnostic criteria used, but it is estimated to affect approximately 50% of patients with SLE.[8] Lupus nephritis is a significant cause of morbidity and mortality in SLE, and its presence is associated with a worse prognosis.[9] The management of lupus nephritis typically involves immunosuppressive therapy, including corticosteroids and other agents such as mycophenolate mofetil, cyclophosphamide, and rituximab.[10]

Hiatal hernia (HH) is a condition in which the upper part of the stomach protrudes through the diaphragm into the chest cavity. It is classified into four types based on the anatomical relationship between the gastroesophageal junction (GEJ) and the diaphragm.[1] Type I HH, also known as sliding HH, is the most common type and is characterized by the upward displacement of the GEJ above the diaphragm. Type II HH, or paraesophageal hernia, involves the herniation of the gastric fundus alongside the esophagus, with the GEJ remaining in its normal position. Type III HH is a combination of types I and II, while type IV HH involves the herniation of other abdominal organs, such as the colon or spleen, into the chest.[2] HH is relatively uncommon in children and adolescents, with an estimated prevalence of 0.1-1.8%.[3] The etiology of HH in this age group is often congenital, and associated with diaphragmatic defects or other developmental abnormalities.[4] However, acquired HH can also occur due to trauma, increased intra-abdominal pressure, or chronic conditions such as obesity and connective tissue disorders.[5]

The clinical presentation of HH in children and adolescents is variable and depends on the type and size of the hernia, as well as the presence of associated complications. Many cases of HH are asymptomatic and are incidentally detected in imaging studies. However, when symptomatic, HH can cause GERD, leading to heartburn, regurgitation, chest pain, and dysphagia.[6] In severe cases, HH can lead to complications such as gastric volvulus, incarceration, and strangulation, requiring urgent surgical intervention.[7] The diagnosis of HH is typically made based on imaging studies, such as barium swallow or upper GI endoscopy.[8] The management of HH in children and adolescents depends on the severity of symptoms and the presence of complications. Asymptomatic HH may be managed conservatively with observation and lifestyle modifications, such as weight loss and dietary changes. However, symptomatic HH often requires surgical repair, particularly in cases of large hernias or associated complications.[9] Laparoscopic repair is the preferred approach in most cases, offering the advantages of minimally invasive surgery, reduced postoperative pain, and faster recovery.[10]

Gastric polyps are benign growths that arise from the lining of the stomach. They are classified based on their histopathological features, with the most common types being hyperplastic polyps, fundic gland polyps, and adenomas.[1] Hyperplastic polyps are the most frequent type, accounting for approximately 70-90% of all gastric polyps.[2] They are typically small, sessile lesions that arise in the setting of chronic inflammation, often associated with *H. pylori* infection.[3] Most gastric polyps are asymptomatic and are incidentally detected during endoscopy or imaging studies. However, larger polyps or those located near the pylorus can cause symptoms such as abdominal pain, nausea, vomiting, and GI bleeding.[4] The management of gastric polyps depends on their size, location, and histopathological type. Small, asymptomatic polyps may be managed conservatively with surveillance endoscopy. However, larger polyps or those with suspicious features on endoscopy may require endoscopic resection or surgical removal.[5]

The concurrent presentation of HH, gastric polyp, and lupus nephritis in an adolescent patient is

exceedingly rare and poses a unique clinical challenge. The interplay between these conditions can complicate the diagnostic and therapeutic process, requiring a multidisciplinary approach involving gastroenterologists, surgeons, rheumatologists, and other specialists. The management of such a patient necessitates careful consideration of the potential interactions between the various conditions and their respective treatments. This case highlights the importance of a thorough diagnostic workup in adolescents with SLE presenting with GI symptoms. The concurrent presence of HH, gastric polyp, and lupus nephritis necessitates a multidisciplinary approach involving various specialists. Careful attention to potential complications, such as electrolyte imbalances and dysphagia, is crucial for optimal patient outcomes.

