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Case Report

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Severe Abdominal Pain and Multi-Organ Involvement in a Young Woman With Systemic Lupus Erythematosus

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Abstract

Systemic lupus erythematosus (SLE) is a complex autoimmune disease characterized by diverse clinical manifestations and a broad spectrum of disease course and prognosis. Often presenting over an extended period, delays in diagnosis can significantly influence patient management and survival, particularly when faced with rare complications such as digestive system manifestations. This case report uniquely highlights the diagnostic and therapeutic challenges posed by severe abdominal pain in a young woman suspected of SLE, with a symptom often masked by steroid therapy or immunosuppression. The diagnostic journey, which led to the identification of SLE as the cause of abdominal pain, involved differentiating SLE from various abdominal pathologies including abdominal vasculitis, gastrointestinal syndrome, antiphospholipid antibody syndrome, pancreatitis, urinary tract infections, and obstetric-gynecological abnormalities. This case underlines the critical need for accurate, timely diagnosis, and targeted therapy in managing SLE, emphasizing the potential implications of such complexities on patient outcomes.

Keywords: Systemic lupus erythematosus; Abdominal pain; Lupus mesenteric vasculitis; Dyspepsia

Introduction

Systemic lupus erythematosus (SLE) is a complex autoimmune disease that affects multiple body systems and has a wide range of clinical manifestations, disease courses, and prognoses [1]. Among the various manifestations of SLE, gastrointestinal involvement is not uncommon and can present as pharyngitis, dysphagia, esophagitis, anorexia, nausea, vomiting, diarrhea, acute abdominal pain, peptic ulcer, inflammatory bowel disease (IBD), protein-losing gastroenteropathy, malabsorption, ascites, peritonitis, pancreatitis, mesenteric vasculitis, melena, gastrointestinal bleeding, gastrointestinal infarction, motility disorders (intestinal pseudo-obstruction and small intestinal bacterial overgrowth), celiac disease, pneumatosis cystoid intestinal, and eosinophilic enteritis [2]. Clinical manifestations of SLE in the digestive system are not rare and they often lead to fatal complications [2, 3]. Patients with SLE typically present with severe abdominal pain, which poses a diagnostic and therapeutic challenge [4]. Delayed diagnosis is common, particularly in patients receiving steroid or immunosuppressive therapy, as these treatments can mask the underlying clinical picture and lead to delayed diagnosis due to perforation or ischemia [5].

The present study aimed to report the case of a 30-year-old woman with severe SLE and abdominal pain manifestations, focusing on the diagnosis and management of the disease.

Case Report

A 30-year-old woman was referred to the hospital with complaints of abdominal pain and severe weakness that had persisted for 2 weeks prior to admission. The patient reported experiencing burning, continuous pain in the epigastric region with a visual analog scale (VAS) rating of 4 - 5. The pain was not related to food, did not improve with rest or changes in position, and was accompanied by nausea and a decrease in appetite. There were no complaints of fever, cough, shortness of breath, or sore throat. The patient had experienced intermittent joint pain in her hands and feet for 6 months prior to admission, which was relieved with painkillers and rest, but worsened with movement or strenuous activity. Urination was normal, occurring three to four times per day with a volume of approximately 100 - 120 mL, and there was no pain during urination. Defecation was initially normal, occurring once a day with solid, yellow stool. However, after 5 - 7 days of treatment, the patient complained of eight episodes of liquid defecation, with no reports of black or bloody stool. The patient also reported the appearance of reddish spots on her forearms that gradually spread to her palms without any associated pain or itching. The patient had no history of hypertension, diabetes mellitus, allergies, joint disease, heart disease, kidney or liver disease, or miscarriage. There was no family history of similar complaints. The patient did not smoke, consume alcohol, or use herbal medicine or over-the-counter drugs. She was currently unemployed and spent most of her time at home caring for her children without engaging in heavy physical activity. The patient had noticed hair loss resulting in baldness on her

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head, especially in the past month.

The patient presented with various symptoms, including abdominal pain, joint pain, skin rash, and hair loss. The case highlights the need for a comprehensive evaluation and investigation of all symptoms in order to arrive at an accurate diagnosis and proper management plan.

