Our study performed in daily practice shows that a number of patients in the emergency department with a wide variety of clinical diagnoses have elevated troponin values. In these patients, diagnosis related to troponin elevation is specified in very few discharge reports, which indicates that acceptance of the terms type 2 MI and myocardial injury is lacking. In some cases, clinicians hesitate to assign a diagnosis of type 2 MI and, in contrast, "accept" a diagnosis of myocardial injury. There are several possible reasons for this finding. Physicians may avoid classifying patients as having type 2 MI or myocardial injury because of uncertainty that there is an underlying coronary disease. Or they may wish to avert treatments when there is scientific evidence of type 1 MI, but insufficient evidence to support treatment in the absence of a complicated atherothrombotic plaque. Another possible explanation is a lack of understanding of what actually constitutes type 2 MI. For type 2 MI and myocardial injury to be universally accepted, there should be broad consensus on the criteria to establish these diagnoses. This would enable standardization of research and identification of therapeutic strategies that could modify the prognosis. Perhaps when the evidence reaches this point, clinical acceptance of the terms included in the universal definition of MI will become more widely recognized. This study has the limitations of a single-center design and inclusion of patients with only 1 troponin determination, factors that may have had an impact on assigning some of the diagnoses.

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Catheter Ablation of Peri-Hisian Atrial Tachycardia From the Noncoronary Sinus of Valsalva After Aortic Valve Replacement

Ablación con catéter de taquicardia auricular perihisiana desde el seno de Valsalva no coronario tras reemplazo de válvula aórtica

To the Editor,

A 77-year-old woman with severe rheumatic aortic stenosis and paroxysmal atrial fibrillation was admitted for aortic valve replacement. After the surgery (21-mm Perceval S sutureless aortic bioprosthesis [Sorin Group] and isolation of pulmonary veins with bipolar radiofrequency ablation forceps), the patient was moved to the postoperative surgical intensive care unit. Two days later, she developed repeated runs of atrial tachycardia (AT) (Figure 1A) with hemodynamic compromise. The tachycardia was refractory to treatment with amiodarone and atenolol, so urgent ablation was performed.

A 24-pole catheter (Orbiter, Bard Medical) was positioned around the tricuspid ring with the distal portion in the coronary sinus. The patient was showing spontaneous runs of narrow-complex tachycardia, with 1:1 A:V conduction, alternating with Wenckebach phenomenon with a constant A-A interval and variable V-A interval, allowing confirmation of the diagnosis of AT. The earliest atrial electrogram on the 24-pole catheter was found in the coronary sinus ostium. An electroanatomic map of the right atrium was created (Carto navigation system, ThermoCool irrigated ablation catheter, SmartTouch J curve for mapping; Biosense, Webster) (Figure 2), on which the earliest atrial electrogram site was in the anterior interatrial septum, 8.8 mm posterior to the bundle of His. This distance was considered safe for ablation with radiofrequency (rather than cryoablation). The focal ablation (2 applications; 45 and 65 s, power, 35-40 W) suppressed the tachycardia without affecting the PR interval (after 21 and 25 seconds, respectively), but with recurrence (with the same cycle length) after a few minutes. An extension was performed superior to the ablation (40 s, 35 W), unsuccessfully. Therefore, an electroanatomic map of the aortic root was created, mapping specifically the noncoronary sinus of Valsalva. The presence of the aortic prosthesis did not impede the mapping. The earliest atrial electrogram sites were similar to those found in the right interatrial septum (Figure 1B); the distance between the earliest activation site and the prosthetic aortic valve was considered safe for ablation. Focal ablation (initial application: 45 s, 45-50 W, successful; additional adjacent application of 30 s at 50 W) led to termination of the tachycardia in 17 seconds (Figure 1C), which remained uninducible. The patient was discharged 3 days later, and at 6 months' follow-up she was arrythmia-free with no antiarrhythmic drugs.

ATs that arise from the interatrial septum close to the bundle of His are relatively uncommon.[1,2] The anterior portion of the interatrial septum is in close relation to the posterior part of the aortic root, such that these tachycardias can be ablated from the noncoronary sinus of Valsalva (and, less often, from the other sinuses of Valsalva). In fact, their theoretical origin is an embryological remnant of retroaortic nodule tissue,[3] an extension of the atrioventricular nodule that is situated below the noncoronary sinus. Ablation from the aortic root has higher success rates (88%-100%) and lower recurrence rates (0%-4%)[4–6] than ablation from the right or left interatrial septum, and also avoids the risk of