2. Case Presentation

The patient is a 16-year-old female with a pre-existing diagnosis of systemic lupus erythematosus (SLE) and lupus nephritis, established 7 years prior to her presentation. Her medical history was also significant for dyslipidemia and hypovitaminosis D. The patient had been under consistent management for these conditions, receiving medications including prednisone, simvastatin, lisinopril, calcium, and vitamin D supplements. The SLE and lupus nephritis were reported to be stable at the time of presentation. The patient's chief complaint was intermittent abdominal pain, primarily located in the epigastric region, which had been ongoing for a month prior to her admission. The pain was described as occurring shortly after meals, without a specific pattern or timing, and resolving spontaneously. She denied any association of the pain with specific food types or activities. The patient also reported experiencing occasional regurgitation and vomiting, with the most recent episode occurring a week before admission. Additionally, she described infrequent episodes of heartburn, particularly during the night. The patient denied any recent changes in appetite, weight loss, or alterations in bowel or bladder habits. The patient's past medical history was notable for SLE with lupus nephritis, dyslipidemia, and hypovitaminosis D. She had no history of prior surgeries or hospitalizations. Her family history was unremarkable for any autoimmune diseases or gastrointestinal disorders.

On physical examination, the patient appeared moderately ill but was alert and oriented. Her vital signs were within normal limits, with a blood pressure of 110/70 mmHg, heart rate of 80 beats per minute, respiratory rate of 22 breaths per minute, and temperature of 37°C. Her body weight was 48 kg, and her height was 148 cm, indicating a normal nutritional status but short stature. The abdominal examination was unremarkable, with no tenderness, guarding, or organomegaly. Initial laboratory investigations revealed a hemoglobin level of 12.5 g/dL, white blood cell count of 8310/mm^3, and platelet count of 241,000/mm^3. Her liver function tests showed mildly elevated alanine aminotransferase (ALT) at 53 U/L. Renal function tests were normal, with a creatinine of 0.6 mg/dL and a glomerular filtration rate (GFR) of 135 ml/min/1.73m^2. Urinalysis showed trace proteinuria. Lipid profile revealed elevated total cholesterol and triglycerides. Given the patient's history of SLE and recurrent abdominal pain, an esophagogastroduodenoscopy (EGD) was performed to evaluate for potential gastrointestinal manifestations of her autoimmune disease (Figure 1). The EGD revealed two significant findings: Hiatal Hernia: A type II hiatal hernia was identified, where a portion of the stomach had herniated through the esophageal hiatus of the diaphragm into the chest cavity. This finding suggested a potential anatomical cause for the patient's symptoms of regurgitation and heartburn. Esophageal Polyp: A polyp was visualized at the lower esophageal sphincter (LES). The polyp's appearance raised concerns for a potential neoplastic process, although benign esophageal polyps are also possible in this age group.

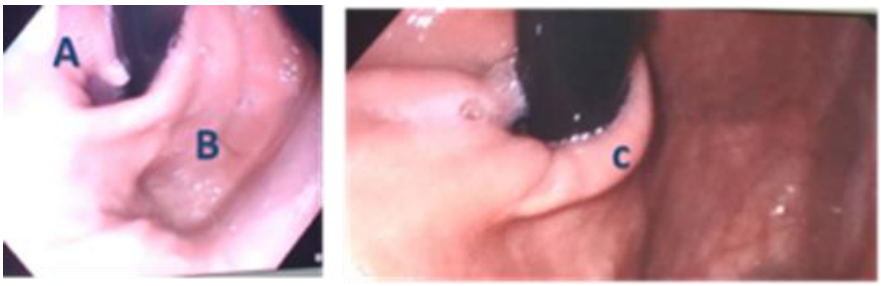

Figure 1. Findings through EGD procedure. A.) Esophageal polyp, B.) Hiatal hernia, C.) Esophageal sphincter dysfunction due to esophageal polyp.

