

“Hemodynamic Relief, Myocardial Stress: Biventricular Takotsubo Post-Pericardial Decompression”

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Introduction: Cardiac tamponade is a life threatening physiological condition that requires emergent intervention to maintain hemodynamic stability. However, rapid pericardial fluid removal can cause acute ventricular dysfunction, also known as Takotsubo syndrome.

Case: A 70-year-old female with hypertension and hyperlipidemia presented with acute pancreatitis. She was persistently tachycardic and found to have a large pericardial effusion. A transthoracic echocardiogram (TTE) revealed hyperdynamic left ventricular systolic function, normal right ventricular function, significant respirophasic variation in transmitral inflow velocities, and inferior vena cava size of 1.6 cm with less than 50% decrease in size with respiration; all consistent with tamponade physiology. She had a normal exercise stress echocardiogram three months prior. Due to impending hemodynamic instability, a pericardial window with drain placement was performed with 900 ml of serosanguinous pericardial fluid output. Post-drainage TTE showed severely decreased biventricular systolic function with mid-distal and apical akinesis and preserved basal contractility most likely representing biventricular takotsubo.

Discussion: It was suspected that rapid removal of the large pericardial fluid led to sudden hemodynamic shifts and rapid withdrawal of sympathetic stimuli precipitated the newly depressed biventricular function as seen in stress induced cardiomyopathy. Repeat TTE one month later showed recovered biventricular systolic function with initiation of guideline directed medical therapy. The rapid recovery of ventricular function is also consistent with stress cardiomyopathy. Takotsubo syndrome is a complication of rapid pericardial drainage resulting in acute ventricular dysfunction. Biventricular involvement, though less common, may occur due to the combination of the acute withdrawal of sympathetic stimuli in high catecholamine states and the hemodynamic sequelae of rapid removal of pericardial fluid.

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