

Role of remote magnetic catheter navigation ablation of scar-related ventricular tachycardia in patients with electrical storm

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Introduction: A remote magnetic navigation system (MNS) has been used for ablation of ventricular arrhythmias. However, irrigated tip catheter has not been evaluated in large series of patients. This study intended to evaluate acute and long term efficiency of the newly available irrigated tip magnetic catheter for radiofrequency ablation of scar-related ventricular tachycardia (VT) in patients with ischemic heart disease. **Methods:** Between January 2008 and October 2009 a total of 30 consecutive patients with ischemic heart disease (26 men, age 70.1 ± 8.7 years, left ventricular ejection fraction: $30\% \pm 9\%$) and electrical storm due to monomorphic VT underwent radiofrequency ablation using a remote MNS and a magnetic irrigated tip catheter. **Results:** Acute success was defined as noninducibility of any monomorphic VT during programmed right and left ventricular stimulation, and obtained in 24 (80%) patients. A total of 1 - 6 VT (mean 2.3 ± 1.2 , 394 ± 108 ms, 210 - 660 ms) were inducible during each procedure. The duration of radiofrequency energy application was 41.2 ± 23.3 min, with total procedure and fluoroscopy times of 158 ± 47 and 9.8 ± 5.3 minutes, respectively. No acute complications were observed during the procedures. During mean follow-up of 7.8 months, 22 patients (71%) were in sinus rhythm, have no recurrence of VT, and received no ICD therapy. **Conclusions:** Irrigated ablation of scar-related ventricular tachycardia using remote MNS is an effective modality for management of the monomorphic VT in patients with ischemic cardiomyopathy with minimal radiation exposure.

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Key Take-Aways

- Evaluation of the efficacy of magnetic irrigated tip radiofrequency (RF) ablation catheters for the treatment of scar-related monomorphic ventricular tachycardia (VT) in patients with ischemic heart disease and electrical storm.
- Patient cohort characteristics:
n=30; 26 men; mean age of 70.1 ± 8.7 years; left ejection fraction of $30\% \pm 9\%$
- The following results were observed:
 - acute success: 80%
 - long term success: 71%
 - duration of RF application: 41.2 ± 23.3 minutes
 - procedure time: 158 ± 47 minutes
 - fluoroscopy time: 9.8 ± 5.3 minutes
- No acute complications were observed during the procedures.
- The authors conclude that MNS-guided irrigated ablation is an effective modality for the management of VT with minimal radiation exposure.