duramycin. All other authors have reported that they have no relationships relevant to the contents of this paper to disclose.
The authors attest they are in compliance with human studies committees and animal welfare regulations of the authors' institutions and Food and Drug Administration guidelines, including patient consent where appropriate. For more information, visit the *JACC: Cardiovascular Imaging* author instructions page.

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APPENDIX For supplemental videos, please see the online version of this paper.

Long-Term LV Characterization Using CMR in Patients With Spontaneous Coronary Artery Dissection

Spontaneous coronary artery dissection (SCAD) is a well-known cause of myocardial infarction (MI) and is associated with spontaneous healing in most patients. Currently, the role of percutaneous coronary intervention (PCI) is controversial, and conservative management is usually recommended (1). Left ventricular ejection fraction (LVEF) during the acute phase of SCAD has been reported to remain within normal limits (2). However, LVEF measurements in patients with SCAD have been mainly obtained by transthoracic echocardiography, with 1 series using cardiac magnetic resonance (CMR) imaging during the acute phase (3). We aimed to perform a long-term detailed characterization of myocardial scar and left ventricular (LV) function using CMR.

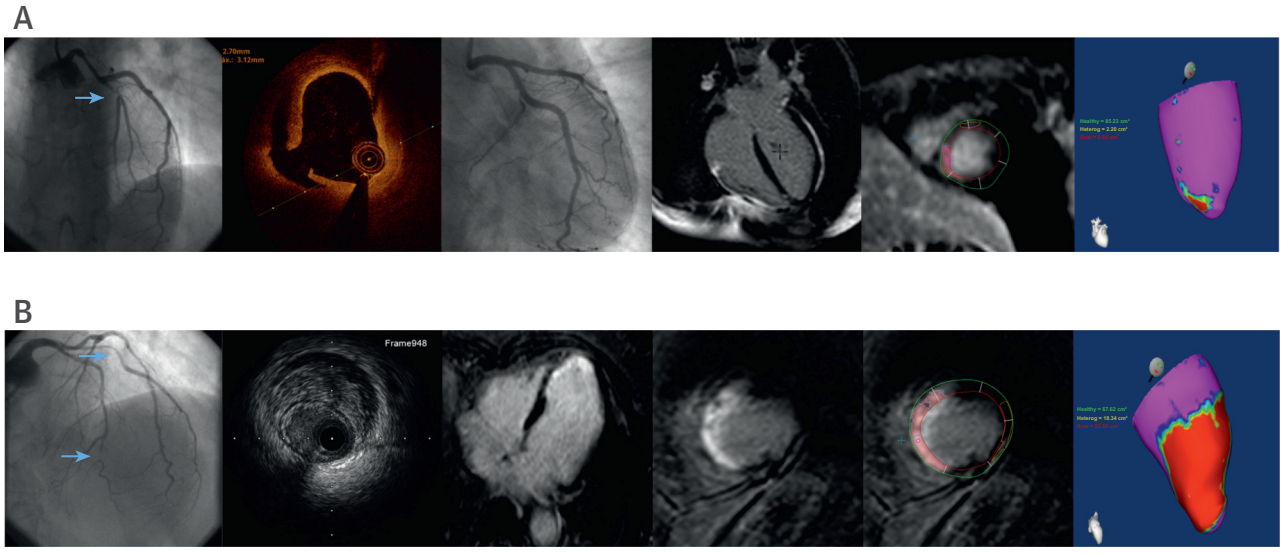
We designed an observational single-center study that consecutively included patients with SCAD. The study complied with the Declaration of Helsinki and was approved by the Ethics Committee of our institution. All patients prospectively underwent contrast-enhanced CMR imaging with a 1.5-T scanner (Achieva, Philips Medical Systems, Amsterdam, the Netherlands) in the chronic phase (>2 months) after the index event. The CMR study consisted of cine steady-state free precession imaging of LV and 3-dimensional late gadolinium enhancement (LGE) imaging. Scar core and heterogeneous tissue mass were quantitatively assessed using Qmass version 7.6 (MEDIS, Leiden, the Netherlands). Three-dimensional reconstructions were computed offline using custom software.

A total of 45 patients were diagnosed with SCAD from January 2005 to June 2017. Of these, 32 were finally included because 13 subjects were ineligible for the CMR protocol. Mean age was 52.5 ± 11.0 years, and 84.4% were women. All patients presented with a MI, 53% of which were non–ST-segment elevation MIs. The most common SCAD profile was type 2 (50%), which affected the left descending artery (44%), with Thrombolysis In Myocardial Infarction flow grade 2 to 3 (72%). Most patients underwent conservative management (63%). No deaths or cardiac arrhythmias were recorded during follow-up.

Mean LVEF during the acute phase was 54.9 ± 8.8% (by ultrasound). After a follow-up of 3.1 ± 2.6 years, LVEF was 57.3 ± 9.7% (by CMR), and 7 patients (22%) showed a LVEF of <50%. Interestingly, 94% of the patients showed positive LGE, 75% of them transmural. Mean infarct size was 13.2 ± 8.9% of LV mass. Infarct size, LV volumes, and LVEF were not significantly different between patients who underwent a conservative or PCI strategy ($p > 0.40$ for all). In addition, subjects who required urgent PCI due to a failed conservative strategy had similar LVEFs (59.8 ± 9.6% vs. 56.7 ± 9.8%; $p = 0.49$), scar mass (11.8 ± 7 g vs. 9.9 ± 8.5 g; $p = 0.63$), and infarct size (17.8 ± 10.5% vs. 12.4%; $p = 0.22$). Importantly, LVEFs were higher (51.8 ± 5.0% vs. 58.5 ± 10.0%; $p = 0.02$) and LV end-diastolic volumes were lower (142.9 ± 35.0 ml vs. 176.7 ± 34.0 ml; $p = 0.04$) in patients who received beta-blockers. In this sense, 34% of the subjects fulfilled criteria for LV dilation. Patients who experienced ≥2 SCAD episodes (13%) had lower LVEFs (46.2 ± 10.0% vs. 58.9 ± 9.0%; $p = 0.01$), larger scar mass (14.2 ± 6.0 g vs. 6.4 ± 7 g; $p = 0.05$) and a numerically but not significant higher infarct size (20.6 ± 4.0% vs. 12.4 ± 9.0%; $p = 0.10$) than those without recurrence (**Figure 1**).

To our knowledge, this is the first report on the long-term CMR findings after SCAD. Myocardial transmural scar was present in most of the patients with SCAD and was maintained over time. Treatment strategies were not related to long-term differences in LVEF or infarct size, but recurrences were. Although we had no major events in our cohort, these data might change the misconception of a good prognosis of this condition because of the well-known association of myocardial scar size and mortality. Beta-blockers should be advocated in all patients with SCAD, not only because they have shown to prevent

FIGURE 1 Different Ventricular Outcomes After SCAD



(A) Minimal scar after a first spontaneous coronary artery dissection (SCAD) event and invasive management. **(B)** Large transmural scar in a patient with a previous SCAD event and current multivessel involvement. **Arrows** depict affected coronary segments.

recurrences (4), but also due to a potential long-term impact on LV scarring and remodeling.

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Stage B Aortic Regurgitation in Bicuspid Aortic Valve

New Observations on Progression Rate and Predictors

The most common complication of patients with bicuspid aortic valve (BAV) is aortic valve surgery (1). Hemodynamically significant (moderate-severe to severe) aortic regurgitation (AR) is more common in younger men with BAV (1) and is classified as Stage C (asymptomatic) or D (symptomatic) (2). However, the