e-ISSN: 2747-2051

Archives of the Medicine and Case Reports

[AMCR]

https://hmpublisher.com/index.php/amcr

When Dengue and Lupus Collide: A Case Report of Overlapping Symptoms Leading to Diagnostic Delay

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ARTICLE INFO

Keywords:
Dengue fever
Diagnostic delay
Overlapping symptoms
Systemic lupus erythematosus
Thrombocytopenia

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All authors have reviewed and approved the final version of the manuscript.

https://doi.org/10.37275/amcr.v6i2.693

A B S T R A C T

Systemic lupus erythematosus (SLE) and dengue fever are two distinct diseases with overlapping clinical presentations, posing diagnostic challenges, especially in tropical regions where dengue is endemic. This case report describes a patient initially diagnosed with dengue fever who was later found to have SLE, highlighting the importance of considering SLE in the differential diagnosis of fever and thrombocytopenia even during dengue outbreaks. A 52-year-old female presented with fever, thrombocytopenia, arthralgia, myalgia, and a rash. She was initially diagnosed with dengue fever based on her clinical presentation and the prevalence of dengue in her community. However, her condition did not improve with supportive treatment, and she developed new symptoms, including shortness of breath and pleural effusion. Further investigations revealed a positive antinuclear antibody (ANA) test, leading to a revised diagnosis of SLE. The patient responded well to corticosteroid therapy and was discharged after seven days. In conclusion, this case underscores the importance of maintaining a broad differential diagnosis when evaluating patients with fever and thrombocytopenia in dengue-endemic areas. A high index of suspicion for SLE is crucial, even during dengue outbreaks, to ensure timely diagnosis and appropriate management.

1. Introduction

Systemic lupus erythematosus (SLE) is a chronic autoimmune disorder characterized by a diverse range of clinical manifestations and the production of autoantibodies targeting nuclear and cytoplasmic antigens. These autoantibodies lead to the formation of immune complexes that deposit in various tissues, triggering inflammation and damage. The clinical presentation of SLE is highly variable and can affect any organ system, making diagnosis challenging. Common symptoms include fever, fatigue, arthralgia, skin rashes, and renal involvement. Thrombocytopenia, a decrease in platelet count, is a frequent hematologic manifestation of SLE, occurring in 10-40% of patients. SLE is a complex disease with a poorly understood etiology. Both genetic and environmental factors are thought to play a role in its development. Genetic factors include variations in genes involved in immune regulation, such as those encoding human leukocyte antigens (HLAs) and complement proteins. Environmental factors that have been implicated in SLE include exposure to ultraviolet (UV) light, infections, and certain medications. The diagnosis of SLE is based on a combination of clinical findings, laboratory tests, and imaging studies. The 1997 revised American College of Rheumatology (ACR) criteria for the classification of SLE include 11 criteria, of which at least 4 must be met for a diagnosis of SLE. These criteria include clinical manifestations such as malar rash, discoid rash, photosensitivity, oral ulcers,

arthritis, serositis, renal disorder, neurological disorder, hematologic disorder, immunologic disorder, and positive antinuclear antibody (ANA) test. The treatment of SLE aims to control disease activity, prevent flares, and minimize organ damage. Treatment options include nonsteroidal anti-inflammatory drugs (NSAIDs), antimalarial drugs, corticosteroids, and immunosuppressive drugs. The choice of treatment depends on the severity of the disease and the specific organ systems involved.[1-4]

Dengue fever is an acute viral infection transmitted by mosquitoes, primarily in tropical and subtropical regions. The clinical presentation of dengue ranges from mild febrile illness to severe dengue hemorrhagic fever, characterized by high fever, headache, myalgia, rash, and thrombocytopenia. Thrombocytopenia in dengue is attributed to bone marrow suppression, increased platelet destruction, and immune-mediated mechanisms. Dengue fever is caused by four closely related dengue viruses (DENV-1, DENV-2, DENV-3, and DENV-4). Infection with one serotype provides lifelong immunity to that serotype but only short-term cross-immunity to other serotypes. Subsequent infection with a different serotype increases the risk of severe dengue. The diagnosis of dengue fever is based on clinical presentation and laboratory tests. Laboratory tests include viral isolation, detection of viral RNA or antigens, and serological tests for dengue IgM and IgG antibodies. The treatment of dengue fever is supportive, focusing on managing symptoms and preventing complications. Supportive care includes rest, fluid replacement, and antipyretics. Severe dengue requires hospitalization and close monitoring.[5-7]

The overlap of clinical features, particularly fever and thrombocytopenia, between SLE and dengue fever can lead to diagnostic confusion, especially during dengue outbreaks. In such situations, a high index of suspicion and careful clinical evaluation are essential to differentiate between these two distinct diseases and ensure prompt and appropriate management. Several factors contribute to the diagnostic challenges in differentiating SLE from dengue fever. The high prevalence of dengue fever in tropical and subtropical regions can create a strong bias towards a diagnosis of dengue fever in patients presenting with fever and thrombocytopenia. The overlapping clinical features of SLE and dengue fever, such as fever, thrombocytopenia, arthralgia, and rash, make it difficult to distinguish between them based on clinical presentation alone. The lack of readily available specific diagnostic tests for SLE and dengue fever in many healthcare settings, especially in resource-limited areas, can further complicate the diagnostic process.[8-10] This case report describes a patient who presented with fever and thrombocytopenia during a dengue fever outbreak and was initially diagnosed with dengue.