Following the EGD findings, the patient was evaluated by a multidisciplinary team, including gastroenterologists, surgeons, and rheumatologists. The decision was made to proceed with surgical intervention to address the hiatal hernia and obtain a biopsy of the esophageal polyp. The patient underwent laparoscopic gastrofundoplication (Toupet procedure) to repair the hiatal hernia (Figure 2). During the procedure, the surgeon attempted to visualize and remove the esophageal polyp but was unable to do so due to significant tissue edema in the area. The fundoplication was completed successfully, and the patient was admitted for postoperative monitoring. In the immediate postoperative period, the patient developed mild hyponatremia (sodium level of 127 mmol/L) and hypokalemia (potassium level of 2.9 mmol/L). These electrolyte imbalances were attributed to a combination of factors, including the patient's underlying lupus nephritis and potential fluid shifts related to the surgery. The imbalances were corrected with intravenous fluids and electrolyte replacement. The patient also experienced dysphagia (difficulty swallowing) in the postoperative period, likely due to edema at the surgical site. This was managed with a modified diet and close monitoring. Her symptoms gradually improved, and she was able to tolerate oral intake before discharge.

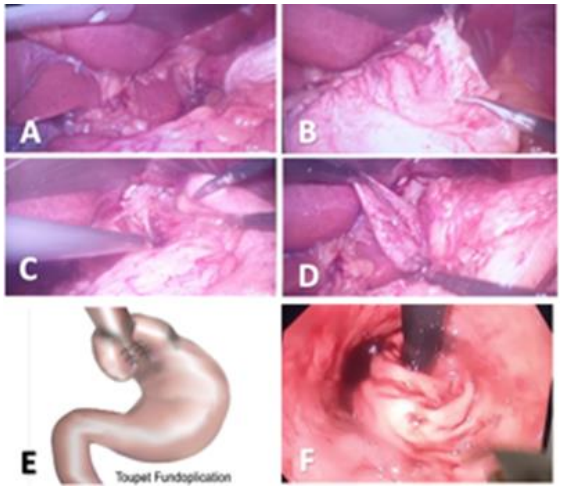

Figure 2. Toupet gastrofunduplication procedure. A.) Gastric cardia and fundus were identified and pulled from above the diaphragm to the abdominal cavity below the diaphragm, B.) gastric fundus identified and C.) pulled around the distal esophageal part, D.) Gastric fundus then sutured E.) as toupet procedure, F.) EGD evaluates the tightening of the lower esophageal sphincter but the esophageal polyp cannot be identified due to tissue edema.

During follow-up visits, the patient reported persistent heartburn and nausea, particularly after meals. Her appetite decreased, and she experienced weight loss. Repeat EGD three months after the initial surgery revealed the reappearance of the esophageal polyp. Given the persistent symptoms and the need for a definitive diagnosis of the polyp, the patient was admitted for a second surgical procedure. This time, the polyp was successfully removed via polypectomy (Figure 3). Histopathological examination of the polyp revealed a hyperplastic gastric polyp, a benign growth often associated with chronic inflammation. Following the polypectomy, the patient's symptoms of heartburn, nausea, and dysphagia resolved completely. She regained her appetite and lost weight, returning to her baseline nutritional status. The patient continues to be followed by a multidisciplinary team, including gastroenterologists, rheumatologists, and surgeons, to monitor for any recurrence of her hiatal hernia or polyp and to manage her underlying SLE and lupus nephritis.

