Image in cardiology

Bubble Contrast Echocardiography for Alcohol Septal Ablation

Ecocardiograma de contraste con burbujas en ablación septal con alcohol

Eduardo A. Arias,* Marco Antonio Peña-Duque, and Marco Antonio Martínez-Ríos

Intervención Coronaria y Estructural, Departamento de Cardiología Intervencionista, Instituto Nacional de Cardiología "Ignacio Chávez", Mexico City, Mexico

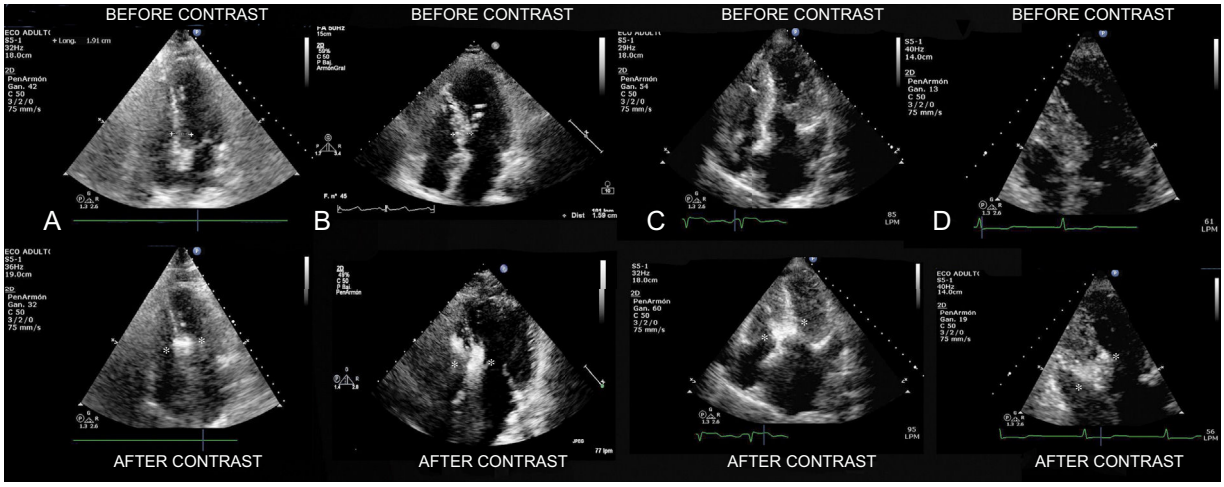

Figure.

The injection of a synthetic cardiovascular ultrasound contrast agent in a coronary septal branch has become a mandatory step of alcohol septal ablation in hypertrophic obstructive cardiomyopathy as it determines the septal branch amenable for ablation and the extent of the infarct. Unfortunately, these contrast agents are expensive and not widely available. At the National Institute of Cardiology, we have replaced these agents with a simple, inexpensive and artisanal technique based on the bubble echocardiogram concept for the diagnosis of patent foramen ovale, which involves the injection of a bubbled contrast-saline-air cocktail (3 mL of intravascular contrast + 2 mL of saline + 1 mL of air, shaken in a 3-way-stopcock) in the occluded septal branch. Four different examples showing images before and after injection are shown in the Figure. This bubbled mixture permits proper identification of the septal branch and characterization of the ablation territory. The degree of opacification is at least equal to that achieved with synthetic contrast agents and we have documented no complications related to its use as there is no backflow of bubbles to the left anterior descending artery and the septal branch bubbles drain to the coronary sinus and ultimately to the pulmonary artery. Video 1 of the supplementary material shows the technique and its results. In sum, the use of this simple, artisanal and affordable contrast technique is a feasible alternative for septal ablation in places where synthetic contrast agents are not available. To our knowledge, there are no previous reports of this contrast technique for alcohol septal ablation.

SUPPLEMENTARY MATERIAL

Supplementary material associated with this article can be found in the online version available at https://doi.org/10.1016/j.rec.2018.04.016.

* Corresponding author:
E-mail address: laloarias@gmail.com (E.A. Arias).
Available online 18 May 2018

https://doi.org/10.1016/j.rec.2018.04.016