



Arrhythmias and Clinical EP

LONG-TERM OUTCOMES OF SCAR-RELATED VT ABLATION FOR ICM IN SINUS RHYTHM BY SUBSTRATE MODIFICATION

Poster Contributions

Hall C

Saturday, March 29, 2014, 10:00 a.m.-10:45 a.m.

Session Title: Arrhythmias and Clinical EP: VT
Abstract Category: 7. Arrhythmias and Clinical EP: VT
Presentation Number: 1107-96

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Background: Multiple techniques have been developed for catheter ablation of scar related VT. Methods involving entrainment and activation mapping are limited by hemodynamic stability of VT; others using encompassing pace-mapping are of lesser overall benefit. Scar substrate modification in sinus rhythm (SR) targeting abnormal signals on the ventricular EGM has been our primary technique over the last 8 years. We evaluated long-term efficacy of ablations for scar related VT using abnormal ventricular activity as targets of VT eradication by RFA.

Methods: We retrospectively identified ischemic-related VT cases performed over the last 8 years. All patients experienced at least one documented VT and/or ICD shock for VT. Catheter ablation was guided by voltage mapping for scar in SR in all cases. Scar was defined as an area with EGM voltage less than 1.0 mV. All abnormal ventricular signals within (late and diastolic potentials, fractionated signals) were targeted for ablation. Linear lesions were placed to transect the scar and often the border zone was encircled. Non-inducibility of VT was the endpoint of the procedure. Follow up was analyzed for readmission for VT and/or ICD shock, or documented death from any cause.

Results: Prior to ablation, all 38 patients had multiple episodes of VT (8.5 ± 3) despite antiarrhythmic drug therapy (amiodarone 88%; other 12%). 89% were male; age was 69 ± 11 years; 87% ($n=33$) had an ICD implanted at the time of ablation; LVEF (%) 30 ± 12 . No procedure-related CVA, MI or death within 30 days reported. During a median post-procedural follow-up of 1.9 years the survival rate was 60% (fig.1a). 15 patients (37%) had VT recurrence. Paired t-test (fig.1b) showed a significant difference in VT/ICD shock burden from pre and post VT ablation with a mean difference of 8 (95% CI, 6.8 - 9.3) ($p<0.001$).

Conclusion: Substrate-based VT ablation in SR without induction of VT at baseline or at the end of the procedure appears to be safe and as effective during long-term follow up as other traditional ablation methods when judged by previously published outcome data utilizing such practices. This technique provides a significant decrease in VT episodes and ICD shocks improving QOL.