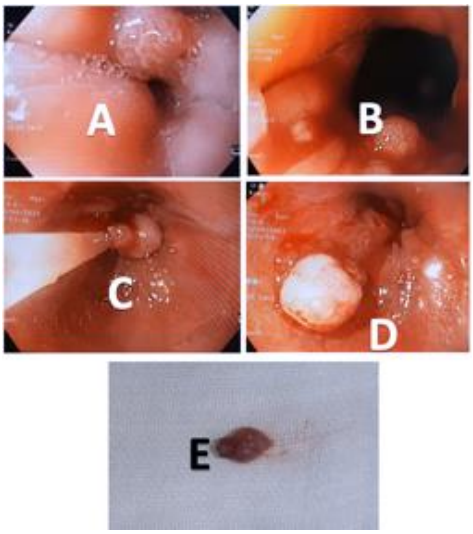

Figure 3. Polyp removal procedure. A.) lower esophageal sphincter passage with a polyp. B.) polyp was identified. C.) Removal procedure. D.) The polyp was removed. E.) Macroscopic view of esophageal polyp.

3. Discussion

The case presented underscores the intricate challenges inherent in diagnosing and managing the concurrent presentation of hiatal hernia (HH), gastric polyp, and lupus nephritis in an adolescent patient. The initial symptom of abdominal pain, a common complaint in both pediatric and adult populations, immediately raised the suspicion of a gastrointestinal (GI) manifestation of systemic lupus erythematosus (SLE), the patient's underlying autoimmune disease. This suspicion was entirely reasonable, given the well-documented propensity of SLE to affect virtually any organ system, including the GI tract. The GI manifestations of SLE can be diverse and non-specific, ranging from relatively benign symptoms like dyspepsia and nausea to more severe complications such as intestinal vasculitis, pancreatitis, and even bowel perforation. The protean nature of these manifestations often poses a diagnostic dilemma, as they can mimic a wide array of primary GI disorders. In this particular case, the patient's abdominal pain, coupled with her history of SLE, initially steered the diagnostic focus toward potential GI involvement of her autoimmune disease. However, the subsequent esophagogastroduodenoscopy (EGD) findings dramatically shifted the diagnostic landscape. The

identification of a hiatal hernia and an esophageal polyp revealed distinct structural abnormalities that could independently account for the patient's symptoms. The hiatal hernia, a condition where a portion of the stomach protrudes through the diaphragm into the chest cavity, is a known cause of gastroesophageal reflux disease (GERD), which can manifest with abdominal pain, heartburn, and regurgitation. The esophageal polyp, although less common in adolescents, raised the possibility of a neoplastic process, further complicating the clinical picture.[9,10]

The EGD findings thus underscored a crucial lesson in the management of patients with SLE: even in the presence of a known autoimmune disease, it is imperative to maintain a broad differential diagnosis and pursue appropriate investigations to rule out other potential causes of symptoms. The initial suspicion of a GI manifestation of SLE, while valid, should not have precluded a thorough evaluation of the patient's GI tract. The EGD, in this case, proved instrumental in uncovering the true culprits behind the patient's abdominal pain. The coexistence of HH, gastric polyp, and lupus nephritis in this adolescent patient presented a unique therapeutic challenge. The hiatal hernia, being symptomatic and unresponsive to medical management, necessitated surgical intervention in the form of laparoscopic gastrofundoplication. This procedure, while generally safe and effective, carries its own set of potential complications, particularly in the context of an autoimmune disease like SLE. The patient's postoperative course was indeed complicated by electrolyte imbalances, likely a consequence of both her underlying lupus nephritis and the physiological stress of surgery.[10,11]

The management of the esophageal polyp was further complicated by its initial non-visualization during the fundoplication surgery, likely due to postoperative edema. This necessitated a second surgical procedure, a polypectomy, to definitively address the polyp and obtain a histological diagnosis. The eventual diagnosis of a hyperplastic gastric polyp, although benign, served as a reminder of the importance of complete resection and histological confirmation in any case of a suspected GI neoplasm. The patient's journey through diagnosis and treatment highlights the critical role of a multidisciplinary approach in managing complex medical cases. The collaboration between gastroenterologists, surgeons, rheumatologists, and other specialists was essential in navigating the diagnostic challenges, formulating an appropriate treatment plan, and addressing the various complications that arose. This case serves as a testament to the power of teamwork and the importance of maintaining a high index of suspicion for concurrent pathologies, even in the presence of a known underlying disease.[11,12]