2. Case Presentation

A 52-year-old female presented to the hospital with a primary complaint of a fluctuating fever persisting for three days. The fever, reaching up to 38.6°C, was unresponsive to antipyretics and accompanied by widespread joint and muscle pain. An itchy, red rash was also noted on both hands. Adding to this, she reported experiencing nausea and vomiting (3-4 episodes per day), heartburn, and decreased appetite. Notably, on the second day of her hospitalization, she developed shortness of breath. The patient's past medical history was unremarkable, with no known chronic illnesses. She reported taking paracetamol as needed for fever and had known allergies to sulfa drugs and tetracycline. Socially, she worked as a cleaner and gardener, and it was significant that family members and neighbors had recently been hospitalized with dengue fever. Upon examination, the patient was conscious and alert, with vital signs showing a blood pressure of 100/70 mmHg, a pulse of 98 bpm, a respiratory rate of 20 breaths per minute, a temperature of 38.1°C, and an oxygen saturation of 99% on room air. A reddish, non-blanching rash was

evident on both her upper and lower extremities. Examination of her head, eyes, ears, nose, and throat revealed no significant abnormalities. Initially, her respiratory system seemed clear upon auscultation, but the development of shortness of breath on day 2 of hospitalization raised concerns. Cardiovascular examination showed no murmurs, gallops, or rubs. Gastrointestinal examination revealed epigastric tenderness and musculoskeletal examination showed widespread joint and muscle tenderness. Neurological examination was grossly intact, with no focal deficits mentioned. Initial laboratory investigations revealed several abnormalities; Complete Blood Count (CBC): Showed leukopenia (WBC: 3.51 x 10^3/µL initially, further decreased to 3.36 × 10^3/µL), neutrophilia (74.1% initially), thrombocytopenia (platelets: 73 x 10^3/µL initially, decreased to 52 × 10^3/µL), and mild anemia (Hb: 11.4 g/dL); Blood Chemistry: Indicated elevated liver enzymes (SGPT: 44 U/L, SGOT: 85 U/L), elevated creatinine (1.5 mg/dL), elevated urea (37 mg/dL), and hyponatremia (sodium: 125 mmol/L); Other Tests: Dengue NS1 antigen test was negative, but the Antinuclear Antibody (ANA) test was positive. A chest X-ray was performed due to the patient's shortness of breath, and it revealed a right-sided pleural effusion. Based on the initial clinical presentation and the prevalence of dengue in the community, the patient was initially diagnosed with dengue fever with warning signs, transaminitis, and acute kidney injury (AKI). However, the development of new symptoms, the lack of response to supportive treatment, and the positive ANA test led to a revised diagnosis of systemic lupus erythematosus (SLE) with thrombocytopenia. This case underscores the diagnostic complexities that can arise when a patient presents with symptoms common to both SLE and dengue fever, especially in regions where dengue is endemic. The initial focus on dengue was understandable given the patient's clinical picture—fever, thrombocytopenia, myalgia, arthralgia, and rash—and the ongoing dengue outbreak in her community. However, the persistence and progression of her illness, including the development of shortness of breath and pleural effusion, along with the negative dengue NS1 antigen test, prompted a reassessment. The positive ANA test became a critical turning point, raising the suspicion for SLE. However, it's crucial to remember that ANA, while a hallmark of SLE (present in over 95% of patients), can also be found in other autoimmune conditions and even healthy individuals. Therefore, the diagnosis of SLE cannot rely solely on a positive ANA test but must be made in conjunction with a comprehensive evaluation of clinical findings and other laboratory investigations. In this case, the patient fulfilled five of the 1997 revised American College of Rheumatology (ACR) criteria for the classification of SLE, including; Acute cutaneous lupus: The presence of a malar rash; Non-erosive arthritis: Joint pain and morning stiffness; Serositis: Pleural effusion; Hematologic disorder: Thrombocytopenia; Positive ANA test. The constellation of these criteria, along with the clinical course and subsequent response to corticosteroid therapy, solidified the diagnosis of SLE. This case highlights the potential for diagnostic delay when SLE and dengue fever mimic each other. Several factors contributed to this delay; High prevalence of dengue fever: The prevailing dengue outbreak created a strong bias towards dengue; Overlapping clinical features: Both diseases share common symptoms, making clinical distinction challenging; Limited access to specific diagnostic tests: In many settings, especially resource-limited ones, advanced tests like dengue IgM/IgG serology or specific autoantibody panels may not be readily available. The delay in diagnosis underscores the importance of maintaining a broad differential diagnosis when evaluating patients with fever and thrombocytopenia in dengue-endemic areas. A high index of suspicion for SLE is crucial, even during dengue outbreaks, to ensure timely diagnosis and appropriate management. Early diagnosis of SLE is essential to prevent disease progression and

complications. Thrombocytopenia, in particular, can be a harbinger of severe SLE and is associated with a poor prognosis. Prompt initiation of corticosteroid therapy, as was done in this case, can effectively control disease activity and improve patient outcomes (Table 1).