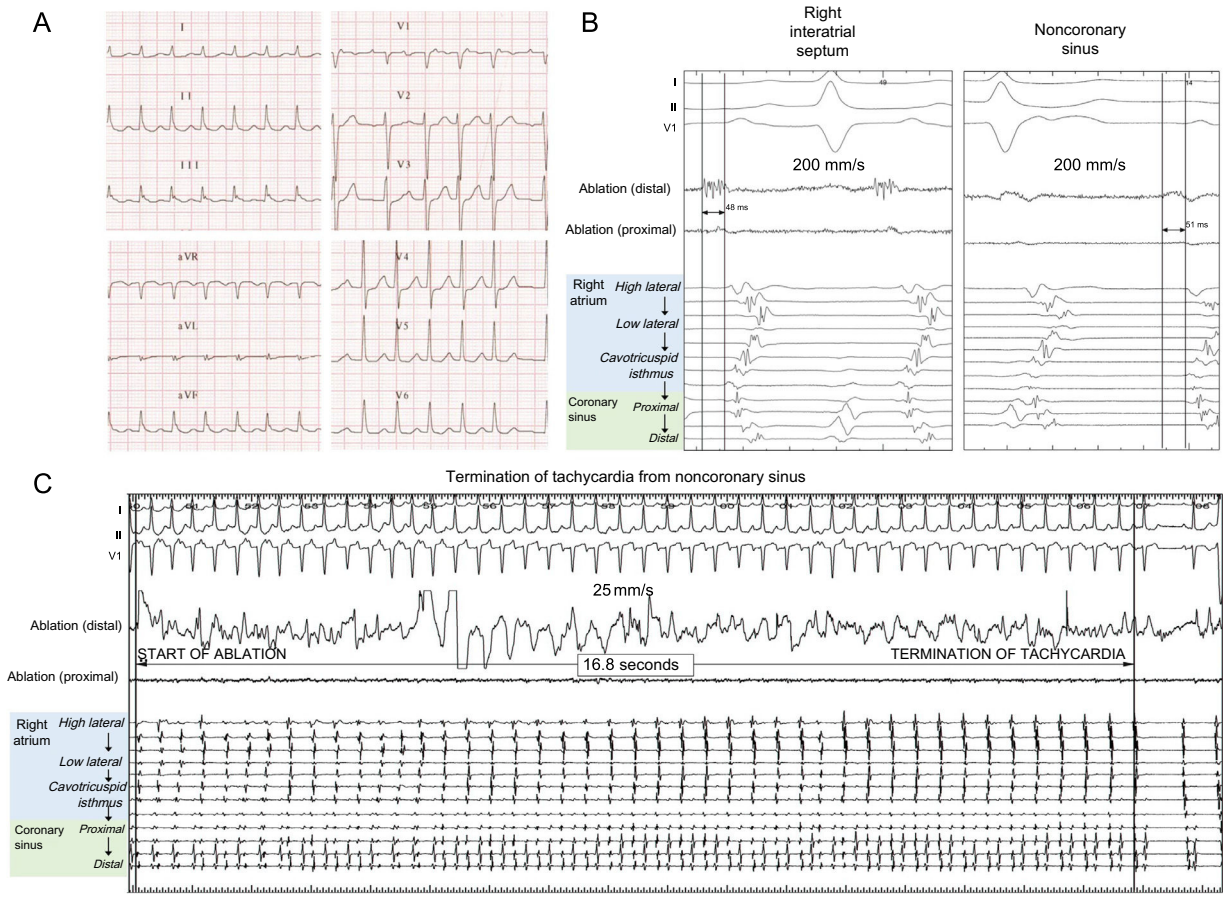

Figure 1. A: electrocardiogram showing atrial tachycardia. B: earliest atrial electrograms in the right atrial septum and the noncoronary sinus. C: termination of the tachycardia with focal ablation from the aortic root.