The decision to pursue surgical intervention in the form of laparoscopic gastrofundoplication was primarily driven by the presence of a symptomatic hiatal hernia in the patient, despite ongoing medical management with proton pump inhibitors (PPIs). The patient's persistent complaints of abdominal pain, regurgitation, and heartburn, despite PPI therapy, indicated that the hiatal hernia was the likely source of her symptoms and that conservative management had failed to provide adequate relief. The presence of a symptomatic hiatal hernia, particularly in the context of failed medical management, often necessitates surgical intervention to alleviate symptoms and prevent potential complications. The goals of surgical repair in hiatal hernia cases are to reduce the hernia (The herniated portion of the stomach is repositioned back into the abdominal cavity, restoring normal anatomy); Strengthen the lower esophageal sphincter (The LES is tightened or reinforced to prevent reflux of gastric contents into the esophagus); Prevent recurrence (The diaphragmatic hiatus is repaired to minimize the risk of future herniation). In this particular case, the patient's young age and the desire to minimize invasiveness favored a laparoscopic approach over open surgery. Laparoscopic gastrofundoplication has emerged as the preferred surgical technique for hiatal hernia repair in both adults and children due to several advantages.

Compared to open surgery, laparoscopic procedures involve smaller incisions, leading to less tissue trauma and postoperative pain. Patients undergoing laparoscopic surgery typically experience a faster recovery, with shorter hospital stays and quicker return to normal activities. The smaller incisions associated with laparoscopic surgery result in less scarring and improved cosmetic outcomes. Laparoscopic surgery is associated with a lower risk of wound infections, bleeding, and other complications compared to open surgery. The safety and efficacy of laparoscopic gastrofundoplication in children and adolescents have been well-documented in the literature. Several studies have demonstrated high success rates in symptom resolution and low complication rates following laparoscopic repair of hiatal hernias in this population. The long-term outcomes are generally favorable, with most patients experiencing sustained relief from GERD symptoms and improved quality of life.[12,13]

In addition to the patient's symptoms and the failure of medical management, the decision to proceed with laparoscopic gastrofundoplication was also supported by the following factors. The patient had a type II hiatal hernia, also known as a paraesophageal hernia, where the gastroesophageal junction remains in its normal position, but a portion of the stomach herniates alongside the esophagus. Paraesophageal hernias are more likely to cause complications, such as volvulus (twisting of the stomach) and obstruction, and are generally considered a stronger indication for surgical repair than type I (sliding) hernias. The presence of an esophageal polyp further complicated the patient's clinical picture and warranted surgical intervention for both diagnostic and therapeutic purposes. Although the polyp was not visualized during the initial surgery due to edema, its presence underscored the need for close follow-up and potential re-intervention. Despite her underlying SLE and lupus nephritis, the patient was in relatively good health and was considered a suitable candidate for surgery. Her medical conditions were well-controlled, and she had no significant comorbidities that would increase her surgical risk. The decision to proceed with laparoscopic gastrofundoplication in this patient was a carefully considered one, based on a combination of clinical, endoscopic, and surgical factors. The presence of a symptomatic hiatal hernia despite medical management, the type of hernia, the presence of an esophageal polyp, and the patient's overall health status all contributed to the decision to pursue surgical intervention. The laparoscopic approach was chosen due to its minimally invasive nature and proven safety and efficacy in children and adolescents. The successful outcome of the surgery, with resolution of the patient's symptoms and no significant complications, further validates the decision to proceed with laparoscopic gastrofundoplication in this complex case. The decision to proceed with laparoscopic gastrofundoplication was rooted in the presence of a symptomatic hiatal hernia that remained unresolved despite medical management with proton pump inhibitors (PPIs). The patient's persistent complaints of abdominal pain, regurgitation, and heartburn, even with PPI therapy, strongly suggested that the hiatal hernia was the primary source of her discomfort. The ineffectiveness of conservative treatment underscored the need for a more definitive intervention to address her symptoms and prevent potential complications.[13,14]

