

Improvements in Myocardial Perfusion Observed in Patients Supported With the C-Pulse Counterpulsation Device

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Disclosure

- Consultant for Sunshine Heart, Inc.

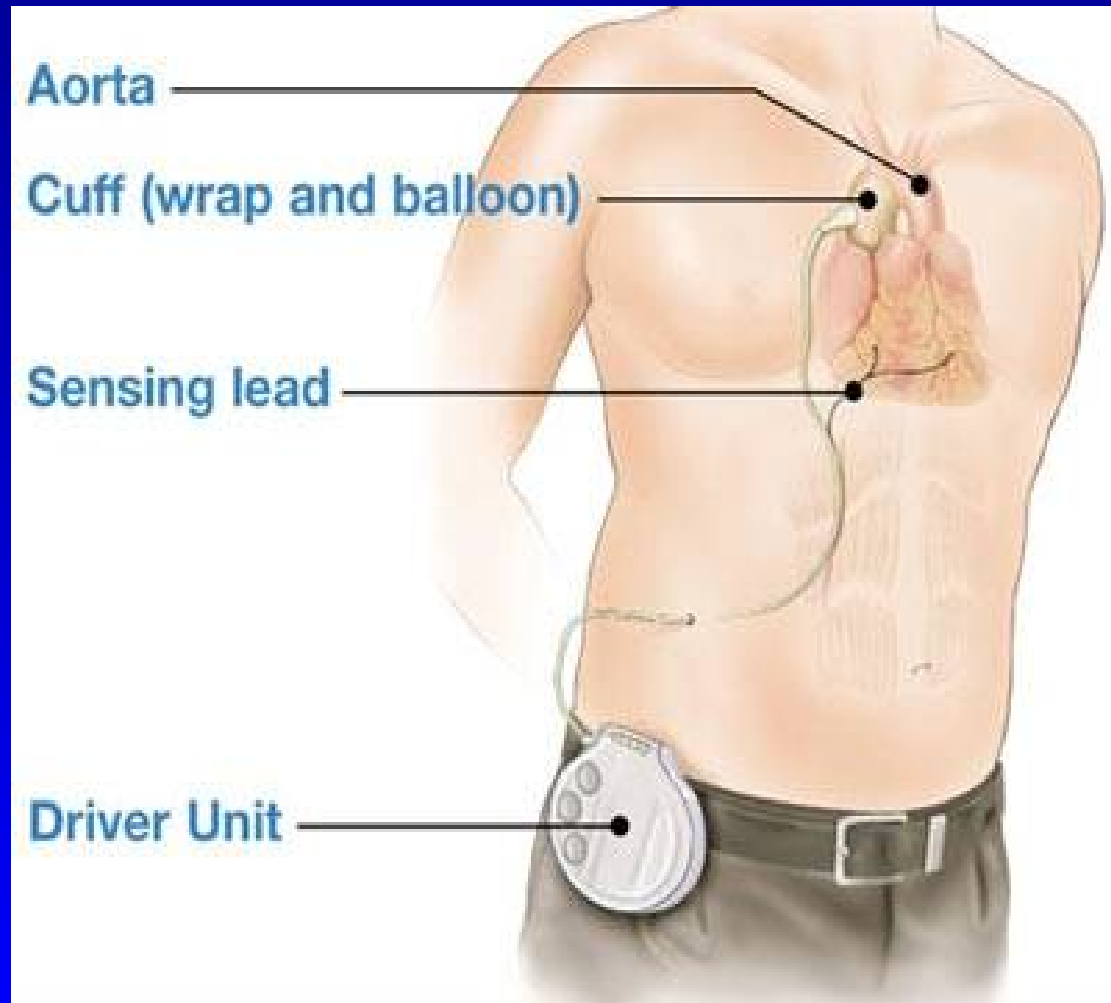
Objective

- To assess effect of a new implantable counterpulsation device on myocardial perfusion in patients with ischemic and idiopathic cardiomyopathy.