The patient was initially treated under the presumption of dengue fever. This involved intravenous fluids, specifically normal saline administered at 30 drops per minute, to maintain hydration and prevent complications associated with dengue. Antipyretics, namely paracetamol, were given three times per day to control fever. Lansoprazole, a proton pump inhibitor, was administered once per day to address her heartburn and prevent potential gastrointestinal complications. To manage nausea and vomiting, the antiemetic ondansetron was prescribed three times per day. Additionally, curcuma was given once daily, possibly for its potential anti-inflammatory and antioxidant properties. Following the revised diagnosis of SLE, the treatment strategy shifted. Corticosteroids, specifically methylprednisolone at a dose of 62.5 mg twice daily, were initiated to suppress the immune system and reduce inflammation, a hallmark of SLE. Supportive care measures, including intravenous fluids, antipyretics, and antiemetics, were continued as needed. The patient's progress was closely monitored through daily complete blood counts (CBCs) to track her platelet count, leukocyte count, and hemoglobin levels. Clinical assessments were also conducted daily, including monitoring vital signs, symptoms such as fever, rash, joint pain, and shortness of breath, and her overall clinical status. A repeat chest X-ray was planned to assess the resolution of the pleural effusion. Given the diagnosis of SLE, further investigations were deemed necessary after discharge. The patient was scheduled for a follow-up with a rheumatologist to confirm the diagnosis of SLE with additional autoantibody testing, such as anti-dsDNA antibodies. This consultation would also assess the extent of organ involvement and initiate appropriate long-term management, which could include immunosuppressive therapy and disease-modifying antirheumatic drugs (DMARDs) as needed. Patient education and counseling regarding SLE and its management were also planned. The patient's condition gradually improved with the corticosteroid therapy. She became afebrile, her symptoms resolved, and her platelet count improved to 84 x 10^3/µL. She was discharged on day 7 of hospitalization. Discharge medications likely included oral corticosteroids with a tapering dose, and possibly other medications depending on the severity of her SLE and any organ involvement. A follow-up appointment with a rheumatologist was scheduled to ensure ongoing management of her SLE. The initial treatment approach focused on managing the presumed dengue fever. Intravenous fluids aimed to prevent dehydration and complications like dengue shock syndrome, while antipyretics addressed the fever. The proton pump inhibitor and antiemetic were prescribed to alleviate gastrointestinal symptoms. The use of curcuma might reflect a complementary approach, although its efficacy in dengue is not fully established. The shift to corticosteroid therapy after the SLE diagnosis highlights the importance of recognizing the correct underlying condition. Corticosteroids are a cornerstone of SLE management due to their potent anti-inflammatory and immunosuppressive effects. By dampening the overactive immune response, they help control symptoms and prevent organ damage. The comprehensive follow-up plan, including regular blood tests, clinical assessments, and specialist consultation, reflects the need for ongoing monitoring and individualized management in SLE. This approach aims to track disease activity, assess treatment response, identify potential complications, and adjust therapy as needed. Patient education and counseling are also crucial to empower the patient to actively participate in their care and make informed decisions. The successful discharge after a week of hospitalization, with improved symptoms and

laboratory parameters, suggests a positive initial response to treatment. However, SLE is a chronic condition that requires long-term management. The follow-up with a rheumatologist is essential to ensure continued monitoring, optimize treatment, and address any emerging issues (Table 2).

Table 1. Summary of patient findings.

