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Image

A "Blinking" Left Ventricular Assist Device

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A 61-year-old male with history of coronary artery disease and end stage ischemic cardiomyopathy underwent a successful implantation of a HeartMate 3 device with an uneventful recovery. However, after 6 months, he complained of increased fatigue, intermittent dizziness, and weakness after minor exertion. The pulsatility index was increased to 8, but the left ventricular assist device (LVAD) was otherwise functioning properly. No major changes in either medications or laboratory results were noted. The patient started getting low flow alarms seven months after the procedure and the dizziness increased. On the controller, a continuously changing ("blinking") speed was noted (Supplemental Video 1). There was a palpable peripheral pulse and a measurable systolic and diastolic systemic pressure of 105/70 mmHg. There were no signs of hemolysis.

The patient was admitted for observation, and a transesophageal echocardiogram was obtained (Supplemental Video 2). The main findings included:

1. Partially recovered left ventricle with ejection fraction 40-45%
2. Small left ventricular cavity with the inflow cannula touching the septum on every other beat
3. Hypokinetic and moderately enlarged right ventricle.

After decreasing the speed of the LVAD to from 5200 revolutions per minute to 4800 and giving oral and intravenous fluids, the situation improved. Unfortunately, the symptoms did not completely resolve, and the patient remains admitted to await a cardiac transplantation.

This case demonstrates an unusual pattern of a "blinking" LVAD speed due to left ventricular recovery with a small cavity and frequent suctions.

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