



Bundle Branch Reentry Ventricular Tachycardia in Ischemic Cardiomyopathy Patient

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Cite this article as: Demirtaş AO, İçen YK. Bundle branch reentry ventricular tachycardia in ischemic cardiomyopathy patient. JEURMEDS 2021;2(1):30-34.

ABSTRACT

Bundle branch reentry tachycardias are rarely seen. Ischemic heart disease is not generally found in these patients. In the rest of this article a case presented with ischemic cardiomyopathy, whose cardiac cavity was dilated and in whom cardiac resynchronization therapy (CRT) was carried out due to left bundle branch block and ablation was performed by bundle branch reentry ventricular tachycardia (BBRVT) and three-dimensional mapping (CARTO) method.

Keywords: Bundle branch reentry ventricular tachycardia, ischemic cardiomyopathy, ablation

ÖZ

İskemik Kardiyomiyopati Hastasında Bundle Branch Reentri Ventriküler Taşikardi

Bundle branch reentri taşikardileri nadir olarak görülmektedir. Bu hastalarda genel olarak, iskemik kalp hastalığına rastlanmaz. Bu yazının devamında, tüm kalp boşlukları dilate olmuş iskemik kardiyomiyopati ve sol dal bloğu sebebiyle kardiyak resenkronizasyon tedavisi (KRT) uygulanmış, bundle branch reentran ventriküler taşikardi (BBRVT) ve üç boyutlu haritalama (CARTO) yöntemi ile ablasyonu yapılan bir hasta sunulmuştur.

Anahtar Kelimeler: Bundle branch reentri ventriküler taşikardi, iskemik kardiyomiyopati, ablasyon

INTRODUCTION

Bundle branch reentry tachycardias are rarely seen. Ischemic heart disease is not generally found in these patients. This article aimed to present a case with ischemic cardiomyopathy, whose cardiac cavity was dilated and in whom cardiac resynchronization therapy (CRT) was carried out due to left bundle branch block and ablation was performed by bundle branch reentry ventricular tachycardia (BBRVT) and three-dimensional mapping (CARTO) method.

Case

The case involved a 57-year-old patient followed for ischemic dilated cardiomyopathy for 14 years. It was learned that cardiac resynchronization therapy had been carried out on the patient three years prior. The patient frequently applied to the emergency room for tachycardia attacks. The EKG taken in the emergency room detected ventricular tachycardia, and the patient was admitted to the coronary intensive care unit (Figures 1-2). It was determined during pacemaker check that the patient suffered frequent ventricular tachycardia, and emergency ablation was decided on the patient diagnosed with ventricular tachycardia storm. Emergency echocardiographic evaluation showed an ejection fraction of 15-20% and extensively dilated cardiac cavity, and the septum

