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## **Determining the underlying aetiology in scar-related right ventricular tachycardia: the role of electroanatomical voltage mapping and electrocardiography**

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# Chapter 5.1

## Precordial R'-wave: electrical disturbance-based or abnormal substrate-based?

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## LETTER TO THE EDITOR

The study by Hoogendoorn et al<sup>1</sup> found that the R'-wave in precordial leads could serve as a novel discriminator between cardiac sarcoidosis (CS) and arrhythmogenic right ventricular cardiomyopathy (ARVC), based on different right ventricular (RV) activation patterns resulting from histologic discrepancy.

Right bundle branch block (RBBB) is not rare, especially in structural heart disease.<sup>2</sup> The reported conduction disturbances in CS and ARVC patients were 38% and 68%, respectively.<sup>3,4</sup> Delayed RV activation in RBBB manifests a postponed R'-wave in lead V1. Hence, both RBBB- and RV-involved cardiomyopathy could generate an R'-wave in lead V1, resulting in interference with each other.

In the article, potentials of the distal right bundle branch (RBB) with 2 cases were provided to exclude RBBB. However, several concerns remained. First, the distal RBB potential still could be recorded in RBBB patients with a retrospectively activated RBB. A full recording of the RBB activation is recommended to exclude RBBB completely. Second, because RBBB was not rare in both CS and ARVC patients, selection bias should be considered if no RBBB patients were found in this cohort, which may limit generalization of the findings. Therefore, from our point of view, a complete recording of His-distal RBB should be studied and discussed to help the readers better interpret the results and the mechanisms.

## REFERENCES

1. Hoogendoorn JC, Venlet J, Out YNJ, et al. The precordial R' wave: a novel discriminator between cardiac sarcoidosis and arrhythmogenic right ventricular cardiomyopathy in patients presenting with ventricular tachycardia. *Heart Rhythm* 2021 May 3;S1547-5271(21):00411–00412.
2. Freedman RA, Alderman EL, Sheffield LT, Saporito M, Fisher LD. Bundle branch block in patients with chronic coronary artery disease: angiographic correlates and prognostic significance. *J Am Coll Cardiol* 1987;10:73–80.
3. Fleming H. Cardiac sarcoidosis. In: James DG, ed. *Sarcoidosis and Other Granulomatous Disorders*. New York: Marcel Dekker; 1994. p. 323–334.
4. Tabib A, Loire R, Chalabreysse L, et al. Circumstances of death and gross and microscopic observations in a series of 200 cases of sudden death associated with arrhythmogenic right ventricular cardiomyopathy and/or dysplasia. *Circulation* 2003;108:3000–3005.