Introduction

- The **C-Pulse implantable counterpulsation device**: novel form of mechanical assist therapy aimed at patients with Class III and ambulatory Class IV heart failure symptoms.
- In animal models: leads to systolic afterload reduction and diastolic augmentation of coronary blood flow.
- Aim to study changes in myocardial perfusion before and after implantation of the C-Pulse device, in patients with **ischemic**, and **idiopathic CMP**

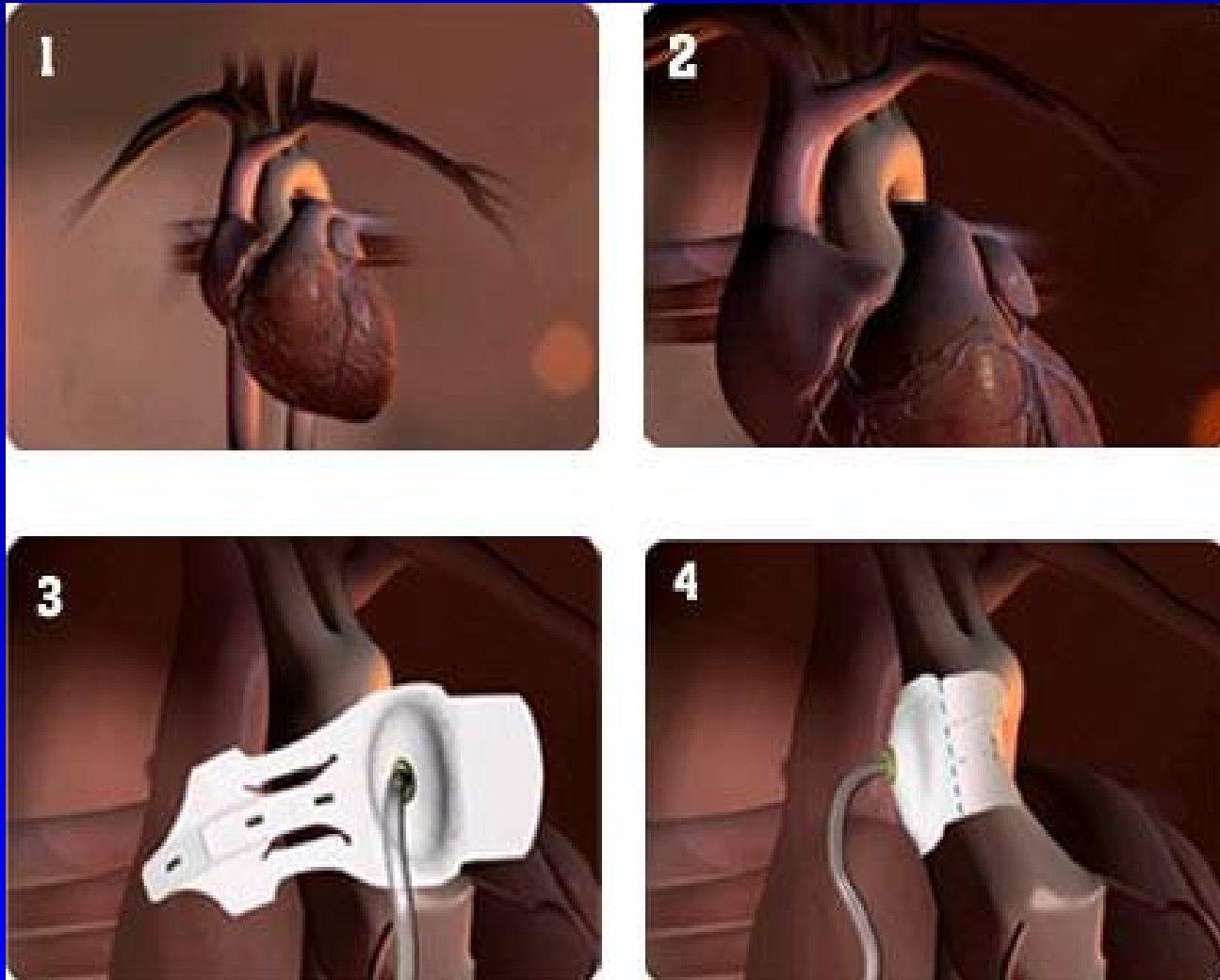
C-Pulse Counterpulsation Device (Sunshine Heart)



