(range 9–44) g, and beneath cusp 9.53±6.46 (range 1–34) g respectively during ablation. Average CF and FTI within PSC is always higher than that beneath the PSC (overall P<0.001 and P<0.05, respectively). No significant difference was found between different pulmonary sinus cusps in CF, FTI (P=0.34 and P=0.56 respectively). Multivariate analysis suggested BMI as the significant determinant of CF within PSC (r= -0.484; P<0.001) after controlling for clinical parameters. During endocardial mapping, the bipolar signal amplitude increased with CF in superavalvular area (P<0.001), but was also significantly lower than that beneath PSC (P<0.001).

Table 1. Patients characteristics

	n=48
Age, mean ± SD, y	42.58±20.46
Female, n (%)	26 (51.2)
EF, mean ± SD, %	60.12±6.75
LVEDD, mm	50.12±38.60

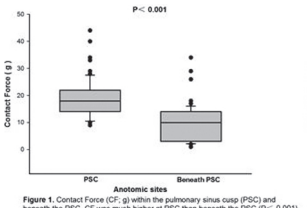

Figure 1. Contact Force (CF; g) within the pulmonary sinus cusp (PSC) and beneath the PSC. CF was much higher at PSC than beneath the PSC (P< 0.001).

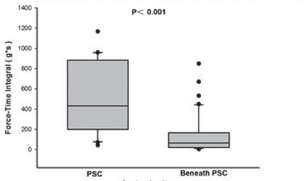

Figure 2. Force-time integral (FTI; g*s) within the pulmonary sinus cusp (PSC) and beneath the PSC. FTI was higher when ablation was performed at PSC (P< 0.001).

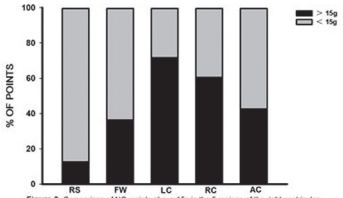

Figure 3. Comparison of NO. points above 15g in the 5 regions of the right ventricular outflowtract (RVOT) and pulmonary sinus cusp (PSC) ; RS indicates right septum; FW, free wall; LC, left cusp; RC, right cusp; AC: anterior cusp (overall P< 0.001).

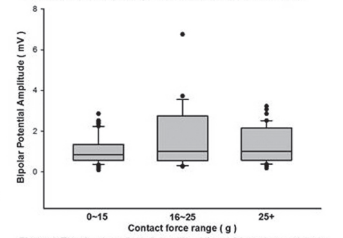

Figure 4. The signal amplitude in healthy regions of the pulmonary artery increased with CF (overall P< 0.001). No further significant increase was observed after 15 g (P=0.002 for modest vs moderate;P= 0.002 for moderate vs strong; P = n.s. for moderate vs strong)

Conclusions: Contact force technology can be effectively and safely performed in treating VPCs originating from PSC. The use of CF may contribute to optimizing the ablation strategy, and potentially result in better clinical outcomes for the catheter ablation.

P795 | BEDSIDE
Automatic delineation of slow conducting channels from electroanatomical maps in patients with scar-related ventricular arrhythmias

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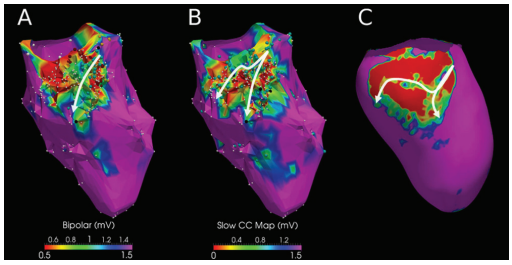
Background: Voltage mapping is useful in identifying the arrhythmogenic substrate in post-myocardial infarction (MI) ventricular arrhythmias (VAs). Slow conducting channels (CCs) are small bundles of viable myocardium embedded within the scar that allow reentry and promote VAs. Slow CCs elimination relies in the manual identification of them and ablation of the slow CC entrances. However, slow CCs identification by voltage mapping and voltage threshold adjustment lacks specificity due to the interference of far field signals of surrounding healthy and even border zone tissue.
Purpose: This work evaluates the benefit of an automatic analysis of the bipolar electrogram (EGM) signal allowing qualitative identification of the presence of delayed components, to delineate the scar and the presence of slow CCs.
Methods: The study data are composed of left ventricle electroanatomical maps from 10 patients undergoing catheter ablation due to post-MI VAs. Voltage mapping was performed during sinus rhythm and identification of the slow CC and slow CC entrance EGMs was manually performed during mapping time. The slow CC entrance locations were targets for ablation following the "scar dechanneling" technique.
These data were retrospectively analyzed using a novel automatic algorithm that identifies the presence of delayed components in the bipolar EGM signal. Evaluation was done by measuring the precision of identifying slow CC entrances (sensitivity, positive predictive value and F1-score) close to where ablation was performed within a maximum distance tolerance of 6 mm.
Results: The automatic algorithm identifies slow CC entrances close to ablation sites with 24.22% sensitivity, 45.76% positive predictive value and an F1-score of 31.67%. This algorithm slightly outperforms the manual identification, which identifies slow CC entrances close to ablation sites with 26.43% sensitivity, 18.63% positive predictive value and an F1-score of 21.86%. Figure shows an example of (A) regular voltage map, (B) the slow CC voltage map performed automatically and (C) late Gadolinium contrast enhanced MRI pixel intensity map used for assessing the presence of slow CCs, marked with arrows in all displayed map modalities.



