NEED OF EPICARDIAL INSTRUMENTATION TO OPTIMIZE THE ABLATION SITE FOR SINUS NODE MODIFICATION

Poster Contributions
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Background: Catheter ablation of inappropriate sinus tachycardia (IST) is a challenging procedure due to the proximity of the sinus node to the phrenic nerve, and the predominant epicardial location of the sinus node structure. We report a consecutive series of patients undergoing ablation of IST and characterized the site of earliest activation and the need for epicardial access to increase procedural success rate or minimize the risk of complications.

Methods: Twenty eight consecutive patients (24 females, with a mean age of 34±8) diagnosed with IST underwent ablation at the enrolling Institutions. In all cases the IST was induced and mapped. Activation mapping using the Carto System was utilized in all patients and the area of earliest activation was tagged and ablated. Before ablation phrenic nerve capture was tested with high output pacing. When deemed necessary epicardial access was obtained with the subxiphoid approach.

Results: The mean heart rate at rest was 120±11 beats per min. Phrenic nerve capture at the site of earliest activation was found in 7 cases (25% of the cases). Radiofrequency energy resulted in endocardial successful ablation in 78% of the cases (12 pts). In the 7 cases where the phrenic nerve was captured around the earliest activation site, epicardial access was obtained and a balloon was inflated to allow endocardial radiofrequency energy delivery by separating the phrenic nerve from the ablation site. In 7 cases (25%) with unsuccessful endocardial ablation, epicardial access was obtained and epicardial ablation was performed with arrhythmia elimination. Overall to target the optimal site, the need for epicardial access was required in 50% of the cases (14 pts). In addition, the RF time to achieve success, was longer in the endocardial cases (21 cases) when compared to the epicardial RF cases (7 cases) (966±364 vs 327±191, p<0.001). No complication was reported.

Conclusion: This study demonstrates that in nearly half of the patients undergoing IST ablation, epicardial access is required to ablate the earliest activation site and achieve sinus node modification.