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Behind the mask of toxic cardiomyopathy: unmasking eosinophilic myocarditis in a patient requiring left ventricular assist device support

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Introduction: Eosinophilic myocarditis is a rare inflammatory myocardial disease characterized by eosinophilic infiltration of cardiac tissue, with clinical manifestations ranging from mild symptoms to end-stage heart failure, depending on the extent and severity of inflammation. Determining the underlying etiology of eosinophilic myocarditis is diagnostically challenging due to its association with hematological and malignant diseases, systemic eosinophilic disorders, infections, and drug-induced hypersensitivity reactions, as well as the potential absence of peripheral eosinophilia, necessitating an integrated assessment of clinical history, presentation, and myocardial histopathology.[1-3]

Case report: 23-year-old male presented with advanced heart failure (INTERMACS 3, NYHA IV), severely impaired left ventricular systolic function (LVEF 15%), and dependence on dobutamine inotropic support at admission. Symptoms, including fatigue with minimal exertion, recurrent lower-leg edema, and abdominal pain, first appeared six months before surgery. His medical history revealed long-standing cigarette and amphetamine use, as well as daily consumption of large quantities of energy drinks. Upon admission, relevant laboratory, microbiological, and immunological investigations and imaging studies were performed, with echocardiography revealing dilation of all cardiac chambers, severely impaired left ventricular systolic function (LVEF 13-15%), global hypokinesia to akinesia, moderate-to-severe mitral and tricuspid regurgitation, and reduced right ventricular systolic function (TAPSE 14 mm), while right heart catheterization demonstrated isolated post-capillary pulmonary hypertension and gastroscopy revealed hyperemic gastropathy. Preoperatively, a multidisciplinary assessment was performed, and odontogenic foci, mild iron-deficiency anemia, and subclinical hypothyroidism were treated, while psychiatric evaluation confirmed previous antidepressant use and recommended continuation of sertraline and nitrazepam. On September 18, 2025, following preoperative optimization and levosimendan pretreatment, a left ventricular assist device (LVAD; HeartMate 3) was implanted with concomitant atrial septal defect closure. Despite severe right ventricular dysfunction, the perioperative course was uneventful, without intraoperative or postoperative complications. Histopathological examination of the myocardium confirmed eosinophilic myocarditis, and the planned treatment strategy includes heart transplantation, for which the patient is currently being prepared.

Conclusion: In patients with dilated cardiomyopathy and a history of stimulant use, toxic myocardial injury may be considered; however, clinical presentation and exposure history alone are insufficient to reliably establish the etiology. Histopathological confirmation of eosinophilic myocarditis highlights the importance of comprehensive etiological evaluation and critical assessment of potential causative factors, including medications not typically associated with cardiac complications. Avoiding premature etiological conclusions is particularly important when they may influence therapeutic decisions, pre-transplant evaluation, and preparation for definitive surgical treatment.

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LITERATURE

1. Al Ali AM, Straatman LP, Allard MF, Ignaszewski AP. Eosinophilic myocarditis: case series and review of literature. Can J Cardiol. 2006 Dec;22(14):1233-7. https://doi.org/10.1016/S0828-282X(06)70965-5
2. Gulin D, Sikic J, Habek JC, Gulin SJ, Galic E. Hypersensitivity Eosinophilic Myocarditis in a Patient Receiving Multiple Drug Therapy: Challenges in Diagnosis and Defining the Aetiology. Drug Saf Case Rep. 2016 Dec;3(1):11. https://doi.org/10.1007/s40800-016-0034-8
3. Jafari Giv M. Exposure to Amphetamines Leads to Development of Amphetamine Type Stimulants Associated Cardiomyopathy (ATSAC). Cardiovasc Toxicol. 2017 Jan;17(1):13-24. https://doi.org/10.1007/s12012-016-9385-8