Journal of Clinical and Experimental Transplantation

Case Report OMICS International

**Keywords:** Ventricular assist; Anticoagulation; INTERMACS; Heartware

## Introduction

Le ventricular assist devices have signi cantly changed the way physicians manage advanced heart failure. Ventricular Assist Device Incti414.95devi/T1C.6205 aswall ST Elevation Myocardial Infarction (STEMI), had a cardiac catheterization and a drug eluting stent placed in the Le Anterior Descending artery (LAD) and diagonal arteries. He was transferred to our hospital for further care. During this time he also had two episodes of ventricular brillation requiring cardioversion. He was stabilized with a continuous amiodarone infusion at a rate of 1 mg/min and decreased to 0.5 mg/min. A transthoracic echocardiogram showed an ejection fraction of 24% with right ventricular systolic pressures of 40-45 mmHg and regional wall motion abnormalities in the LAD, circum ex, and right coronary artery territories. A subsequent, heart catheterization demonstrated patent stents in the LAD and the diagonal arteries and an elevated right ventricular pressure of 39/12 mmHg and a pulmonary artery pressure of 37/21 mmHg with a mean pulmonary capillary wedge pressure of 21. e le ventricular pressure was 95/3 mmHg. An Intra-aortic Balloon Pump (IABP) was placed.

During the rst day he had an episode of bradycardia; dobutamine was started at 2.5 mcg/kg/min and increased to 5 mcg/kg/min. e dobutamine was eventually stopped and the IABP was removed. He went into cardiogenic shock and the IABP was replaced within 12 h and he was started on norepinephrine and milrinone at 0.25 mcg/kg/h. e norepinephrine was weaned o ; however, the milrinone and IABP were unable to be discontinued. He was in cardiogenic shock with a New York Heart Association (NYHA) Class IV heart failure with a reduced ejection fraction with a life expectancy of less than 6 months and his Interagency Registry for Mechanically Assisted Circulatory Support (INTERMACS) pro le 2. A repeat echo showed an ejection fraction of 20% and regional wall abnormalities in the le anterior descending and right coronary artery territories. In addition, he had intermittent arrhythmias, including supraventricular tachycardia and atrial brillation with rapid ventricular rate. e patient needed a le ventricular assist device in order to improve and be discharged.

e patient was taken to the operating room and a Heartware le ventricular assist device (Heartware Inc., Framingham, MA) was placed a month a er the initial STEMI, without cardiopulmonary bypass. An echo was performed the following day which showed no systolic opening of the aortic valve at 2300-2500 revolutions per minute and minimal opening of the aortic valve at 2200 revolutions per minute. e IABP was removed on post-operative day 1 and he was extubated on post-operative day 4. e milrinone was weaned o and he was discharged home on post-operative day 18 on amiodarone 200 mg daily, furosemide 20 mg daily, losartan 25 mg daily, spironolactone 25 mg daily, and warfarin 4 mg daily.

e patient presented to an outside hospital with complaints of his ventricular assist device alarming 13 days a er discharge. e International Normalized Ratio (INR) was sub-therapeutic at 1.2 and the Lactate Dehydrogenase (LDH) level was greater than 1000 Units/L. He was started on therapeutic enoxaparin at 90 mg every 12 h and transferred to our institution. ere was concern for an acute LVAD thrombosis. e power on the LVAD was 15 Watts, the ow was >10 L, and the pump speed was 2,400 RPMs. A transthoracic echo showed an ejection fraction of 40-45% with mild le ventricular dilation. A cardiac casmfion. A

***Corresponding author:** Hannah Copeland, McGuire VA Medical Center, Virginia Commonwealth University, Surgical Service (112), 1201 Broad Rock Blvd, Richmond, VA 23249, USA, Tel: 804-675-5403; Fax: 804-675-5402; E-mail: hannahcopeland411@gmail.com

**Received**

leaving the ventricular assist device in place is an option.

kg/min. During this time, he was given another bolus of epti batide at 180 mcg/kg and then a continuous infusion at 2 mcg/kg/min for an additional 48 h. e LVAD ow continued to remain at 10 L with