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FIT Clinical Decision Making

HEMOLYSIS SECONDARY TO LVAD THROMBOSIS REQUIRING MANUAL PUMP STOPPAGE

Poster Contributions

Poster Hall B1

Saturday, March 14, 2015, 10:00 a.m.-10:45 a.m.

Session Title: FIT Clinical Decision Making: Heart Failure and Cardiomyopathies

Abstract Category: Heart Failure and Cardiomyopathies

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Background: Continuous flow left ventricular assist devices (CF-LVAD) provide circulatory support, improve survival, functional capacity and quality of life for patients with end stage heart failure. Increased awareness of possible CF-LVAD complications such as hemolysis and CF-LVAD thrombosis is essential as they are associated with a high mortality.

Case: A 46-year-old female with history of cardiac sarcoidosis complicated by end stage heart failure with CF-LVAD placed as destination therapy presents with a few days of progressive dyspnea, increasing CF-LVAD alarms and lightheadedness associated with near syncope but no falls. She also has had history of subarachnoid hemorrhage resulting in cessation of anticoagulation. Physical exam was notable for jugular venous distention, cool extremities and mean arterial pressure of 60 mm Hg.

Decision Making: Interrogation of CF-LVAD was significant for low flow and low voltage alarms with pulsatility index of 2.5 with evidence of brief pump stoppage. Evaluation of blood work demonstrated an elevated LDH of 2950 U/L, plasma hemoglobin 120 mg/dL, INR 1.2, and hemoglobin 5.5 g/dL. Echocardiogram showed absence of color doppler in outflow graft, aortic valve that opened with every beat and evidence of moderate mitral and tricuspid regurgitation. Concern for hemolysis secondary to pump thrombosis was suspected with outflow graft occlusion. This was then confirmed by CT chest with contrast. The pump was manually stopped resulting in resolution of hemolysis. Milrinone was initiated for hemodynamic support and patient had successful pump exchange with clear evidence of thrombus in outflow graft.

Conclusion: This case demonstrates how early suspicion of possible CF-LVAD complications resulted in diagnosis pump thrombosis with outflow graft occlusion. In this scenario, manual pump stoppage led to resolution of hemolysis and subsequent initiation of inotropes to maintain clinical stability with eventual pump exchange.