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C-Pulse Counterpulsation Device (Sunshine Heart)



Methods

- Patients (n= 2) underwent C-Pulse implant according to the standard Sunshine Heart C-Pulse Feasibility Study Protocol.
- Sestamibi myocardial scans were obtained **before implantation, and at 1 and 6 months post-implant.**

Results

Patient 1: Ischemic cardiomyopathy

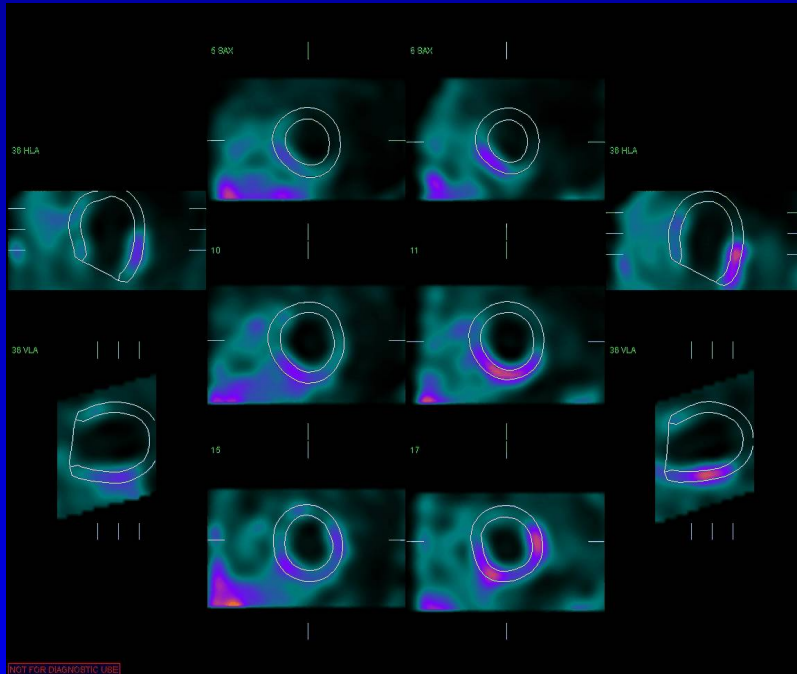
	SSS	SRS	SDS	LVEF	NYHA
Baseline	35	32	3	29	IIIb
1 month	42	34	8	22	II
6 months	21	17	4	26	I

Patient 2: Idiopathic cardiomyopathy

	SSS	SRS	SDS	LVEF	NYHA
Baseline	14	6	8	25	IIIb
1 month	3	1	2	24	II
6 months	2	0	2	32	I