Feature	Details
Anamnesis	
Chief complaint	A 52-year-old female presenting with fluctuating fever for 3 days
History of present illness	* Fever up to 38.6°C, recurring despite antipyretics; * Widespread joint and muscle pain; * Itchy red rash on both hands; * Nausea and vomiting (3-4 episodes/day); * Heartburn and decreased appetite; * Shortness of breath on day 2 of hospitalization
Past medical history	No known chronic illnesses
Medications	Paracetamol as needed for fever
Allergies	Sulfa drugs and tetracycline
Social history	* Works as a cleaner and gardener; * Family members and neighbors recently hospitalized with dengue fever
Family history	Not explicitly mentioned in the provided text, but it is important to note any family history of autoimmune diseases, particularly SLE.
Physical examination	
Vital signs	* Blood pressure: 100/70 mmHg; * Pulse: 98 bpm; * Respiratory rate: 20 breaths/min; * Temperature: 38.1°C; * Oxygen saturation: 99% on room air
General appearance	Conscious and alert
Skin	Reddish rash on both upper and lower extremities, non-blanching
Head, eyes, ears, nose, throat (HEENT)	No significant abnormalities
Respiratory	* Initially clear auscultation; * Developed shortness of breath on day 2 of hospitalization
Cardiovascular	No murmurs, gallops, or rubs
Gastrointestinal	Epigastric tenderness
Musculoskeletal	Widespread joint and muscle tenderness
Neurological	Grossly intact, no focal deficits mentioned
Laboratory investigations	
Complete blood count (CBC)	* Leukopenia (WBC: 3.51 x 10^3/µL initially, further decreased to 3.36 × 10^3/µL); * Neutrophilia (74.1% initially); * Thrombocytopenia (platelets: 73 x 10^3/µL initially, decreased to 52 × 10^3/µL); * Mild anemia (Hb: 11.4 g/dL)
Blood chemistry	* Elevated liver enzymes (SGPT: 44 U/L, SGOT: 85 U/L); * Elevated creatinine (1.5 mg/dL); * Elevated urea (37 mg/dL); * Hyponatremia (sodium: 125 mmol/L)
Other	* Dengue NS1 antigen test: Negative; * Antinuclear Antibody (ANA) test: Positive
Imaging	
Chest X-ray	Right-sided pleural effusion
Clinical diagnosis	
Initial diagnosis	Dengue fever with warning signs, transaminitis, and acute kidney injury (AKI)
Revised diagnosis	Systemic lupus erythematosus (SLE) with thrombocytopenia

Table 2. Treatment and follow-up.

Phase	Description
Initial treatment (for suspected dengue)	* Intravenous fluids: Normal saline (30 drops per minute) to maintain hydration and prevent complications of dengue; * Antipyretics: Paracetamol three times per day for fever control; * Proton pump inhibitor: Lansoprazole once per day to address heartburn and prevent gastrointestinal complications; * Antiemetic: Ondansetron three times per day to manage nausea and vomiting; * Curcuma: Once per day, potentially for its anti-inflammatory and antioxidant properties.
Revised treatment (after SLE diagnosis)	* Corticosteroids: Methylprednisolone 62.5 mg twice daily to suppress the immune system and reduce inflammation; * Continued supportive care: Intravenous fluids, antipyretics, and antiemetics as needed.
Follow-up	* Daily complete blood counts (CBCs): To monitor platelet count, leukocyte count, and hemoglobin levels; * Clinical assessment: Daily monitoring of vital signs, symptoms (fever, rash, joint pain, shortness of breath), and overall clinical status; * Repeat chest X-ray: To assess resolution of pleural effusion; * Further investigations for SLE: After discharge, the patient would require further evaluation and long-term follow-up with a rheumatologist to: * Confirm the diagnosis of SLE with additional autoantibody testing (e.g., anti-dsDNA antibodies); * Assess the extent of organ involvement; * Initiate appropriate long-term management, including immunosuppressive therapy, and disease-modifying antirheumatic drugs (DMARDs) as needed; * Provide patient education and counseling regarding the disease and its management.
Discharge	* Day 7 of hospitalization: The patient was discharged after becoming afebrile, resolution of symptoms, and improvement in platelet count (84 x 103/µL); * Discharge medications: Likely included oral corticosteroids with a tapering dose, and possibly other medications depending on the severity of SLE and organ involvement; * Follow-up appointment: Scheduled with a rheumatologist for ongoing management of SLE.