Physical examination

The patient was observed to have a general impression of moderate illness with normal nutritional status (weight 50 kg, height 155 cm, body mass index (BMI) 20.81 kg/m^2). The patient was alert and oriented with a blood pressure of 99/59 mm Hg, a pulse rate of 117 beats/min, a respiratory rate of 18 breaths/min, an axillary temperature of 36.5 °C, and oxygen saturation of 99% on room air. Examination of the head revealed a normocephalic head shape with pale conjunctiva and canker sores on the oropharyngeal mucosa, but no icteric sclera, facial rash, or papillary atrophy of the tongue. Examination of the neck revealed no increase in jugular venous pressure (JVP) in the axilla or inguinal region. Lung examination showed symmetrical hemithorax movements and left and right tactile fremitus, with sonorous percussion on both hemithoraxes and vesicular breath sounds in both lungs without wheezing or rhonchi. The cardiac examination revealed no signs of an enlarged heart, with normal heart sounds.

On abdominal examination, the patient had a flat abdominal wall, with normal peristaltic sounds on auscultation. The epigastric region was soft and tender on palpation, and the liver and spleen were not palpably enlarged. The percussion examination showed tympanic results, with no signs of ascites. Examination of the extremities showed warm scrotum with no pitting edema in the upper or lower extremities. There was tenderness and swelling in the joints of the hands and feet. Erythematous and scattered macules were found on the right and left palms and forearm, without any associated tenderness. On digital rectal examination, the anal sphincter tone was positive, and the mucosa was smooth, with no blood, mucus, melena, masses, or nodules found. The rectal ampulla did not collapse, and yellow stools were observed.

The physical examination revealed tenderness and swelling in the joints of the hands and feet, erythematous and scattered macules on the palms and forearm, and soft and tender epigastric region on palpation. The patient showed no signs of ascites, an enlarged heart, or pitting edema in the upper or lower extremities. The examination results highlight the importance of a comprehensive physical examination to identify potential symptoms and provide a more accurate diagnosis.

Laboratory findings

On November 27, 2020, laboratory examinations were conducted during her admission to the hospital. The results indicated that the patient's hemoglobin was 7.0 mg/dL, mean corpuscular volume (MCV) was 87.1 fL, mean corpuscular hemoglobin (MCH) was 27.1 pg, and white blood cell was 3.120/μL. The patient's lymphocytes were 23%, and thrombocytes was 179,000/μL. The blood sugar level was 80 mg/dL, alanine transaminase (ALT) was 56, and alkaline phosphatase (ALP) was 15. The albumin level was 2.7 mg/dL, while the total bilirubin was 0.45, and the direct bilirubin was 0.15. Additionally, the patient's blood urea nitrogen (BUN) was 77.4, serum creatinine was 2.04, and glomerular filtration rate (GFR) was 31.9 mL/min. The patient's sodium level was 135 mmol/L and potassium was 4.11 mmol/L, while chloride was 105 mmol/L. The patient tested negative for hepatitis B surface antigen (HBsAg). Furthermore, the patient's uric acid level was 13 mg/dL, and lactate dehydrogenase (LDH) was 1,936 U/L.

Peripheral blood morphology results showed that the patient had anemia suspected to be due to chronic disease accompanied by an inflammatory/infectious process. Urinalysis examination showed a pH of 6.0, a specific gravity of 1.020, protein levels at (+2), blood at (+3), and leukocyte esterase at (+2). Nitrite was not detected, while glucose, bilirubin, and ketones were found to be absent. The urine sediment obtained erythrocytes of 173, leukocytes of 323, bacteria of 863.8, and pathological cylinders of 4.96 (granular cylinder +3).

Radiographic findings

Radiographic findings on November 27, 2020, revealed a normal chest X-ray with normal heart size. Abdominal ultrasound conducted on November 12, 2020, showed evidence of gastritis and suspected bilateral renal parenchymal inflammation due to inflammation. However, no abnormalities were detected in the liver, spleen, pancreas, urinary bladder, or uterus.