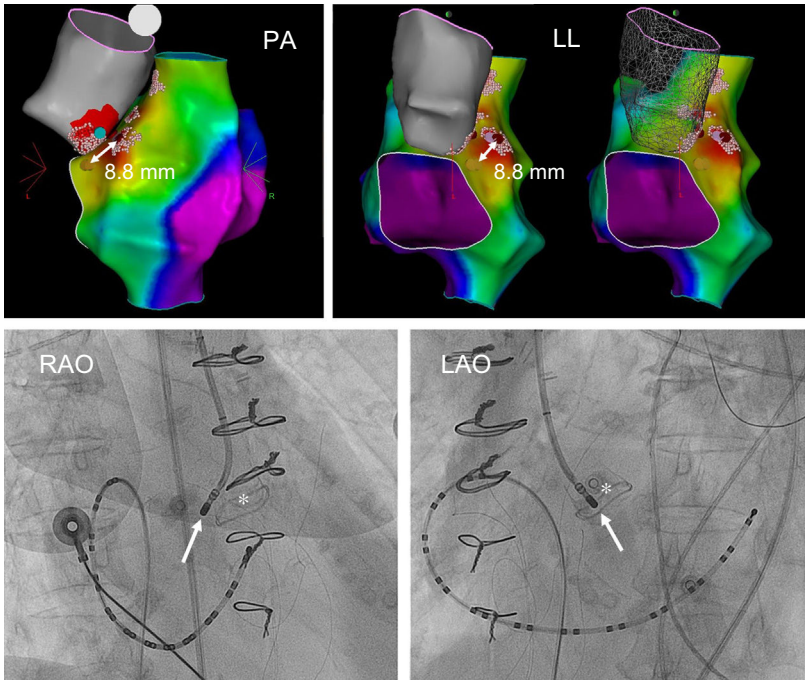

Figure 2. Activation map of the right atrium and the aortic root; the color gradation from red to violet indicates the earliest to latest atrial electrogram sites. Larger red spots: earliest right atrial electrogram; yellow spots: site of the bundle of His; blue circle: effective ablation site from the noncoronary sinus; small red dotted area: ablated tissue. The fluoroscopic image of the effective ablation site in the noncoronary sinus is also shown (arrow), posterior to the bioprosthesis (asterisk). LAO, left anterior oblique projection; LL, left lateral projection; PA, posteroanterior projection; RAO, right anterior oblique projection. This figure is shown in full color only in the electronic version of the article.

atrioventricular block inherent to peri-Hisian ablation via the atria. Therefore, our group systematically maps the aortic root in cases of AT in which the earliest right atrial activation site is posterior or superior to the bundle of His. The originality of the case presented here lies in the recent implantation of an aortic prosthesis as the possible trigger of the AT, which, to the best of our knowledge, has not been previously described in the literature. Because of this, we attempted ablation from the right atrium before mapping the aortic root. We did not map the left interatrial septum, which we could have considered, given the low efficacy that has been reported on ablation from this location (25%-64%)[5,6] and the sufficient distance from the earliest atrial electrogram in the aortic root to the prosthesis, which made the ablation safe (Figure 2).

In our hospital, since 2014, 46 patients have undergone focal AT ablations (Figure of the supplementary material); 11 had AT of peri-Hisian origin and were treated with ablation from the aortic root (all from a noncoronary sinus). These patients had similar acute success rates for ablation (100% vs 91%; $P = .431$) but fewer recurrences of atrial arrhythmias at follow-up (0% vs 26%; $P = .009$) than patients with AT of other origins.

CONFLICTS OF INTEREST

E. Franco and J. Moreno have received consultancy fees from Biosense Webster.

SUPPLEMENTARY MATERIAL

Supplementary material associated with this article can be found in the online version available at https://doi.org/10.1016/j.rec.2018.06.001.

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Functional and Structural Coronary Recovery at the 5-year Follow-up After Bioresorbable Vascular Scaffold Implantation. An Optical Coherence Tomography Analysis

Recuperación estructural y funcional tras 5 años del implante de armazón vascular bioabsorbible. Un análisis con tomografía de coherencia óptica

To the Editor,

The bioresorbable everolimus-eluting vascular scaffold (Absorb-BVS, Abbott-Vascular; California, USA), designed to reduce late complications of bare-metal stents, received the CE mark in 2011 and became available in Europe in 2012. Although the initial results were promising, recent studies have brought into question the safety of the device due to a high incidence of thrombosis and infarction.[1] However, little has been said about the resorption of the device or the structural and functional recovery of the vessel in patients in real-life clinical practice.

We present a single-center prospective cohort study that examined the structure and function of the coronary arteries after Absorb-BVS implantation, using angiography, optical coherence tomography (OCT), and quantitative flow ratio (QFR) in a consecutive series of patients with 5 years of follow-up. The coronary arteries were assessed retrospectively with 3-dimensional reconstruction angiography (QAngio XA-3D research edition 1.0, Medis Special BV; the Netherlands) and OCT images were obtained with Dragonfly catheter at 180 cps and 18 mm/s (C7Fourier-Domain System, LightLab-Imaging, Inc.).

OCT analysis (of the treated segment and 5 mm adjacent) was performed with LightLab software at 1 mm intervals (Abbott; Abbott Park, USA). The markers on the Absorbs-BVS, angiography, and anatomical references were used to locate the treated segment. The morphological aspects studied were: resorption of the device, lumen area, asymmetry index, eccentricity index, residual stenosis area, neointimal thickness, minimum plaque thickness, and side branch ostia.[2] These parameters were also reassessed after the intracoronary administration of 200 μg of glyceryl trinitrate as part of the functional study.

Data were analyzed with the chi-squared test and Fisher exact test (categorical variables) and with the Student *t* test for paired data (continuous variables). The Shapiro-Wilk test confirmed normality. $P \leq .05$ was considered statistically significant and the analyses were performed with IBM-SPSS-23.0.

Eleven Absorb-BVS were analyzed in 9 patients. Mean age was 70 ± 8 years, 89% were male, acute coronary syndrome was reported in 78% of cases, and the most commonly treated artery was the left anterior descending (64%) with a type B2-C lesion (American Heart Association/American College of Cardiology) in 46%. Predilatation was performed in 91% and postdilatation in 55%. Although there were no complications during implantation, 1 patient had restenosis in the distal right coronary artery after 6 months (underexpansion of the 2.5 × 18 mm Absorb-BVS), and was treated, ultimately, with a drug-eluting stent.