

Step Wise Approach for Ablation of Ventricular Fibrillation in Brugada Syndrome : Evidence from Endocardial Mapping

Ahmed Talib¹ Kazutaka Aonuma¹ Makoto Nakano² Tatsuya Hayashi³
Takashi Kaneshiro¹ Koji Fukuda² Shinya Kowase⁴ Kenji Kurosaki⁴
Nobuyuki Sato⁵ Masahiko Takagi⁶ Junichi Nitta³ Mitsuhiro Nishizaki⁷
Yukio Sekiguchi¹ Akihiko Nogami¹

[INTRODUCTION] Despite effectiveness of both, endocardial catheter ablation (CA) of ventricular fibrillation (VF) -triggering premature ventricular contractions (PVCs) and substrate modification of the right ventricular outflow tract (RVOT) epicardium in Brugada syndrome (BrS) , it is unclear which approach should be practiced first and which case responds to which approach. **[OBJECTIVE]** To identify what kind of BrS cases respond to endocardial trigger elimination and who requires more invasive epicardial substrate modification. **[METHODS]** Among 100 BrS patients presented with syncope/VF, CA was performed in 16 patients. Detailed endocardial mapping revealed heterogeneous electrophysiological substrate characteristics, namely ; 56% of the cases did not exhibit endocardial late potentials (LP) or low voltage areas, 25% exhibited non-fractionated LPs and 19%, who experienced more than 20 VF episodes, had fractionated LPs. CA of VF-trigger PVCs followed by additional consolidation radiofrequency applications around the PVC origin and LP sites was performed in the RVOT-free wall in 77% of the cases and in the RV itself in the rest of the cases. VF induction was performed in 7 patients, however ; CA rendered VF

Keywords

- Brugada syndrome
- Catheter ablation
- Endocardial mapping

1 Cardiovascular Division, Faculty of Medicine, University of Tsukuba
(1-1-1 Tennodai, Tsukuba, Ibaraki 305-8577 Japan)

2 Tohoku University Graduate School of Medicine

3 Cardiovascular Division, Saitama Red Cross Hospital

4 Department of Heart Rhythm Management, Yokohama Rosai Hospital

5 Department of Cardiology, Asahikawa Medical University

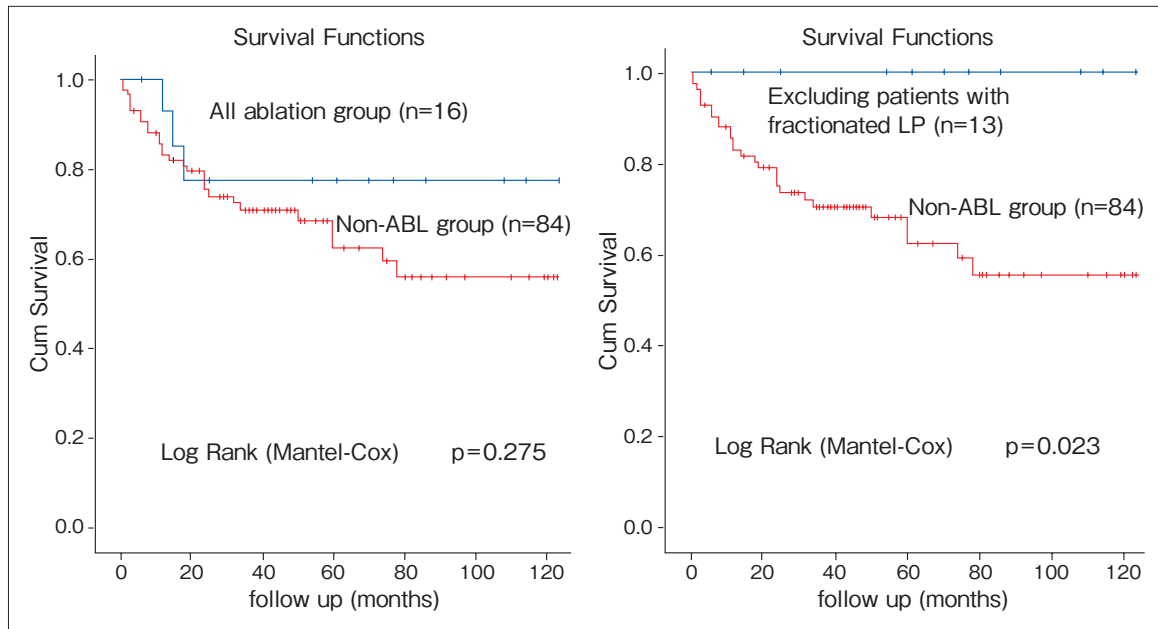
6 Department of Cardiovascular Medicine, Osaka City University Graduate School of Medicine

7 Department of Cardiology, Yokohama Minami Kyosai Hospital

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non-inducible in all of the 7 patients with normalization of Brugada-type ECG in 2 patients. **[RESULTS]** During 54 ± 43 (6-123) months follow up, VF recurrence was observed in all patients with fractionated LPs (**Figure**) despite occurrence of triggering PVCs and normalization of Brugada pattern ECG in 2. Epicardial approach completely prevented VF recurrence in 2 patients and is planned for the third one. **[CONCLUSION]** Trigger elimination followed by substrate modification around the site of origin has excellent long-term outcome while the presence of endocardial fractionated delayed potentials, which observed in patient with the most frequent VF episodes, indicates the inadequacy of endocardial ablation and epicardial approach is necessary.



Figure