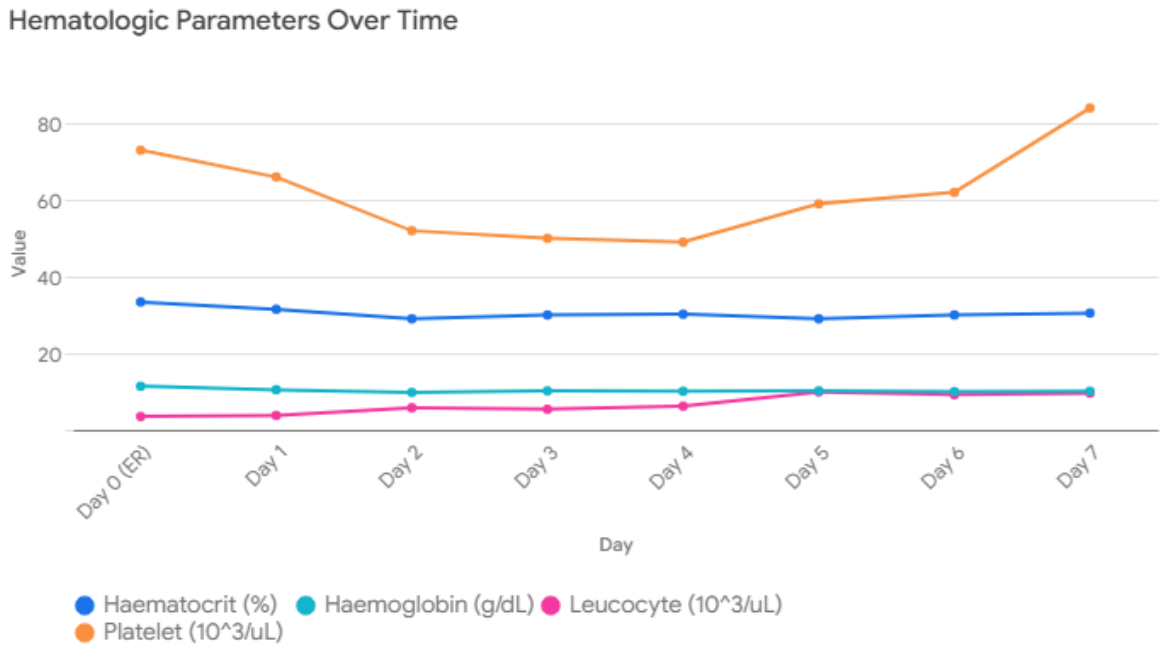

Figure 1. Hematologic parameters over time: displays the trends of the patient's leucocyte count, hemoglobin level, hematocrit, and platelet count over seven days.

3. Discussion

The diagnostic journey in this case exemplifies the intricate challenges faced when differentiating between systemic lupus erythematosus (SLE) and Dengue Fever, particularly in tropical regions where dengue is endemic. These two distinct diseases, one an autoimmune disorder and the other a viral infection share a cunning overlap in clinical presentation, often leading to initial misdiagnosis and delays in appropriate treatment. SLE, often dubbed "the great imitator," presents a formidable diagnostic challenge due to its highly variable clinical manifestations and the absence of a single gold-standard diagnostic test. The disease can affect virtually any organ system, with symptoms ranging from mild to life-threatening. This variability often leads to SLE mimicking other conditions, making it difficult to distinguish based solely on clinical presentation. Furthermore, the diagnosis of SLE often relies on a combination of clinical findings, laboratory tests, and imaging studies, none of which are individually conclusive. The 1997 revised American College of Rheumatology (ACR) criteria for the classification of SLE, while helpful, require the fulfillment of at least four out of eleven criteria, which can be a complex and time-consuming process. In this case, the patient's initial presentation with fever, thrombocytopenia, arthralgia, and rash was consistent with dengue fever, a common and prevalent disease in her community. This created a diagnostic bias towards dengue, especially in the context of a dengue outbreak. However, the persistence of her symptoms and the emergence of new symptoms, such as shortness of breath and pleural effusion, raised red flags and prompted further investigation. The diagnosis of SLE is a multifaceted challenge, often requiring a combination of clinical acumen, laboratory expertise, and a touch of serendipity. The disease's protean manifestations can mimic a wide range of other conditions, from infections and malignancies to other autoimmune diseases. This makes it difficult to pinpoint SLE based solely on clinical presentation, especially in the early stages

when symptoms may be non-specific and fluctuating. Adding to the complexity is the absence of a single, definitive diagnostic test for SLE. The 1997 revised ACR criteria, while widely used, are not without limitations. The criteria include a mix of clinical and laboratory features, and fulfilling four out of eleven criteria can be challenging, especially in patients with early or mild disease. Moreover, some of the criteria, such as the ANA test, can be positive in other conditions, leading to potential false positives. In this case, the initial focus on dengue was understandable given the patient's clinical picture and the prevailing epidemiological context. However, the persistence of symptoms and the development of new symptoms inconsistent with dengue prompted a reevaluation of the diagnosis. This highlights the importance of maintaining a broad differential diagnosis and a high index of suspicion for SLE, even in dengue-endemic areas. The diagnosis of SLE is further complicated by the fact that the disease can affect multiple organ systems, often with overlapping symptoms. For example, fever, fatigue, and weight loss are common constitutional symptoms that can be seen in a variety of conditions, including SLE. Similarly, arthralgia and myalgia, common musculoskeletal manifestations of SLE, can also be seen in other rheumatic diseases and infections. Laboratory tests, while helpful, are not always conclusive in SLE diagnosis. The ANA test, a hallmark of SLE, is positive in over 95% of patients, but it can also be positive in other autoimmune diseases and even in healthy individuals. Other laboratory tests, such as anti-dsDNA antibodies and complement levels, can be more specific for SLE, but they are not always positive in the early stages of the disease. Imaging studies, such as X-rays, CT scans, and MRIs, can be helpful in assessing organ involvement in SLE, but they are not always necessary for diagnosis. In this case, the chest X-ray revealing pleural effusion provided evidence of serositis, one of the ACR criteria for SLE. The diagnosis of SLE requires a holistic approach, taking into account the patient's clinical presentation, laboratory findings, imaging studies, and epidemiological context. A high index of suspicion for SLE is crucial, even in dengue-endemic areas, to avoid diagnostic delays and potential complications. In this case, the initial misdiagnosis as dengue fever highlights the potential for diagnostic errors when dealing with overlapping clinical presentations. The persistence of symptoms and the development of new symptoms prompted a reevaluation of the diagnosis, leading to the correct diagnosis of SLE. Dengue fever, while typically diagnosed based on clinical presentation and serological tests, can also pose diagnostic challenges, particularly in patients with SLE. Serological tests for dengue, such as IgM and IgG antibody tests, can be unreliable in SLE patients due to the presence of cross-reacting antibodies. These antibodies can lead to false-positive results, creating confusion and potentially delaying the correct diagnosis. In this case, the initial focus on dengue was understandable given the patient's clinical picture and the prevalence of dengue in the community. However, the lack of improvement with supportive treatment and the development of new symptoms inconsistent with dengue prompted a reevaluation of the diagnosis. Dengue fever, a mosquito-borne viral infection, is a common cause of fever and thrombocytopenia in tropical and subtropical regions. The diagnosis of dengue is typically based on clinical presentation and serological tests, such as IgM and IgG antibody tests. However, these tests can be unreliable in patients with SLE due to the presence of cross-reacting antibodies. Cross-reacting antibodies are antibodies that can bind to more than one antigen. In the case of SLE, these antibodies can bind to both dengue virus antigens and self-antigens, leading to false-positive results on dengue serological tests. This can create confusion and potentially delay the correct diagnosis, as was observed in this case. Furthermore, the clinical presentation of dengue can overlap with that of SLE, making it difficult to distinguish between the two

