

SUSPECTED CULTURE-NEGATIVE SEPTICEMIA PRESENTING AS RECURRENT POLYSEROSITIS IN A PATIENT WITH ADVANCED HIV INFECTION: A DIAGNOSTIC DILEMMA

Pati Gabunia

Tsertsvadze Infectious Diseases, AIDS and Clinical Immunology Research Center, Tbilisi, Georgia

Phone: +995599176085, E-mail: pg@aidscenter.ge

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Background: Septicemia in advanced HIV infection is a life-threatening condition that often presents with atypical clinical manifestations due to severe immunosuppression. Identifying the causative pathogen is critical, yet culture-negative sepsis or septicemia occurs frequently, posing a profound diagnostic and therapeutic challenge for clinicians managing opportunistic conditions.

Case Presentation: A 49-year-old male with advanced HIV infection (baseline CD4 count: 99 cells/mm³), who discontinued antiretroviral therapy (ART) in 2022, was admitted in January 2026 with clinical features highly suggestive of systemic septicemia, including progressive dyspnea, chest discomfort, and hemodynamic instability. Examination revealed severe recurrent polyserositis, characterized by a massive pericardial effusion (1200 mL drained) and bilateral pleural effusions. Despite the clear clinical presentation of an overwhelming systemic infection, extensive microbiological workups—including repeated blood cultures, pericardial fluid cultures, and pleural fluid cultures—failed to isolate any pathogenic bacterial or fungal flora. Initial empirical broad-spectrum antibiotic therapy combined with NSAIDs and the reinitiation of ART (DTG/3TC/TDF) resulted in temporary clinical stabilization.

Three months later, the patient suffered a severe clinical relapse with worsening respiratory failure, massive right-sided pleural effusion, persistent pericardial fluid, and mediastinal lymphadenopathy. A secondary diagnostic workup for suspected septicemia was urgently initiated. Multiple repeat cultures of blood, sputum, and drained serous fluids remained persistently negative for pathological flora. Molecular and smear examinations for latent opportunistic pathogens, including Tuberculosis, were also negative. Given the persistent systemic inflammatory responses and the absence of an isolated organism, culture-negative septicemia secondary to an occult opportunistic source remained the primary working diagnosis. Alternative etiologies, such as HIV-associated lymphoma or atypical presentation of disseminated infections, were also considered. The patient demonstrated gradual stabilization following aggressive empiric treatment modifications, including broad-spectrum antimicrobials and adjunctive corticosteroid therapy.

Conclusion: This case underscores that suspected septicemia in advanced HIV infection can present as recurrent polyserositis without yielding positive cultures from any biological fluid. In severely immunocompromised patients, a lack of microbial growth must not delay aggressive, empirical broad-spectrum antimicrobial therapy, and highlights the need for advanced molecular or tissue-based diagnostic modalities to uncover occult infectious sources.

References:

Ambrosioni J, Levi LI, Alagaratnam J, et al. European AIDS Clinical Society (EACS) Guidelines version 13.0, 2025. DOI: 10.1111/hiv.70120.