The presence of a symptomatic hiatal hernia, especially when medical management fails to provide relief, often necessitates surgical intervention. The primary objectives of surgical repair in such cases are to reposition the herniated portion of the stomach back into the abdominal cavity, restore normal anatomy, and reinforce the lower esophageal sphincter (LES) to prevent the reflux of gastric contents into the esophagus. The ultimate goal is to alleviate the patient's symptoms and improve their quality of life while minimizing the risk of recurrence and potential complications. In this specific case, the patient's young age and the desire to minimize invasiveness made laparoscopic gastrofundoplication the preferred surgical approach. This technique has gained

widespread acceptance as the gold standard for hiatal hernia repair in both adults and children due to its numerous advantages. Compared to open surgery, laparoscopic procedures involve smaller incisions, resulting in less tissue trauma, reduced postoperative pain, and faster recovery times. Patients typically experience shorter hospital stays and a quicker return to their normal activities. Additionally, the smaller incisions lead to less scarring and improved cosmetic outcomes. The laparoscopic approach also carries a lower risk of complications such as wound infections and bleeding. The safety and efficacy of laparoscopic gastrofundoplication in the pediatric population have been well-established in the medical literature. Numerous studies have reported high success rates in symptom resolution and low complication rates following laparoscopic repair of hiatal hernias in children and adolescents. The long-term outcomes are generally favorable, with most patients experiencing sustained relief from GERD symptoms and a significant improvement in their overall quality of life.[14,15]

Several factors beyond the patient's symptoms and the failure of medical management further supported the decision to proceed with laparoscopic gastrofundoplication. The patient had a type II hiatal hernia, also known as a paraesophageal hernia, where a portion of the stomach herniates alongside the esophagus while the gastroesophageal junction remains in its normal position. Paraesophageal hernias carry a higher risk of complications such as volvulus (twisting of the stomach) and obstruction, making them a stronger indication for surgical repair compared to type I (sliding) hernias. The presence of an esophageal polyp added another layer of complexity to the patient's case and further justified surgical intervention. While the polyp was not visualized during the initial surgery due to edema, its presence underscored the need for close follow-up and potential re-intervention. The polyp's subsequent reappearance and successful removal via polypectomy highlight the importance of vigilance in such cases. Despite her underlying SLE and lupus nephritis, the patient was in relatively good health and deemed a suitable candidate for surgery. Her medical conditions were well-managed, and she had no significant comorbidities that would increase her surgical risk. This further supported the decision to proceed with surgical intervention. The decision to perform laparoscopic gastrofundoplication in this patient was a carefully considered one, based on a comprehensive evaluation of her clinical presentation, endoscopic findings, and overall health status. The presence of a symptomatic hiatal hernia refractory to medical management, the type of hernia, the presence of an esophageal polyp, and the patient's suitability for surgery all contributed to this decision. The laparoscopic approach was favored due to its minimally invasive nature and proven track record of safety and efficacy in children and adolescents. The successful outcome of the surgery, with complete resolution of the patient's symptoms and no major complications, further validates the appropriateness of the chosen treatment strategy. This case serves as a valuable reminder of the importance of a multidisciplinary approach and individualized treatment plans in managing complex medical conditions, particularly in the pediatric population.[15,16]