based solely on clinical grounds. Both diseases can present with fever, fatigue, headache, muscle and joint pain, and skin rashes. This overlap can lead to misdiagnosis and inappropriate treatment. In this case, the initial focus on dengue was understandable given the patient's clinical picture and the prevalence of dengue in the community. However, the lack of improvement with supportive treatment and the development of new symptoms inconsistent with dengue prompted a reevaluation of the diagnosis. When dengue serological tests are positive in a patient with suspected SLE, it is important to correlate the results with the clinical picture and consider alternative diagnostic tests. For example, a dengue NS1 antigen test or a dengue PCR test can be used to confirm the diagnosis of dengue. In this case, the negative dengue NS1 antigen test helped to rule out dengue fever and led to the consideration of other diagnoses, including SLE. The positive ANA test further supported the diagnosis of SLE, and the patient's response to corticosteroid therapy confirmed the diagnosis. The overlapping clinical features of SLE and dengue fever, particularly fever and thrombocytopenia, further complicate the diagnostic process. Both diseases can present with a myriad of non-specific symptoms, including fever, fatigue, headache, muscle and joint pain, and skin rashes. This overlap can make it difficult to distinguish between the two based solely on clinical grounds. In this case, the patient's initial presentation was consistent with dengue fever, but the development of new symptoms and the lack of response to supportive treatment prompted a reevaluation of the diagnosis. The positive ANA test, a hallmark of SLE, played a crucial role in establishing the correct diagnosis. However, it is important to note that ANA can also be found in other autoimmune diseases and even in healthy individuals, so it cannot be used as the sole diagnostic criterion for SLE. The overlapping clinical features of SLE and dengue fever can create a diagnostic conundrum, especially in regions where both diseases are prevalent. Both diseases can present with a wide range of non-specific symptoms, including fever, fatigue, headache, muscle and joint pain, and skin rashes. This overlap can make it difficult to distinguish between the two based solely on clinical grounds. In this case, the patient's initial presentation with fever, thrombocytopenia, arthralgia, and rash was consistent with both SLE and dengue fever. The prevalence of dengue in the community and the ongoing dengue outbreak further biased the initial diagnosis towards dengue. However, the persistence of symptoms and the development of new symptoms, such as shortness of breath and pleural effusion, raised concerns about the initial diagnosis. The lack of improvement with supportive treatment for dengue also prompted a reevaluation of the diagnosis. While SLE and dengue fever share many common symptoms, there are also some key differences in their clinical presentations. SLE is more likely to present with systemic symptoms, such as fatigue, weight loss, and malaise, while dengue fever is more likely to present with acute febrile illness and rash. SLE can also affect multiple organ systems, leading to a wider range of symptoms than dengue fever. For example, SLE can cause renal involvement, neuropsychiatric manifestations, and serositis, while dengue fever typically does not. In this case, the development of shortness of breath and pleural effusion, which are not typical features of dengue fever, raised the suspicion for SLE. The positive ANA test further supported the diagnosis of SLE, and the patient's response to corticosteroid therapy confirmed the diagnosis. The diagnostic journey in this case highlights the importance of a thorough and systematic approach to diagnosis, especially when dealing with diseases that share overlapping features. A high index of suspicion for SLE is crucial, even in dengue-endemic areas, to avoid diagnostic delays and potential complications. The diagnostic process in this case involved a careful evaluation of the patient's clinical presentation, laboratory findings, and imaging studies. The initial