Example of slow CCs detection

Conclusions: Automatic qualitative analysis of intracardiac EGM signals can improve scar delineation and provides observer-independent identification of slow CCs within the scar tissue.
Acknowledgement/Funding: Funded by: TEC2013-42140-R, DPI2016-75458-R, TIN2011-28067 (MINECO), Grupo T 96 (DGA and FEDER), PI14/00759 (ISCIII and FEDER) and CIBER-BBN (ISCIII)

P796 | BEDSIDE
Relationship between wall thickness and post-infarction VT mechanisms: insights from registered CT imaging and ultra-high density VT mapping using the Rhythmia system

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Introduction: The relationship between wall thickness and VT mechanisms in post-MI VT has not been thoroughly studied.
Methods: We studied 8 post-MI pts (57±15 yrs, 1 women) with available VT maps at ultra-high density using Rhythmia (median 8368 pts/map). Cardiac CT images were processed to derive maps of LV thickness. Anatomical channels were defined as channels of moderate thinning between 2 severely thinned areas. This substrate was registered to VT maps in Matlab software.
Results: Substrate was inferior in 3 pts, anterior in 3, lateral in 2. Total thinning area (i.e. <5mm) was 78±37cm^2, with an overlap with low bipolar voltage (i.e. <1.5mV) of 88.2±9.8%. In sinus rhythm, 365±207 LAVAs were identified, 66.2±14.5%, 18.1±14.4%, and 13.2±8.5% being distributed in moderate thinning, severe thinning, and non-thinned areas, respectively (P<0.05). 21 CT-channels were found (2.6±1.1/pt), with mean length, width, and area of 21.9±8.7mm, 8.7±2.7mm, and 1.65±0.65cm^2, respectively. LV thickness was 3.4±0.6mm on channels center, and 1.9±0.3mm on the borders. A total of 10 VTs were mapped (mean cycle length 434±93ms). 10/10 of all critical isthmuses were observed on a CT-channel, while 10/21 (48%) of all CT-channels hosted a critical isthmus. CT-channels covered 4.9±2.1% of total low voltage area.

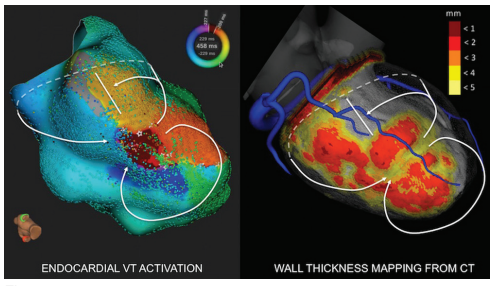

Figure 1

Conclusions: LV thickness by CT provides new insights into post-MI VT mechanism. CT-channels, defined as corridors of moderate thinning between 2 severely thinned areas, are promising targets for catheter ablation.

P797 | BEDSIDE
In which non-ischemic cardiomyopathies can the VCG identify those at risk for sustained ventricular tachycardia?

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Introduction: A higher spatial speaks QRS-T angle (SPQRS-T angle), an angle between the peak of the QRS and T-wave vectors in 3-dimensional space, confers ventricular tachycardia risk in various patient populations including ischemic