The delayed removal of the esophageal polyp in this case was an unavoidable consequence of the postoperative edema that obscured its visualization during the initial laparoscopic gastrofundoplication. The presence of edema, or swelling caused by fluid accumulation in the tissues, is a common and expected physiological response to surgical trauma. In the context of gastrofundoplication, the manipulation and suturing of tissues around the lower esophageal sphincter (LES) can lead to significant edema, which can temporarily distort the normal anatomy and obscure the visualization of nearby structures, including any pre-existing polyps. The surgeon's inability to identify and remove the polyp during the initial surgery, despite its clear presence on the preoperative EGD, underscores the challenges posed by postoperative edema. Even with the aid of

intraoperative endoscopy, the polyp remained hidden within the swollen tissues, making its safe and complete removal impossible at that time. The decision to defer the polypectomy was a prudent one, prioritizing patient safety and minimizing the risk of complications associated with operating on edematous tissues. The subsequent reappearance of the polyp during a follow-up EGD three months later highlights the importance of close monitoring and repeat endoscopy in such cases. The resolution of the postoperative edema allowed for clear visualization of the polyp, confirming its persistence and necessitating its removal. The successful polypectomy and the subsequent histopathological diagnosis of a hyperplastic gastric polyp provided a definitive diagnosis and contributed to the complete resolution of the patient's symptoms.[16,17]

This case serves as a valuable reminder of the potential impact of postoperative edema on surgical visualization and decision-making. The temporary obscuration of the esophageal polyp in this case emphasizes the need for careful consideration of the timing of interventions in the postoperative period. While immediate removal of the polyp might have been desirable, the presence of edema made it unsafe and impractical. The decision to delay the polypectomy until the edema subsided allowed for a safer and more effective procedure, ultimately leading to a successful outcome for the patient. The importance of close follow-up and repeat endoscopy in cases where postoperative edema hinders complete visualization cannot be overstated. The reappearance of the polyp in this case demonstrates that even seemingly resolved findings can re-emerge once the edema subsides. Regular endoscopic surveillance allows for early detection of any persistent or recurrent lesions, enabling timely intervention and preventing potential complications. In the context of esophageal polyps, close follow-up is particularly crucial due to the potential for malignant transformation, although rare. While most esophageal polyps are benign, certain types, such as adenomatous polyps, carry a small but significant risk of developing into cancer. Regular endoscopic surveillance allows for early detection and removal of any suspicious polyps, thereby reducing the risk of malignancy. Furthermore, close follow-up is essential for monitoring the patient's response to treatment and managing any potential complications. In this case, the patient experienced postoperative dysphagia, likely due to edema at the surgical site. Regular follow-up allowed for monitoring the resolution of this symptom and adjusting the patient's diet and medications as needed. The importance of repeat endoscopy extends beyond the immediate postoperative period. In patients with underlying conditions such as SLE, which can predispose them to various gastrointestinal manifestations, ongoing endoscopic surveillance may be warranted to detect any new or recurrent lesions. This proactive approach can help identify potential complications early, allowing for timely intervention and improved patient outcomes. The delayed removal of the esophageal polyp in this case was a necessary consequence of postoperative edema, highlighting the challenges of surgical visualization in the immediate postoperative period. The polyp's reappearance and subsequent successful removal via polypectomy underscore the critical importance of close follow-up and repeat endoscopy in such cases. Regular endoscopic surveillance allows for early detection of persistent or recurrent lesions, enabling timely intervention and reducing the risk of complications. This case serves as a valuable reminder of the dynamic nature of the postoperative period and the need for ongoing vigilance in managing patients with complex medical conditions.[17,18]

The histopathological diagnosis of a hyperplastic gastric polyp in this case aligns with existing medical literature, which frequently links these polyps to chronic inflammation and *Helicobacter pylori* (*H. pylori*) infection. Hyperplastic polyps are the most common type of gastric polyp, and their development is often attributed to an inflammatory response in the gastric mucosa. The chronic inflammation can be triggered by various factors, including *H. pylori* infection, autoimmune gastritis, and other