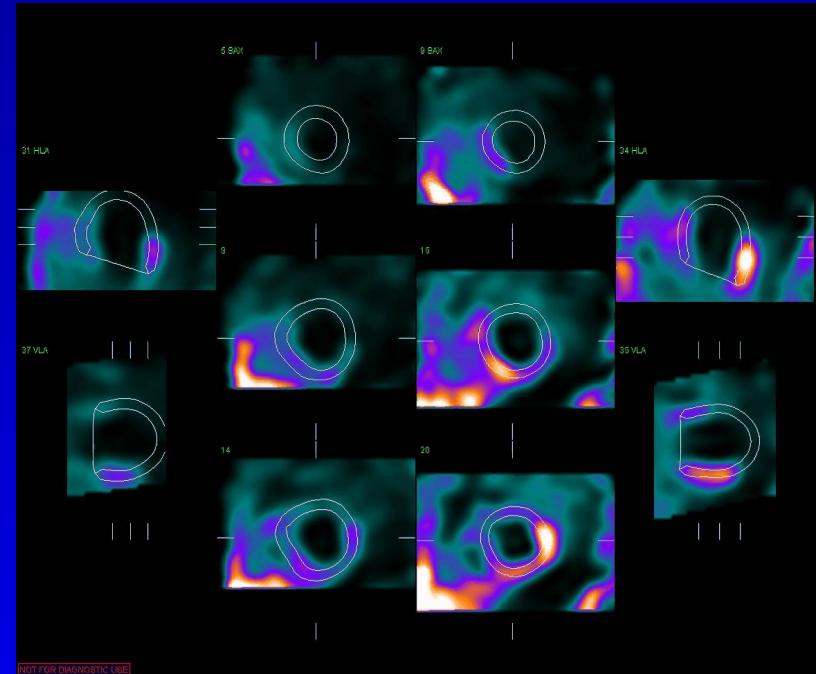
Ischemic Cardiomyopathy

Pre-Implant



NYHA IIIb

6 Months Post-Implant

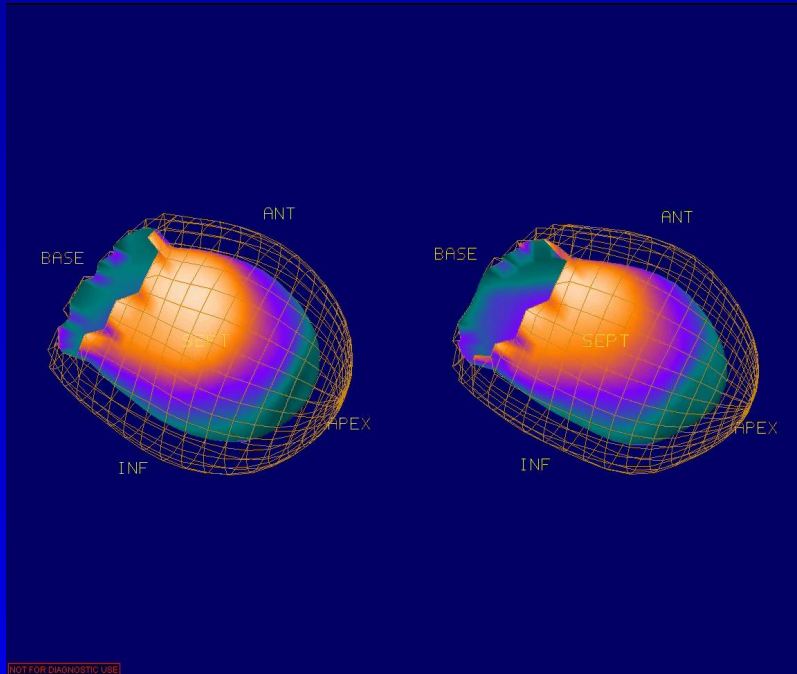


NYHA I

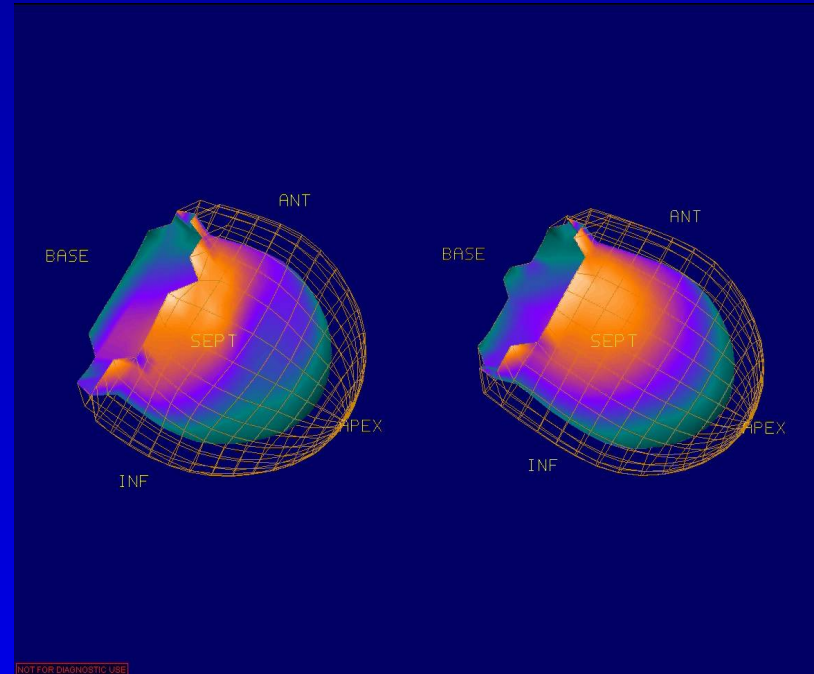
Ischemic Cardiomyopathy

Pre-Implant

6 Months Post-Implant



LVEF 29%

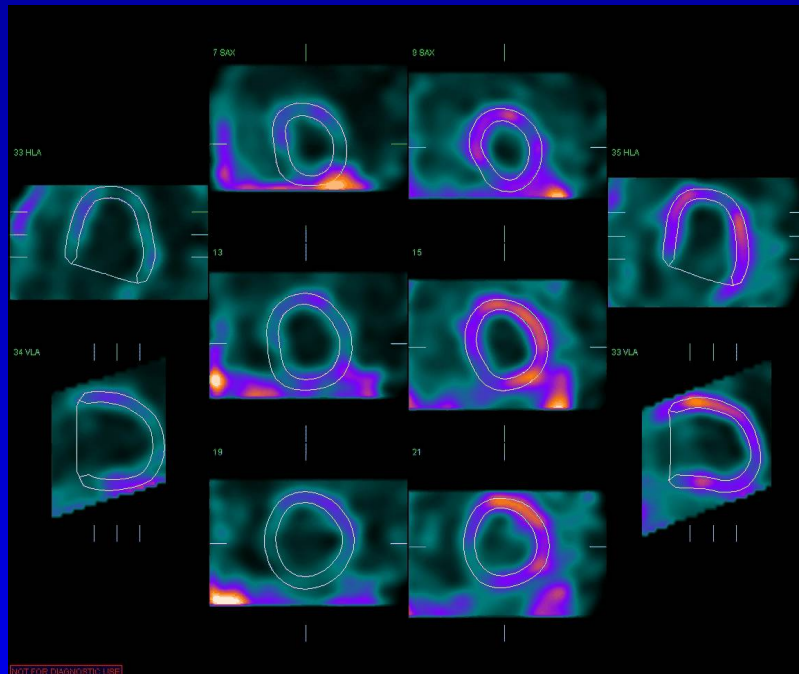


LVEF 26%

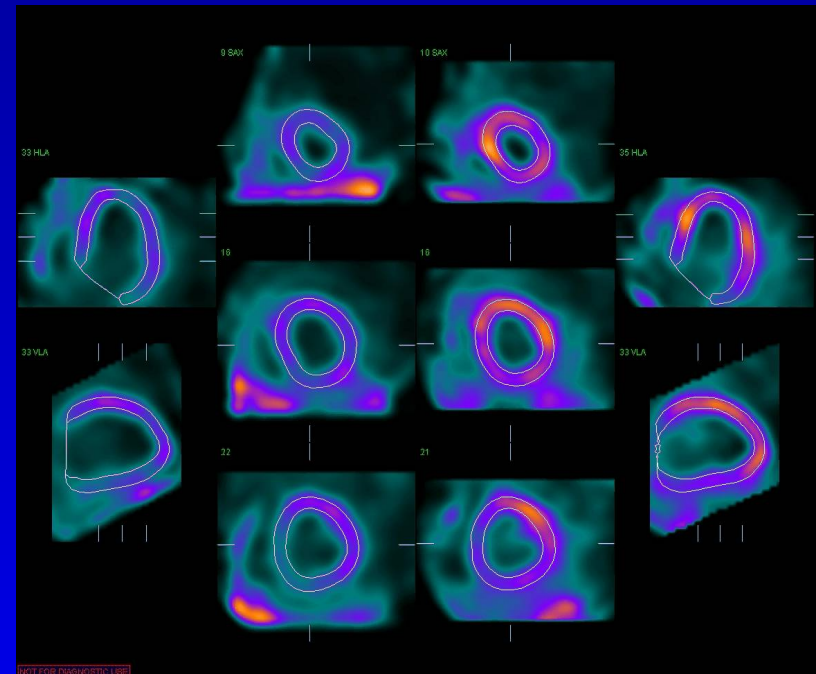
