Title:
FULMINANT MYOCARDITIS IN AN 18-YEAR-OLD FEMALE WITH GRAM-POSITIVE BACTEREMIA RESULTING IN RIGHT VENTRICULAR FAILURE AND COMPLETE HEART BLOCK

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Introduction:
Fulminant myocarditis is a severe and rapidly progressive form of myocarditis that can lead to cardiogenic shock and complete heart block. While viral etiologies are common, bacterial myocarditis remains rare but carries significant morbidity and mortality. Early recognition and aggressive management are critical for survival.

Case Presentation:
An 18-year-old female with no prior medical history presented with several days of abdominal pain and dizziness. She was in shock and bradycardic (HR 50–60s). Laboratory tests showed an elevated lactate 3.79 mmol/L, AST 167 U/L, and ALT 62 U/L. A CT abdomen/pelvis suggested hepatic inflammation. Initial management included crystalloid resuscitation and empiric broad-spectrum antibiotics for presumed septic shock.
Despite transient stabilization, her heart rate declined into the 30s. Electrocardiography revealed a new third-degree atrioventricular (AV) block with ventricular-paced wide QRS complexes and diffuse ST elevations. High-sensitivity troponin was markedly elevated (2,294 ng/L), and liver enzymes peaked at AST > 7,000 U/L and ALT 4,148 U/L. Pointof-care echocardiography demonstrated preserved left ventricular ejection fraction (60–65%) but severe hypokinesis of the mid-to-apical right ventricular (RV) free wall and moderate tricuspid regurgitation. Pulmonary embolism was ruled out via CT angiography.
Right heart catheterization confirmed severe RV failure with a pulmonary artery pulsatility index (PAPI) of 0.70. Emergent transvenous pacing was initiated. Blood cultures grew gram-positive bacilli (not Anthracis), raising suspicion for bacterial myocarditis. The patient was transferred to a tertiary center for advanced mechanical circulatory support consideration.

Discussion:
This case highlights fulminant myocarditis complicated by cardiogenic shock, complete heart block, and right ventricular failure. The rapid clinical decline, high troponin levels, new AV block, and echocardiographic

findings support the diagnosis. Hepatic dysfunction was consistent with shock liver due to RV congestion and hypoperfusion. While viral etiologies are predominant, the presence of gram-positive bacilli raises the possibility of bacterial myocarditis. Listeria monocytogenes, Corynebacterium species, and Bacillus species have been implicated in rare cases. Systemic inflammatory responses in bacterial infections can further exacerbate myocardial dysfunction, complicating management.