Based on the results of the above examinations, the patient was diagnosed with SLE with manifestations of arthritis, mucocutaneous, hematology, vasculitis, and nephritis; normochromic normocytic anemia due to bleeding with differential diagnosis of chronic disease; urinary tract infection; acute renal failure with a differential diagnosis of chronic renal failure; hyperuricemia; hypoalbuminemia and ulcer-type dyspepsia. Further tests were conducted, and the patient was diagnosed with SLE with strenuous activity with a Mex-SLEDAI score of 15 (nephritis: 6; arthritis: 2; vasculitis: 4; mucocutaneous: 2; hematology: 1), based on strong positive antinuclear antibody (ANA, immunofluorescence (IF)) laboratory results, anti-double-stranded DNA (anti-dsDNA) > 200 U/mL, C3 51 mg/dL, and C4 13 mg/dL. Hemolytic anemia was also traced with reticulocyte results of 0.79%, total bilirubin of 0.45 mg/dL, direct bilirubin of 0.15 mg/dL, LDH of 1,936 U/L, negative direct and indirect comb tests.

The patient received treatment consisting of ampicillin sulbactam injection therapy of 1.5 g/8 h, omeprazole injection of 30 mg/24 h, ondansetron injection of 8 mg/8 h, sucralfate of 3 × 10 mL, paracetamol tablets of 3 × 500 mg, allopurinol tablet of 1 × 100 mg, injection of methylprednisolone at a dose of 62.5 mg/24 h, and 3 × 10 nystatin drops.

Discussion

The discussion centers on the possible causes of the patient's

abdominal pain, which may indicate mesenteric vasculitis [6]. Vasculitis, an inflammatory process in the blood vessels that damages the structure of the blood vessel walls, is a common cause of acute abdominal pain in SLE [6, 7]. While lupus mesenteric vasculitis (LMV) is prevalent in Asia and America, globally, it can range from 0.2% to 9.7% [2]. The clinical manifestations of LMV include abdominal pain, nausea, diarrhea, and fever [2, 8]. However, in the patient's case, there is a complaint of continuous burning pain in the epigastrium that does not improve with rest, change of position, or eating. Other symptoms include nausea, decreased appetite, and diarrhea lasting for 3 days, but there is no mucus or blood in the stool.

Upon physical examination of the patient, epigastric tenderness was observed, which may indicate the presence of dyspepsia, a condition that can either be functional (psychogenic) or organic (gastritis, hemorrhagic gastritis, duodenitis, gastric ulcer, duodenal ulcer, or malignant process). In order to eliminate this possibility, the patient was referred to the psychosomatic department with a suspicion of psychogenic dyspepsia and psychogenic acute watery diarrhea. Furthermore, the patient's abdominal pain was also suspected to be caused by peptic ulcer-type organic dyspepsia. However, endoscopy, which is considered the definitive test for the confirmation of peptic ulcer, was not performed. Despite this, the diagnosis can still be confirmed through observation with a therapeutic approach during treatment. The working diagnosis was mixed type dyspepsia.

Confirmation of the diagnosis of mesenteric vasculitis often requires the use of imaging tests, with abdominal computed tomography (CT) scan being the preferred modality of investigation. Such scans can reveal characteristic findings, including thickening of the intestinal wall, target sign, obstruction of the mesenteric wall, and increased attenuation of mesenteric fat, among others [9]. Despite its utility, the patient in this case did not undergo an abdominal CT scan due to concerns regarding the diagnosis leading to vasculitis based on epidemiological findings, which pointed towards a similar presentation. Persistent abdominal pain, which was unresponsive to proton pump inhibitors and in the context of established SLE, was suggestive of vasculitis of the intestinal blood vessels.