Idiopathic Cardiomyopathy

Pre-Implant

6 Months Post-Implant



NYHA IIIb

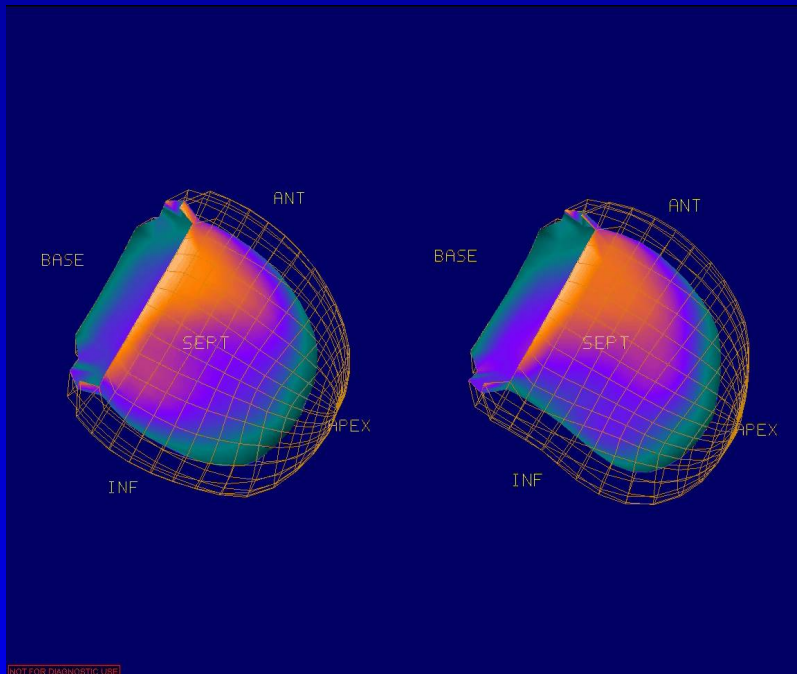


NYHA I

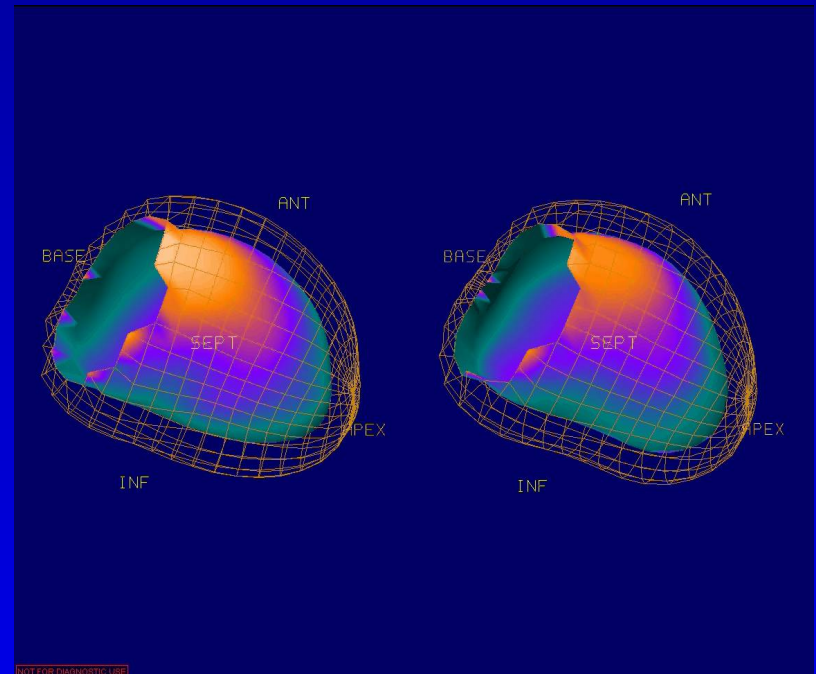
Idiopathic Cardiomyopathy

Pre-Implant

6 Months Post-Implant



LVEF 25%



LVEF 32%

Conclusion

- Nuclear myocardial perfusion studies have not previously been reported in patients before and during support with intra-aortic balloon counterpulsation.
- Sestamibi scans in ambulatory patients implanted with the C-Pulse counterpulsation device suggest improvement in myocardial perfusion as a mechanism of action for this form of therapy.
- These benefits are present in both **ischemic** and **idiopathic** forms of cardiomyopathy. These findings warrant further similar testing in larger numbers of patients.