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Received: 18.02.2021

Accepted: 19.03.2021

Available Online Date: 31.03.2021

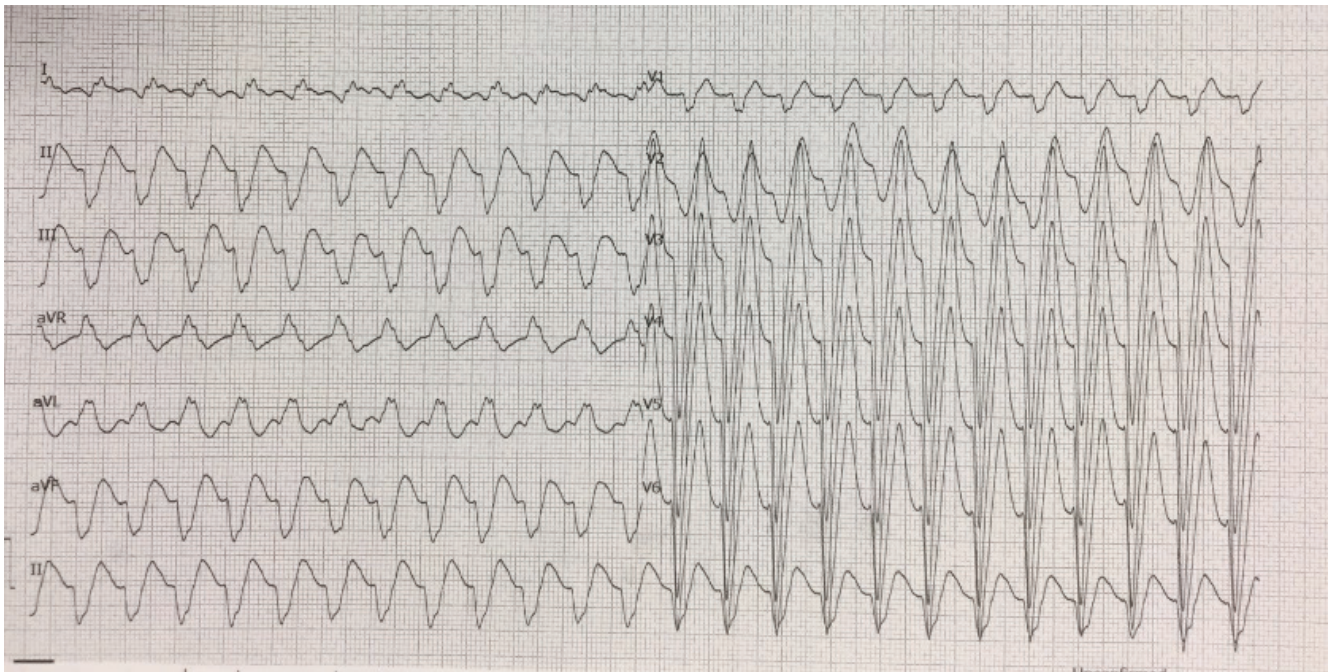


Figure 1. 12 lead ECG in ventricular tachycardia.

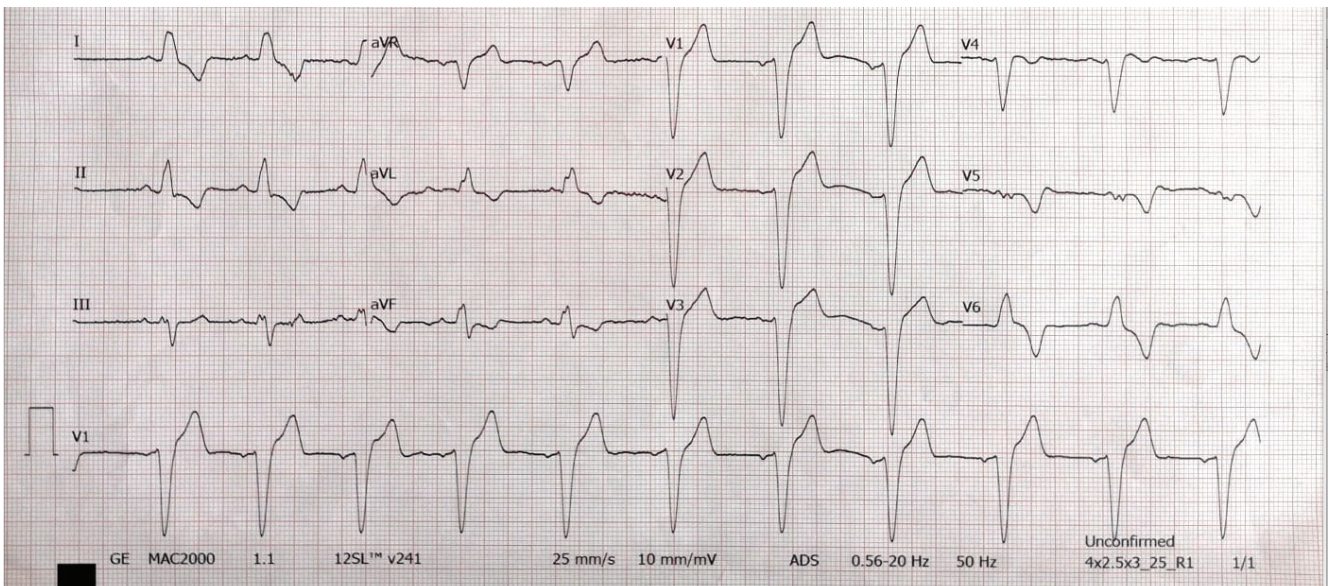


Figure 2. 12 lead ECG in sinus rhythm.

was seen akinetic. Ventricular tachycardia (VT) of the patient taken to the electrophysiology laboratory was mapped by three-dimensional mapping method (CARTO). Early images were received from the right bundle branch region on activation map (Figure 3). Intracardiac images showed right bundle branch potential (Figure 4). Since the patient had already received CRT, right bundle branch ablation was strategically

decided taking the risk of atrioventricular complete block. VT attack was detected to be terminated by radiofrequency ablation carried out in this region with irrigated catheter (Figure 5). No recurrence was observed in the follow-up of the patient who was discharged with medical recommendations after being followed in the ward.