This case significantly underscores the diagnostic challenges in patients with SLE presenting with common symptoms, such as abdominal pain. This can be attributed to the diverse range of potential causes, extending from benign conditions like dyspepsia to severe complications such as mesenteric vasculitis. This calls for a comprehensive and systematic approach to differential diagnosis, reiterating the need for diagnostic vigilance, particularly in patients with complex autoimmune diseases such as SLE. In this instance, the patient's diagnosis was made despite the absence of standard diagnostic procedures such as an abdominal CT scan or endoscopy, which would usually be paramount in confirming the diagnosis of gastrointestinal issues. This case brings to light the importance of flexibility in managing patients where such procedures are not feasible. Thus, the role of symptom observation, therapeutic management, and laboratory tests in confirming the diagnosis was brought to the fore, highlighting that a judicious blend of these elements can compensate for the lack of direct imaging diagnostics, providing valuable insight for clinicians managing similar cases.

A noteworthy aspect of this case was the patient's positive response to pulse-dose methylprednisolone treatment. This indirect evidence proved to be a valuable pointer towards the diagnosis of mesenteric vasculitis. Further confirmation of vasculitis was obtained through arteriography, which revealed abnormal findings consistent with vasculitis.

The case provides an example of how therapeutic responses can help guide the diagnosis in challenging situations, further emphasizing the role of observation and adaptability in the clinical approach.

The patient's laboratory criteria showed an elevated D-dimer level of 784 ng/mL, suggesting the possibility of abdominal thrombosis, which is a clinical manifestation of antiphospholipid antibody syndrome (APS) [10]. APS is an acquired autoimmune thrombophilic disease that can vary from asymptomatic to severe and life-threatening (catastrophic APS (CAPS)) [11]. The diagnosis of APS requires meeting at least one clinical and one laboratory criterion. However, based on the Sapporo criteria, the syndrome of antiphospholipid antibodies could not be demonstrated in the patient [12].

The etiology of the patient's abdominal pain was evaluated through observation and therapeutic management. In the context of SLE, abdominal pain warrants consideration of LMV as a primary diagnosis given its emergent nature and potential for serious complications. The diagnosis of LMV was established through a combination of clinical examination, laboratory tests, and abdominal CT scans [13]. While an abdominal CT scan was not performed in this case due to the patient's response to pulse-dose methylprednisolone treatment and the impracticality and expense of CT scans, the diagnosis of LMV was still confirmed. Endoscopy was not utilized to confirm a diagnosis of dyspepsia due to the feasibility and efficiency of using a therapeutic approach during treatment to observe patient response and manage symptoms.

Learning points

The learning points from this case report emphasize the importance of considering and promptly investigating the potential causes of abdominal pain in patients with SLE, given the potential for rare but severe complications such as mesenteric vasculitis. Clinicians should be aware of the diverse clinical manifestations of SLE and its challenging diagnosis, particularly in patients receiving steroid therapy or immunosuppression, which may mask the true clinical features. In this case, the patient's abdominal pain was thoroughly evaluated through observation, therapeutic management, and laboratory tests, and the diagnosis of LMV was confirmed despite the absence of an abdominal CT scan. This case highlights the need for a comprehensive approach to diagnosing and managing abdominal pain in patients with SLE, taking into account the wide range of potential etiologies and the significance of timely diagnosis and intervention.

Conclusions

This case report underscores the intricacies and challenges of

diagnosing SLE with rare manifestations, such as mesenteric vasculitis. The patient's persistent abdominal pain, despite being a common symptom, pointed towards a more severe underlying condition, requiring meticulous diagnostic evaluation. The case further amplifies the importance of a comprehensive and dynamic approach to diagnosis, especially when standard diagnostic procedures, like abdominal CT scans or endoscopy, are not feasible. This approach entails a combination of clinical examination, thorough investigation of symptoms, and strategic therapeutic management. Despite the absence of these standard procedures, a successful diagnosis was made, reinforcing the importance of clinical acumen and adaptability in managing complex autoimmune diseases like SLE. Overall, this case serves as a reminder of the diversity of SLE presentations and the potential for severe, uncommon complications, which necessitates a high degree of suspicion and a flexible, patient-centered approach to diagnosis and management.

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Conflict of Interest

None to declare.

Informed Consent

Informed consent was obtained.

Author Contributions

Ayu Paramaiswari conceived and designed the case report and collected data. Anita Kusumawati and Dhite Bayu Nugroho collected data and wrote the paper.

Data Availability

The data supporting the findings of this study are available from the corresponding author upon reasonable request.

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