focus on dengue was challenged by the persistence of symptoms and the development of new symptoms. The positive ANA test raised the suspicion for SLE, but the diagnosis was confirmed only after a comprehensive evaluation of all available data. The diagnosis of SLE often requires a multidisciplinary approach, involving collaboration between primary care physicians, rheumatologists, and other specialists, depending on the organ systems involved. In this case, the patient was initially seen by a primary care physician, who suspected dengue fever. However, the persistence of symptoms and the development of new symptoms prompted a referral to a rheumatologist, who ultimately made the diagnosis of SLE. Collaboration between different specialists is crucial for ensuring accurate and timely diagnosis of SLE, especially in complex cases with overlapping clinical presentations. Each specialist brings their own expertise and perspective to the diagnostic process, allowing for a more comprehensive evaluation of the patient's condition. In some cases, advanced diagnostic tests may be necessary to confirm the diagnosis of SLE or to differentiate it from other conditions. These tests may include specific autoantibody tests, such as anti-dsDNA antibodies and anti-Smith antibodies, as well as complement levels and inflammatory markers. In this case, the positive ANA test was a key finding that raised the suspicion for SLE. However, the diagnosis was confirmed only after a comprehensive evaluation of all available data, including the patient's clinical presentation, laboratory findings, and imaging studies. This case underscores the importance of vigilance and reevaluation in the diagnostic process. The initial misdiagnosis as dengue fever highlights the potential for diagnostic errors when dealing with overlapping clinical presentations. The persistence of symptoms and the development of new symptoms prompted a reevaluation of the diagnosis, leading to the correct diagnosis of SLE. This case serves as a reminder that diagnosis is not always a straightforward process and that ongoing vigilance and reevaluation are essential, especially in complex cases. The ability to question initial assumptions and to consider alternative diagnoses is crucial for ensuring accurate and timely diagnosis. Diagnosis is not a static event but rather a dynamic process that evolves over time as new information becomes available. In this case, the initial diagnosis of dengue fever was based on the patient's clinical presentation and the prevalence of dengue in the community. However, the persistence of symptoms and the development of new symptoms prompted a reevaluation of the diagnosis, leading to the correct diagnosis of SLE. This case highlights the importance of remaining open to new information and being willing to revise the diagnosis as needed. The ability to adapt to changing circumstances and to incorporate new information into the diagnostic process is essential for ensuring accurate and timely diagnosis. Patients play a crucial role in the diagnostic process by providing accurate and detailed information about their symptoms and medical history. They can also help to identify new symptoms or changes in their condition that may warrant further investigation. In this case, the patient's report of new symptoms, such as shortness of breath and pleural effusion, played a key role in prompting a reevaluation of the diagnosis. This highlights the importance of patient engagement in the diagnostic process and the need for healthcare providers to actively listen to their patients and address their concerns.[11-14]

This case vividly illustrates the critical importance of maintaining a broad differential diagnosis when evaluating patients presenting with fever and thrombocytopenia, particularly in regions where dengue fever is endemic. While dengue fever is a common and often rightfully suspected culprit in such cases, this case serves as a potent reminder that other conditions, including autoimmune diseases like systemic lupus erythematosus (SLE), can mimic dengue and must be considered to avoid diagnostic pitfalls and potentially life-threatening delays in

appropriate treatment. The initial misdiagnosis of dengue fever in this case highlights the dangers of premature closure in the diagnostic process. Premature closure occurs when a clinician settles on a diagnosis too early in the evaluation, often based on initial impressions or the most common or readily available explanation. This can lead to overlooking other potential diagnoses, particularly those that are less common or more complex. In this case, the prevalence of dengue fever in the community and the patient's initial presentation with fever, thrombocytopenia, arthralgia, and rash created a strong bias towards a diagnosis of dengue. This bias, coupled with the urgency of managing a potentially serious infectious disease, may have led to a premature closure of the diagnostic process, overlooking the possibility of SLE. Maintaining a broad differential diagnosis requires a "wide-angle lens" approach, considering a range of possible diagnoses even when a seemingly obvious explanation presents itself. This is particularly important in cases with non-specific symptoms, such as fever and thrombocytopenia, which can be seen in a variety of conditions. In this case, a broader differential diagnosis would have included not only dengue fever but also other infectious diseases, such as malaria and leptospirosis, as well as autoimmune diseases, such as SLE and Still's disease. This broader perspective would have increased the likelihood of considering SLE earlier in the diagnostic process, potentially leading to earlier diagnosis and treatment. While maintaining a broad differential is essential, it is equally important to pay close attention to clinical clues that may point toward a specific diagnosis. In this case, several clinical clues suggested that the initial diagnosis of dengue fever might be incorrect. The patient's persistent fever despite appropriate treatment for dengue, the development of new symptoms such as shortness of breath and pleural effusion, and the lack of improvement with supportive care all raised red flags. These atypical features should have prompted a reevaluation of the diagnosis and a consideration of alternative diagnoses, including SLE. Cultivating a mindset of "what if?" can be a powerful tool in the diagnostic process. This involves questioning initial assumptions and considering alternative explanations, even when a seemingly plausible diagnosis has been made. In this case, asking "what if this is not dengue fever?" would have opened up the diagnostic possibilities and led to a more thorough investigation. This could have included additional laboratory tests, such as an ANA test, and imaging studies, such as a chest X-ray, which ultimately revealed the correct diagnosis of SLE. In complex cases, collaboration between healthcare providers with different areas of expertise can be invaluable in reaching the correct diagnosis. In this case, involving a rheumatologist earlier in the diagnostic process could have expedited the diagnosis of SLE. Rheumatologists have specialized knowledge and experience in diagnosing and managing autoimmune diseases, including SLE. Their expertise could have helped to interpret the patient's clinical presentation and laboratory findings in the context of SLE, leading to earlier diagnosis and treatment. Early diagnosis of SLE is crucial for preventing disease progression and complications. SLE can affect multiple organ systems, and early treatment can help to control disease activity and prevent irreversible organ damage. In this case, the delay in diagnosis may have contributed to the development of pleural effusion, a manifestation of serositis, one of the ACR criteria for SLE. While the patient responded well to corticosteroid therapy, earlier diagnosis and treatment could have potentially prevented this complication.[15-17]