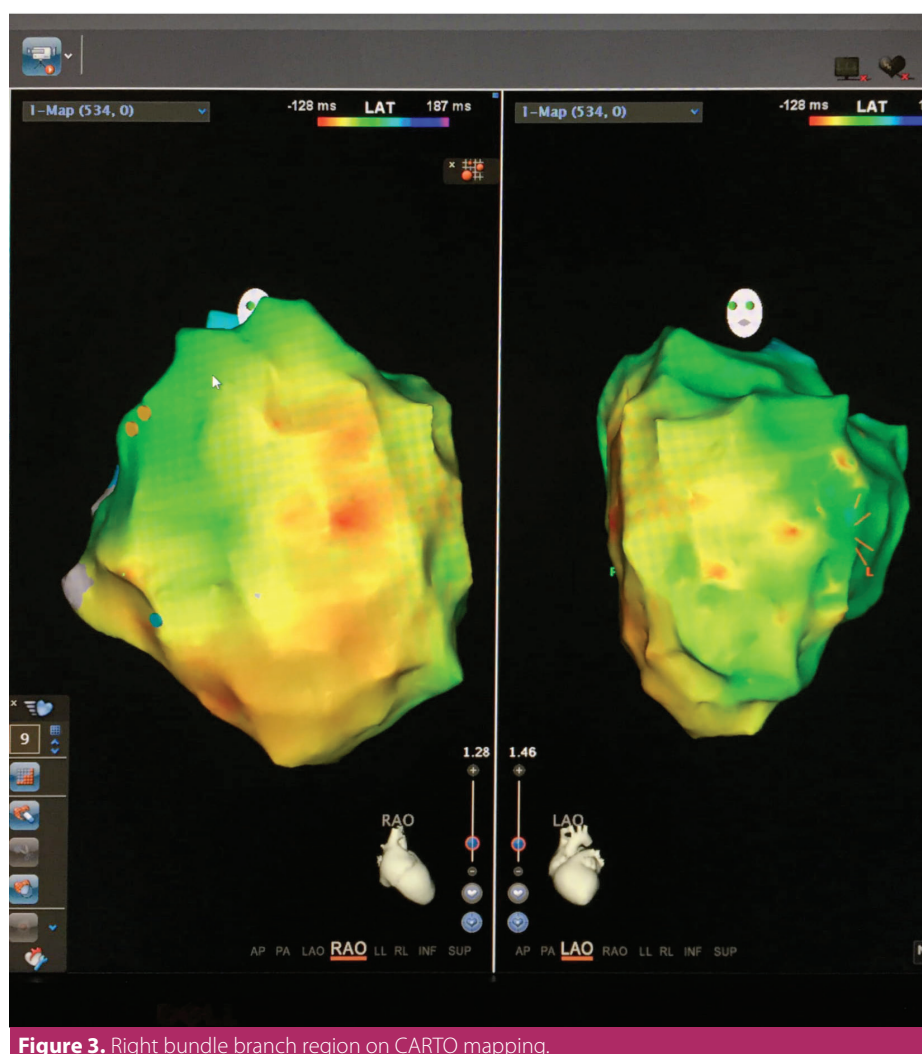


Figure 3. Right bundle branch region on CARTO mapping.

DISCUSSION

BBRVT is rarely seen and generally encountered in patients with nonischemic dilated cardiomyopathy. Our case was a patient followed for ischemic low EF heart failure and in whom CRT was carried out. VT of the patient was mapped by three-dimensional mapping method, and VT was terminated by successful ablation.

