



## Self- Administered Acoustic Shockwave Therapy in Managing Ventricular Ectopy in HFrEF: A Case Report

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### Introduction

Ventricular Ectopy in patients with heart failure and reduced ejection fraction (HFrEF) is typically managed with guideline-directed medical therapy (GDMT). This case highlights the potential benefits and safety of self-administered non-invasive extracorporeal acoustic shockwave therapy (ESWT) in treating arrhythmias.

### Material & Methods

A 92 year old male with a history of diabetes, hypertension, hyperlipidemia and chronic HFrEF (LVEF 30%) presented with consistent dyspnea on exertion (DOE) and fatigue with frequent premature ventricular contractions, even after BiV ICD placement (1/18/2023). His ectopy was so intense that he was considered to be a candidate for developing PVC associated cardiomyopathy. Stress echo testing showed an EF of 30 to 35%. His activity was severely limited by DOE so much that a simple climb of 3 to 6 steps left him requiring to stop and rest. Casual walking was limited to just a few yards at a time.

This quality of life led to a decision to self-administer acoustic shockwave therapy to himself. He targeted the left point of maximum impulse (PMI) beneath the left areola as well as the contralateral site.

The ESWT treatment consisted of 4000 pulses per day at level 10 at a frequency of 4 Hz. The pulses were administered directly beneath the left nipple and near the right lung. The patient incorporated hand treatments, primarily focusing on the heart reflexology point, and administered 1000 pulses to each hand daily. ESWT was performed five times per week over a three-month period (November-February) by the patient. After the initial 90 days, the patient continued the same treatment but switched to a weekly schedule instead of daily sessions. The patient was studied to assess the impact of optimized medical therapy combined with self-administered ESWT over six months. Post-intervention, the patient demonstrated dramatic decrease in ectopic cardiac activity and a possible modest improvement in left ventricular function.

### Results

Figure 1. EKG 2-months prior to ESWT Therapy shows atrial flutter with v-paced

### Discussion

Clinically, the patient reported improved exercise tolerance and quality of life. The patient progressed from being able to climb only six steps with rest to ascending an entire flight with rest at the top. This case suggests that acoustic shock wave therapy may serve as a beneficial adjunct in managing complex cardiac arrhythmias in elderly patients with heart failure.

Keywords: Shock wave therapy, Ventricular ectopy, Heart failure, Premature ventricular complexes