environmental insults. The persistent inflammatory milieu stimulates the proliferation of foveolar epithelial cells, leading to the formation of hyperplastic polyps. The association between *H. pylori* infection and hyperplastic gastric polyps is well-established. *H. pylori*, a gram-negative bacterium that colonizes the gastric mucosa, is a major risk factor for chronic gastritis, peptic ulcers, and gastric cancer. The bacterium's virulence factors induce an inflammatory response in the stomach lining, which can contribute to the development of hyperplastic polyps. Studies have shown a higher prevalence of *H. pylori* infection in patients with hyperplastic polyps compared to those without polyps, further supporting this association. In this particular case, the patient's serology for *H. pylori* was positive, indicating a past or current infection. However, the histopathological examination of the polyp itself did not reveal any evidence of *H. pylori*. Serological tests detect antibodies against *H. pylori*, which can persist even after the infection has been eradicated. Therefore, a positive serology does not necessarily indicate an active infection. In contrast, histopathological examination directly visualizes the presence of *H. pylori* in the tissue, providing a more accurate assessment of the current infection status. The patient might have received prior treatment for *H. pylori* infection, leading to its eradication before the polyp removal. The positive serology could represent residual antibodies from the previous infection. The biopsy sample obtained from the polyp might not have included the area where *H. pylori* was present, leading to a false-negative result on histopathology. Regardless of the exact reason for the discrepancy, the absence of *H. pylori* in the polyp suggests that other factors, such as chronic inflammation related to the patient's underlying SLE, might have played a role in its development. The patient's long-term use of immunosuppressive medications for SLE could have also contributed to an altered gastric mucosal immune response, predisposing her to polyp formation.[17,19]

The patient's postoperative complications of electrolyte imbalances and dysphagia are well-recognized sequelae of gastrofundoplication surgery. Electrolyte disturbances, particularly hyponatremia, and hypokalemia, can occur due to fluid shifts and altered gastrointestinal absorption following the procedure. Dysphagia, or difficulty swallowing, is often attributed to postoperative edema and inflammation at the surgical site. Early recognition and prompt management of these complications are crucial in preventing adverse outcomes and ensuring a smooth recovery. In this case, the patient's electrolyte imbalances were promptly identified and corrected with intravenous fluids and electrolyte replacement. Her dysphagia was managed conservatively with a modified diet and close monitoring, leading to gradual improvement and eventual resolution. The successful management of this patient's postoperative complications highlights the importance of vigilant monitoring and proactive intervention in the postoperative period. Close collaboration between the surgical team and other specialists, such as gastroenterologists and dieticians, is essential in identifying and addressing potential complications early on. The coexistence of hiatal hernia, gastric polyp, and lupus nephritis in this adolescent patient underscores the complex interplay between gastrointestinal and autoimmune diseases. The multisystem nature of SLE can lead to a wide range of manifestations, including those affecting the GI tract. The presence of a hiatal hernia and gastric polyp in this patient further illustrates the potential for overlapping pathologies and the need for a comprehensive approach to diagnosis and management. The successful management of this patient required a multidisciplinary approach involving gastroenterologists, surgeons, rheumatologists, and other specialists. Each discipline played a crucial role in evaluating the patient's symptoms, establishing the diagnosis, and formulating an effective treatment plan. The collaborative effort ensured that all aspects of the patient's condition were addressed, leading to optimal outcomes and improved quality of life. This case report emphasizes the importance of a multidisciplinary approach in managing complex medical conditions,

particularly in patients with autoimmune diseases like SLE. The coexistence of hiatal hernia, gastric polyp, and lupus nephritis in this adolescent patient presented a unique clinical challenge that was successfully navigated through collaboration between various specialists. The case also highlights the importance of early recognition and prompt management of potential complications, both during and after surgical intervention. By adopting a comprehensive and patient-centered approach, healthcare providers can optimize outcomes and improve the quality of life for patients with complex and interrelated medical conditions.[19,20]

4. Conclusion

This case report describes the successful management of concurrent HH, gastric polyp, and lupus nephritis in an adolescent patient. The case highlights the importance of a thorough diagnostic workup in adolescents with SLE presenting with GI symptoms. The concurrent presence of these conditions necessitates a multidisciplinary approach and careful attention to potential complications. Early diagnosis and intervention can lead to favorable outcomes and improved quality of life for these patients.

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