BBRVT was identified first by Guerot and colleagues (1) in 1974, and it was indicated that it is a tachycardia that could result in monomorphic sudden cardiac arrest. Mizusawa et al. (2) have particularly referred that patients with BBRVT, especially with right bundle branch morphology could be stimulated by isoproterenol and atrial pacing. In our patient, atrial pacing may have triggered BBRVT since he had CRT. Therefore, if the rate of atrial pacing is high in these patients, then they should be more closely monitored.

Despite rare, it has been reported that BBRVT can be seen in ischemic cardiomyopathy patients when the septum and the conduction system are specifically affected, just as in our patient (3).

Just as in our patient, when BBRVT is detected in patients with left bundle branch block, left bundle branch is chosen as the first ablation strategy to avoid atrioventricular complete block; however, right bundle branch ablation was chosen as the first ablation strategy in our patient since he had already received CRT.

CONCLUSION

BBRVT can be rarely seen in patients with ischemic cardiomyopathy. If the septum is particularly affected on EKG, it should be considered in differential diagnosis in these patients.



Figure 4. Right bundle branch potential in intracardiac electrogram.

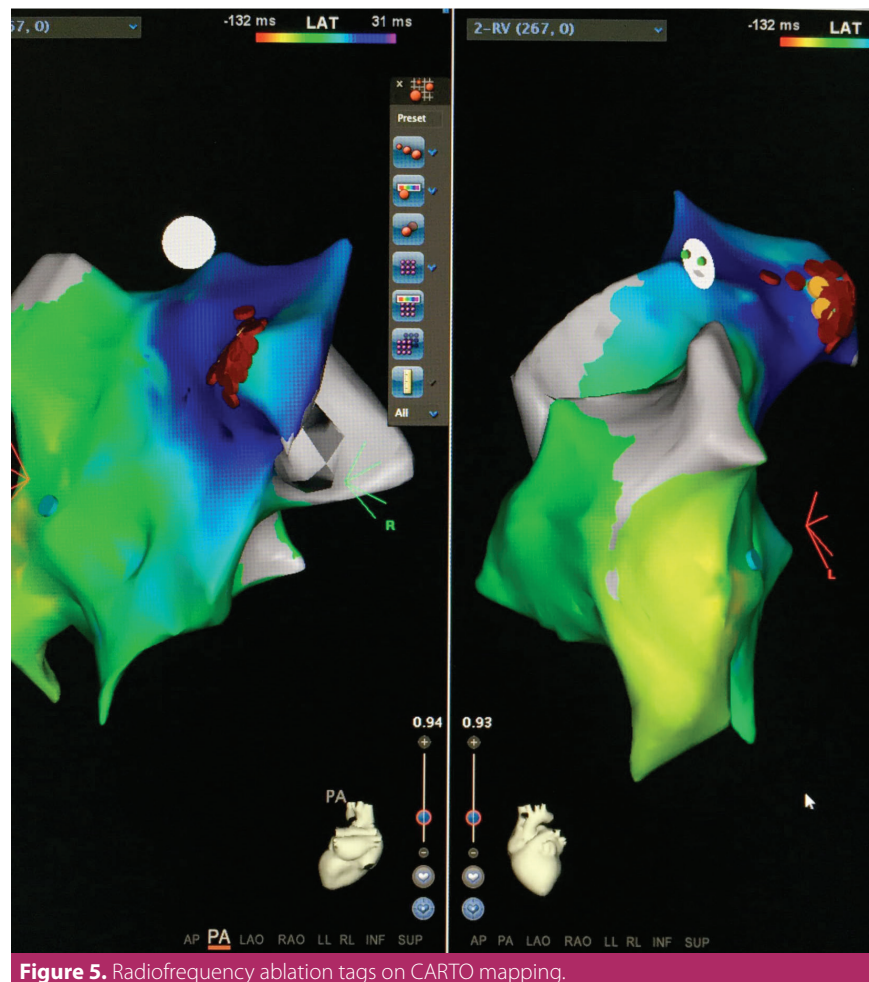


Figure 5. Radiofrequency ablation tags on CARTO mapping.

Author Contributions: Concept/Design: All of authors; Analysis/ Interpretation: All of authors; Data Acquisition: All of authors; Writing: All of authors; Critical Revision: All of authors; Final Approval: All of authors.

Conflict of Interest: There is no conflict of interest.

Financial Disclosure: The authors declared that this study has received no financial support.

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