Antinuclear antibodies (ANA) are a hallmark of systemic lupus erythematosus (SLE), and their presence is one of the diagnostic criteria for the disease. However, ANA can also be found in other autoimmune diseases and even in healthy individuals. Therefore, the diagnosis of SLE should not be based solely on a positive ANA test but must be made in

conjunction with clinical findings and other laboratory investigations. In this case, the positive ANA test played a crucial role in establishing the correct diagnosis. However, it is important to note that the patient also met other diagnostic criteria for SLE, including arthritis, serositis, hematologic disorder, and immunologic disorder. The presence of these additional criteria, along with the clinical course and response to corticosteroid therapy, confirmed the diagnosis of SLE. ANA are autoantibodies that target components of the cell nucleus, such as DNA, RNA, and proteins. These antibodies are produced by the immune system in SLE, and their presence can be detected in the blood using various laboratory techniques. The ANA test is a highly sensitive test for SLE, with over 95% of SLE patients testing positive for ANA. However, the test is not specific for SLE, as ANA can also be found in other autoimmune diseases, such as rheumatoid arthritis and Sjögren's syndrome, as well as in some healthy individuals. Therefore, a positive ANA test alone is not sufficient to diagnose SLE. The diagnosis must be made in conjunction with clinical findings and other laboratory investigations, such as specific autoantibody tests, complement levels, and inflammatory markers. In this case, the positive ANA test played a crucial role in establishing the correct diagnosis. The patient's initial presentation with fever, thrombocytopenia, arthralgia, and rash was consistent with dengue fever, which was prevalent in the community at the time. However, the persistence of her symptoms and the development of new symptoms, such as shortness of breath and pleural effusion, prompted further investigation. The positive ANA test raised the suspicion for SLE, and further laboratory investigations, including specific autoantibody tests and complement levels, confirmed the diagnosis. The patient's clinical course and response to corticosteroid therapy further supported the diagnosis of SLE. While the ANA test is a valuable tool in the diagnosis of SLE, it is important to recognize its limitations. The test can be positive in other autoimmune diseases and even in healthy individuals, so a positive result does not always indicate SLE. Furthermore, the ANA test does not provide information about the specific type of ANA present, which can be helpful in determining the prognosis and treatment of SLE. For example, anti-dsDNA antibodies are associated with a higher risk of lupus nephritis, while anti-Smith antibodies are more specific for SLE but are less common. The interpretation of ANA test results should always be done in conjunction with clinical findings and other laboratory investigations. A positive ANA test in a patient with symptoms suggestive of SLE should prompt further investigation to confirm the diagnosis. In this case, the positive ANA test was correlated with the patient's clinical presentation, including fever, thrombocytopenia, arthralgia, and rash, as well as other laboratory investigations, such as specific autoantibody tests and complement levels. The patient's clinical course and response to corticosteroid therapy further supported the diagnosis of SLE.[18-20]

4. Conclusion

This case report highlights the diagnostic challenges encountered when differentiating between SLE and dengue fever, particularly in tropical regions where dengue is endemic. The overlapping clinical features of these two distinct diseases, especially fever and thrombocytopenia, can lead to initial misdiagnosis and delays in appropriate treatment. In this case, the patient's initial presentation with fever, thrombocytopenia, arthralgia, and rash was consistent with dengue fever, which was prevalent in the community at the time. However, the persistence of her symptoms and the development of new symptoms, such as shortness of breath and pleural effusion, prompted further investigation. The positive ANA test raised the suspicion for SLE, and further laboratory investigations, including specific autoantibody tests and complement levels, confirmed the diagnosis. This case underscores the importance

of maintaining a broad differential diagnosis when evaluating patients with fever and thrombocytopenia in dengue-endemic areas. A high index of suspicion for SLE is crucial, even during dengue outbreaks, to ensure timely diagnosis and appropriate management. Early diagnosis of SLE is essential to prevent disease progression and complications. Prompt initiation of corticosteroid therapy can effectively control disease activity and improve patient outcomes. This case serves as a reminder for healthcare professionals to remain vigilant and consider alternative diagnoses, especially in cases with overlapping clinical presentations. A thorough and systematic approach to diagnosis, including a detailed clinical evaluation, appropriate laboratory investigations, and collaboration between different specialists, is crucial for ensuring accurate and timely diagnosis of SLE and other potentially life-threatening conditions.

5. References

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