neuromediated and orthostatic syncope to cardiogenic origin after follow-up, but in this group there were no cardiovascular deaths. Results show a good concordance between the initial and long-term diagnosis in a syncope unit, suggesting good reliability and safety of it to specify its origin. However, the management is heterogeneous, with different organizational models in each center. New studies are needed to determine which protocols and organizational structure are more effective to establish an accurate diagnosis with the greatest optimization of resources.

P4838
Endocardial diagnosis of clockwise ridge-related atrial tachycardia utilizing ultra-high-density mapping system

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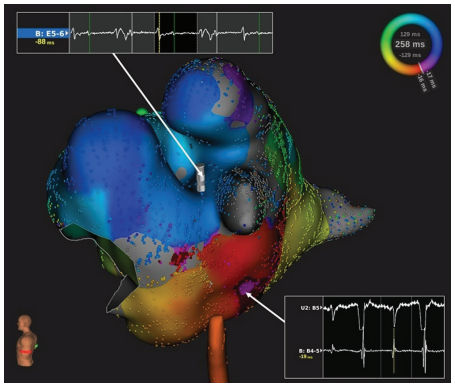
Background: Although the best diagnostic information for atrial ridge-related reentry (RRR) may be provided by a electrophysiological mapping in Marshall's vein, this maneuver is complicated and sometimes even impossible.
Methods: Among consecutive 127 procedures of catheter ablation for atrial tachyarrhythmia (AT) under use of ultra-high-density mapping system (UHDMS), we compared local activation maps of clockwise RRR and classical mitral annular flutter (MAF) based on incomplete lateral block of mitral isthmus.
Results: In total of 11 patients (62.4±11years, 4 females) enrolled, 4 patients was diagnosed as clockwise RRR and 7 was clockwise MAF. In RRR cases, continuous fragmented potential on the left lateral ridge was confirmed by inner-potential-digging technique, which was not evident in the MAF cases. The activation of posterolateral wall of RRR exhibited a focal pattern slightly distant from the mitral isthmus with QS pattern of the local unipolar potential, whereas unidirectional activation was observed in the MAF cases.



A representative case of RRR

Conclusion: Fragmented potential on the ridge and focal pattern of posterolateral wall may help the diagnosis of clockwise RRR in careful use of UHDMS.

P4839
Identification of the best ablation target and its relationship with mid-diastolic activity in re-entrant intra-atrial tachycardia

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Background: Intra-atrial re-entrant tachycardias (IART) may constitute a diagnostic and therapeutic challenge. Previous studies suggested that the ideal ablation site seems to be an area of slow conduction where mid-diastolic electrograms (EGM)s can be recorded.
Purpose: We evaluated the ability of an ultra-high mapping system to identify the most convenient ablation target (RAT) in terms of the narrowest area to transect in order to interrupt the re-entry.
Methods: 24 consecutive patients were enrolled with a total of 26 IARTs (mean EGMs for each map=19.023±11.197, mean mapping time=25±11 minutes). The Rhythmia mapping system was used to identify the RAT all IARTs.
Results: In 18 cases (69%) the RAT matched the mid-diastolic phase of the re-entry whereas in 8 cases (31%) the RAT differed. In these patients, the mid-diastolic tissue in the active circuit never represented the area with the slowest conduction velocity (CV) of the re-entry. While the tachycardia cycle length duration (TCL) and CV at the RAT were comparable between the two groups of patients, the mean CV of the remaining circuit was significantly slower in the group in which the RAT did not match the mid-diastolic phase of the re-entry (p=0.007). In 25 out of 26 IARTs, ablation was successfully performed at the RAT.
Conclusions: Identifying the most convenient ablation target in challenging IARTs by means of high-density representation of the wave-front propagation of the tachycardia seems feasible and effective. In one third of cases this approach identifies an area that differs to the mid-diastolic corridor.

P4840
Superior atrioventricular nodal extensions as potential substrates for atrioventricular nodal reentrant tachycardia with superior slow pathway: anatomical study in human hearts

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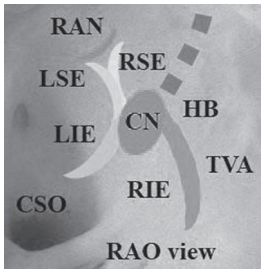
Background: Recent clinical reports depicted the existence of atypical fast-slow atrioventricular nodal reentrant tachycardia (AVNRT) with a superior slow pathway, which appeared adjacent to His bundle potential, and mainly ablated at non-coronary sinus of Valsalva. Even though these spatial characteristics were displayed on recent electroanatomical mapping system, anatomical counterparts have not yet been elucidated.
Purpose: For reviewing anatomical distribution of the nodal tissue on the septal parts of atrioventricular (AV) junction especially around the peak of Koch's triangle, serial tissue sections in this area have been examined.
Methods: Serial sections with 7μm were prepared in from 20 human hearts (8 female, 23 to 89 years of age) without conspicuous arrhythmia related to AV node, and every 10th section was stained with elastica van Gieson and observed under microscope.
Results: Below the lower border of the compact part of AV node, left inferior extension (LIE in figure, 14 cases) and right inferior extension (RIE, 18 cases) appeared on the mitral and tricuspid annuli respectively. In superiorly, most of the volume of the compact AV node (CN) moved into His bundle (HB), however, remnant of nodal tissue adjacent to left inferior extension keep its morphology superiorly, and bifurcated into left superior extension (LSE, 12 cases) and right superior extension (RSE, 14 cases), beneath the non-coronary sinus of Valsalva. Orientation of these extensions is superimposed on right atrial aspect in figure. Of anatomical interest, all right inferior extensions merged into each compact node, and did not migrate into right superior extension directly. As anatomical background, the area beneath the non-coronary sinus of Valsalva consists of right fibrous trigone, which is non-membranous part of central fibrous body between mitral and tricuspid valve annuli (TVA). Upper rim of right fibrous trigone may harbor retroaortic node (RAN) behind the attachment of non-coronary cusp even in human hearts, and may participate in ATP sensitive atrial tachycardia or focal atrial fibrillation originated in this area.



Right atrial view of extensions

Conclusions: As nodal tissue variant in upper Koch's triangle, right or left superior nodal extensions of the AV node appeared beneath the non-coronary sinus of Valsalva, and these tissue heterogeneities may participate in clinical tachyarrhythmia observed in this area.

P4841
To the root of the matter: better long-term success of para-Hisian atrial tachycardias ablated from the aortic root than any other origin of atrial tachycardia

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Background: Focal atrial tachycardias (AT) arising from the interatrial septum near the His bundle (para-Hisian AT) can be successfully ablated from the aortic root.
Purpose: To compare acute and long-term success of ablation of focal AT with para-Hisian origin (systematically ablated from the aortic root) with focal AT from other sites in the atria.
Methods: All consecutive patients with focal AT diagnosis at electrophysiological study and intended to ablate from 2014 to 2018 were included. After focal AT diagnosis was achieved, activation mapping, with or without a navigation system, was used to identify the earliest atrial electrogram (target for ablation). If a para-Hisian origin was identified, aortic root mapping was performed and ablation targeted