Introduction

• Ventricular tachyarrhythmias are managed with anti-arrhythmic medications, defibrillators, pacing and catheter ablation.
• An entirely subcutaneous defibrillator (S-ICD) is limited currently by its lack of anti-tachycardia pacing (ATP) capability for monomorphic ventricular tachycardia (MVT).
• Catheter ablation (CA) in S-ICD patients then seems the most logical management option when recurrent or suspected MVT is encountered.
• We evaluated the safety and efficacy of CA in managing patients and the incidence of shocks from an S-ICD due to MVT.

Figure 1: ICD Implant Techniques

Methods

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• An entirely subcutaneous defibrillator (S-ICD) is limited currently by its lack of anti-tachycardia pacing (ATP) capability for monomorphic ventricular tachycardia (MVT). Though its efficacy is proven as beneficial when compared to defibrillators that allow for ATP (1).
• Catheter ablation (CA) in S-ICD patients then seems the most logical management option when recurrent or suspected MVT is encountered.
• We evaluated the safety and efficacy of CA in managing patients and the incidence of shocks from an S-ICD due to MVT.

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Results

Radiofrequency catheter ablation significantly reduces shocks for monomorphic VT in patients with an S-ICD. Preventing or having no shocks has a significant impact on mortality. The overall mortality rate for this small S-ICD cohort is low. Ablation as a shock-preventing management in high-risk defibrillator patients may impact survival but needs more prospective evaluation.

Figure 2: MVT to Ventricular fibrillation shock from S-ICD

Intervention endpoints were shocks, anti-arrhythmic drugs, ablation, S-ICD reprogramming/revision, and replacement with a transvenous ICD. Type of VT, Incidence of shocks, and mortality pre and post ablation was analyzed.

Figure 3: VT ABLATION METHODS

Mapping in VT and sinus rhythm was performed in 10 patients with recurrent MVT. All 10 patients had ablation targeted to the earliest activation when able in either or both ventricles, while mostly targeting the mural scar (Figure 3).

References