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A 47-Year-Old Woman with Undiagnosed Behçet's Disease Presenting with Recurrent Thromboembolism and Aortic Dissection: A Multidisciplinary Perspective

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Abstract

Behçet's disease (BD) is a systemic vasculitis characterized by recurrent oral and genital ulcers, uveitis, and skin lesions, often leading to severe vascular complications, including recurrent thromboembolism and aortic dissection. While its etiology remains uncertain, BD is thought to involve genetic predisposition and environmental triggers, with associations to HLA-B51 particularly prevalent among populations along the historical Silk Road. Diagnosing BD is challenging due to its diverse symptoms and lack of specific biomarkers, necessitating a holistic approach that considers a wide array of clinical, serological, and imaging findings.

This report presents the case of a 47-year-old woman with previously undiagnosed BD who developed severe complications, including aortic dissection and pulmonary embolism. A multidisciplinary approach was critical in recognizing the systemic nature of her condition, eventually confirming BD through the combination of vascular involvement, mucocutaneous symptoms, and a positive HLA-B51 marker. Following diagnosis, targeted treatment involving immunosuppressive therapy and anticoagulation led to significant improvement. This case underscores the importance of a comprehensive, interdisciplinary perspective in managing BD, especially in complex cases where symptoms span multiple organ systems. Further research into BD's underlying mechanisms and more effective, integrative treatment approaches is essential to improve patient outcomes.

Introduction

Behçet's disease (BD) is a rare, chronic, systemic vasculitis of unknown etiology, marked by recurrent oral and genital ulcers, uveitis, skin lesions, and serious vascular complications such as thromboembolism and aortic dissection (1). First described in 1937 by Hulusi Behçet, BD is prevalent along the historical Silk Road, affecting populations in the Middle East, the Mediterranean, and East Asia, though cases are documented worldwide (2,3). The disease's etiology is complex, thought to involve genetic predisposition (notably HLA-B51) and environmental triggers, which activate abnormal immune responses, leading to vascular inflammation (4,5). Diagnosing BD can be challenging due to the disease's diverse manifestations and the lack of specific biomarkers, requiring a comprehensive clinical, serologic, and imaging evaluation (6). This report presents a complex case of BD, emphasizing the importance of a holistic, multidisciplinary approach for managing patients with severe vascular involvement.

Case Presentation

A 47-year-old woman presented to the pulmonology clinic with complaints of back pain, dyspnea, and hemoptysis. Her medical history revealed recurrent joint pain and dyspnea, previously treated as chronic pulmonary thromboembolism. Despite anticoagulant therapy, her symptoms persisted, and she had seen multiple specialists over the years, with no unifying diagnosis established.

1. **Gynecologic Evaluation:** The patient had recurrent painful genital ulcers, diagnosed as nonspecific vulvitis and managed with topical corticosteroids, which provided limited symptom relief.
2. **Ophthalmologic Evaluation:** Repeated episodes of eye redness, pain, and blurred vision were treated with corticosteroid eye drops, but no systemic cause was identified.
3. **Rheumatologic Evaluation:** She experienced joint pain and fatigue, initially diagnosed as nonspecific inflammatory arthritis. Vasculitis was suspected, and NSAIDs were prescribed.
4. **Gastroenterologic Evaluation:** Complaints of intermittent abdominal pain and diarrhea led to a colonoscopy, which showed mild, nonspecific colonic inflammation, consistent with irritable bowel syndrome (IBS). Symptomatic therapy was provided.

On admission, further evaluations were conducted to clarify her condition:

- **CT Angiography:** Identified filling defects in the pulmonary artery, consistent with pulmonary embolism.
- **Laboratory Findings:** Elevated ESR, CRP, and D-dimer indicated systemic inflammation and a hypercoagulable state.
- **Autoimmune and Genetic Testing:** Negative for common autoimmune markers but positive for HLA-B51, associated with BD.
- **Ophthalmologic Re-Evaluation:** Anterior uveitis was detected, raising the suspicion of systemic inflammatory disease.

The combination of vascular symptoms, recurrent mucocutaneous lesions, uveitis, and HLA-B51 positivity led to a diagnosis of BD.

Management and Treatment

The patient was hospitalized and managed for acute complications:

- **Aortic Dissection:** Treated with beta-blockers and vasodilators to control blood pressure, while surgical intervention was delayed due to the extent of dissection and the patient's condition (7).
- **Pulmonary Embolism:** Continued anticoagulation therapy with caution, balancing the risk of bleeding due to vascular involvement.

Following stabilization, a long-term immunosuppressive regimen with high-dose corticosteroids and cyclophosphamide was initiated to control systemic inflammation. Over subsequent follow-up, her symptoms improved, with stabilization of the aortic dissection and resolution of the pulmonary embolism. Mucocutaneous and ocular symptoms were managed effectively, and regular multidisciplinary monitoring was recommended.

Discussion

BD is known for its clinical heterogeneity and can present with multisystem involvement, often making diagnosis challenging. The association of BD with the HLA-B51 allele has been well-documented, particularly in populations along the Silk Road (8). While BD typically involves mucocutaneous and ocular lesions, its vascular complications can be severe, with vascular lesions occurring in up to 40% of patients, particularly affecting large vessels and increasing the risk of thromboembolism and aortic aneurysms (9,10). The pathogenesis is thought to involve aberrant immune responses, including Th1-mediated inflammation, resulting in endothelial damage and subsequent thrombosis (11).

1.Diagnostic Challenges

The International Criteria for Behçet's Disease (ICBD) provide a structured approach for diagnosis but remain limited by the disease's clinical variability (12). In our patient, the persistent, recurrent nature of her symptoms across multiple systems and the absence of a definitive single-organ diagnosis underscored the need for a holistic approach. Advanced imaging and genetic markers, such as HLA-B51, were critical in this case, highlighting their role in BD diagnosis when clinical signs are ambiguous (13).

2. Management Strategies

Immunosuppressive therapy forms the cornerstone of BD management, with corticosteroids and cyclophosphamide frequently used to control acute inflammation in severe cases (14,15). In patients with vascular involvement, such as our case, biologics targeting TNF-α (e.g., infliximab) and IL-1 have shown efficacy in reducing inflammation and preventing relapse (16). Anticoagulation in BD is controversial; while beneficial in managing thrombotic events, it requires careful monitoring due to the risk of bleeding, particularly when major vessels are involved (17).

3. Holistic and Multidisciplinary Care

A multidisciplinary approach involving rheumatologists, ophthalmologists, vascular specialists, and pulmonologists is essential to manage the diverse manifestations of BD effectively (18). This approach not only improves diagnostic accuracy but also tailors treatment to each patient's unique disease presentation. Integrating mental health support is also crucial, as patients with BD often face psychological stressors due to the chronic and unpredictable nature of their disease (19).

Conclusion

This case illustrates the importance of a comprehensive, multidisciplinary approach to BD, especially in patients with complex vascular and systemic involvement. Early diagnosis and targeted therapy, combining immunosuppressive agents and supportive care, can mitigate severe complications and improve patient outcomes. Future research should focus on identifying reliable biomarkers and exploring the role of novel biologic agents to refine BD management further.

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