

Hybrid transcatheter and minimally invasive left ventricular reconstruction for the treatment of ischemic cardiomyopathy: mid-term results

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Declaration of interest

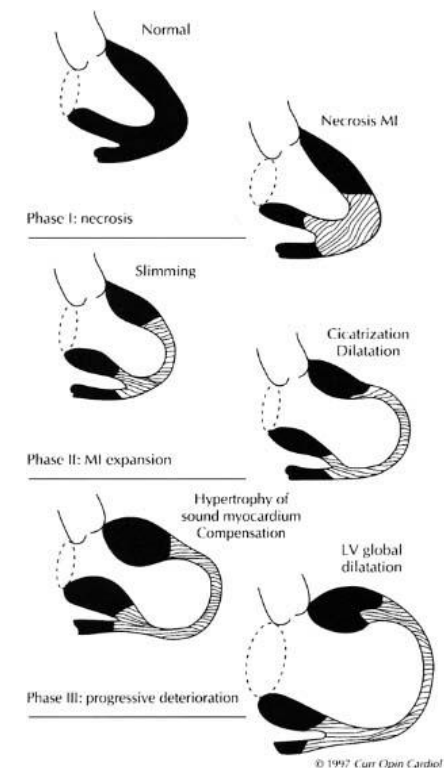
- Consulting/Royalties/Owner/Stockholder of a healthcare company : Consulting speakingfees and proctoring BioVentrix Inc. San Ramon, CA, USA

Background

Remodelling of the left ventricle (LV) after anterior myocardial infarction can result in a pathological increase in LV volume, reduction in LV ejection fraction (EF) and heart failure.

Lack of therapies to directly remodel the scarred LV to treat heart failure.

Hybrid LV reconstruction offers a minimally-invasive option for direct LV remodelling.



Methods

Mid-term clinical and echocardiographic results of a novel hybrid transcatheter and minimally invasive surgical technique to reconstruct the remodelled LV by plication and exclusion of the scar and reduction of the excess volume, resulting in decreased wall stress and increased EF.

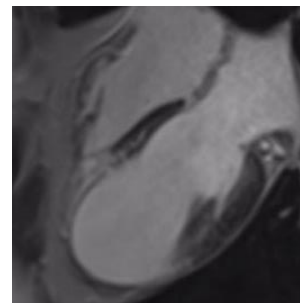
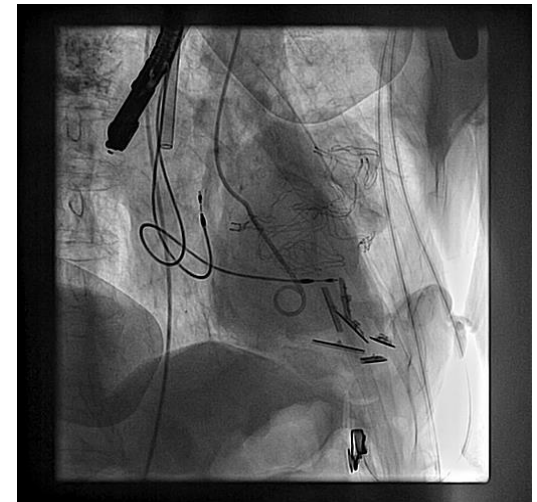
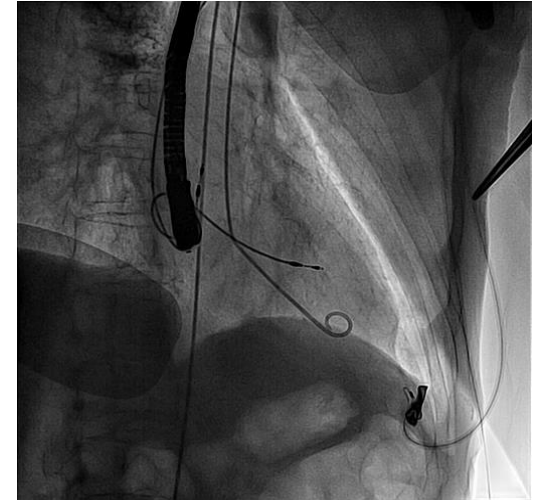


Methods

Prospective single center study.

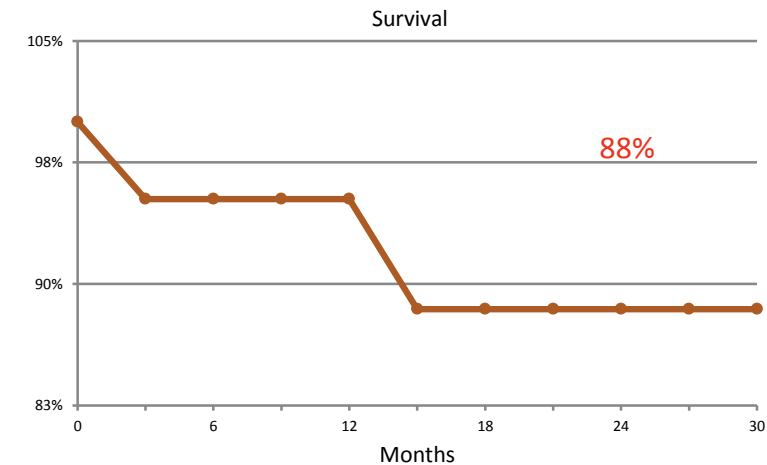
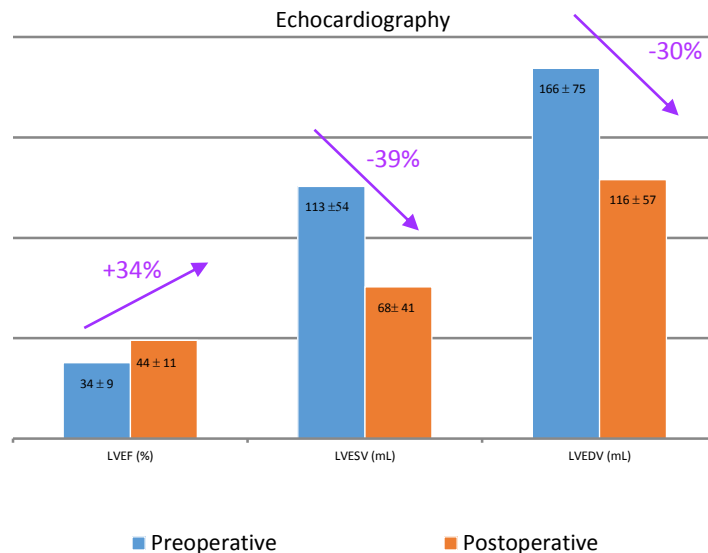
Patients were considered eligible:

- symptomatic heart failure (NYHA-class \geq II)
- ischemic cardiomyopathy (EF < 40%)
- dilated LV with, a - or dyskinetic scar in the anteroseptal wall and/or apex (\geq 50% transmural)



Results

Between October 2016 and January 2020 24 patients (21 males, 3 females; mean age 61 ± 13 years) were operated. Procedural success was 100%. On average 2.3 ± 0.9 anchor-pairs were used to reconstruct the LV.



Conclusions

Hybrid transcatheter and minimally invasive LV reconstruction is a promising novel treatment option for patients with symptomatic heart failure and ischemic cardiomyopathy after anteroseptal myocardial infarction.

Mid-term results demonstrate that the procedure is safe and results in significant improvement in EF, reduction in LV volumes and improvement in heart failure symptoms.