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LETTER TO THE EDITOR

WILEY

To editor

To the Editor:

With interest, we read the article recently published in Annals of Noninvasive Electrocardiology by Song-Yun Chu et al. describing the left bundle branch pacing (LBBP) as a choice to correct the right bundle branch block (RBBB) (Chu et al., 2020). The article very well describes a novel mechanism of cardiac resynchronization therapy for RBBB. As is shown in article, the authors put forward an intriguing theory that unipolar pacing at 0.75V/0.4 ms captured the intra-Hisian LBB then recruited the distal right bundle branch through transverse interconnection fibers (TF). This theory gives us a new understanding of the LBBP in the presence of RBBB.

In context, the authors did not describe how far away the LBB pacing lead location from His. What lead to present the ECG morphology of LBB pacing, if pacing was delivered at the point where His potential is recorded ?

Lazzara et al. 's study just explored the functional transverse interconnections (Lazzara et al., 1973), so the TF between the left and right bundle branches do not seem quite accurate. Beyond that, the anatomical structure of these fibers has not been clearly reported before, which requires further studies, especially in the human body.

However, we cannot conclude that it is TF transmitting an electrical signal from the left bundle branch to the right bundle branch. In unipolar pacing, increasing output might lead to the anodal capture. In bipolar pacing, the anodal ring might pre-excite a portion of the right ventricular septum. When right ventricular anodal capture occurs, QRS duration is minimized, presumably because in this situation there are at least 2 depolarization waves fronts activating the ventricles, shortening conduction time from the left ventricle to the right ventricle (Mounsey & Knisley, 2009). To sum up, both of these pacing methods will cause a fusion of right ventricular septal excitation and left ventricular excitation. This is why the iso-electrical interval fainted, the R wave disappeared in V1 and the QRS complex duration minimized (Figure 1b).

In addition, different to the authors' view that the typical LBBP would create RBBB morphology and might not be narrower than the intrinsic ones. We did observe narrower QRS complex in some patients with RBBB after implantation of selective LBBP (Figure 1a).

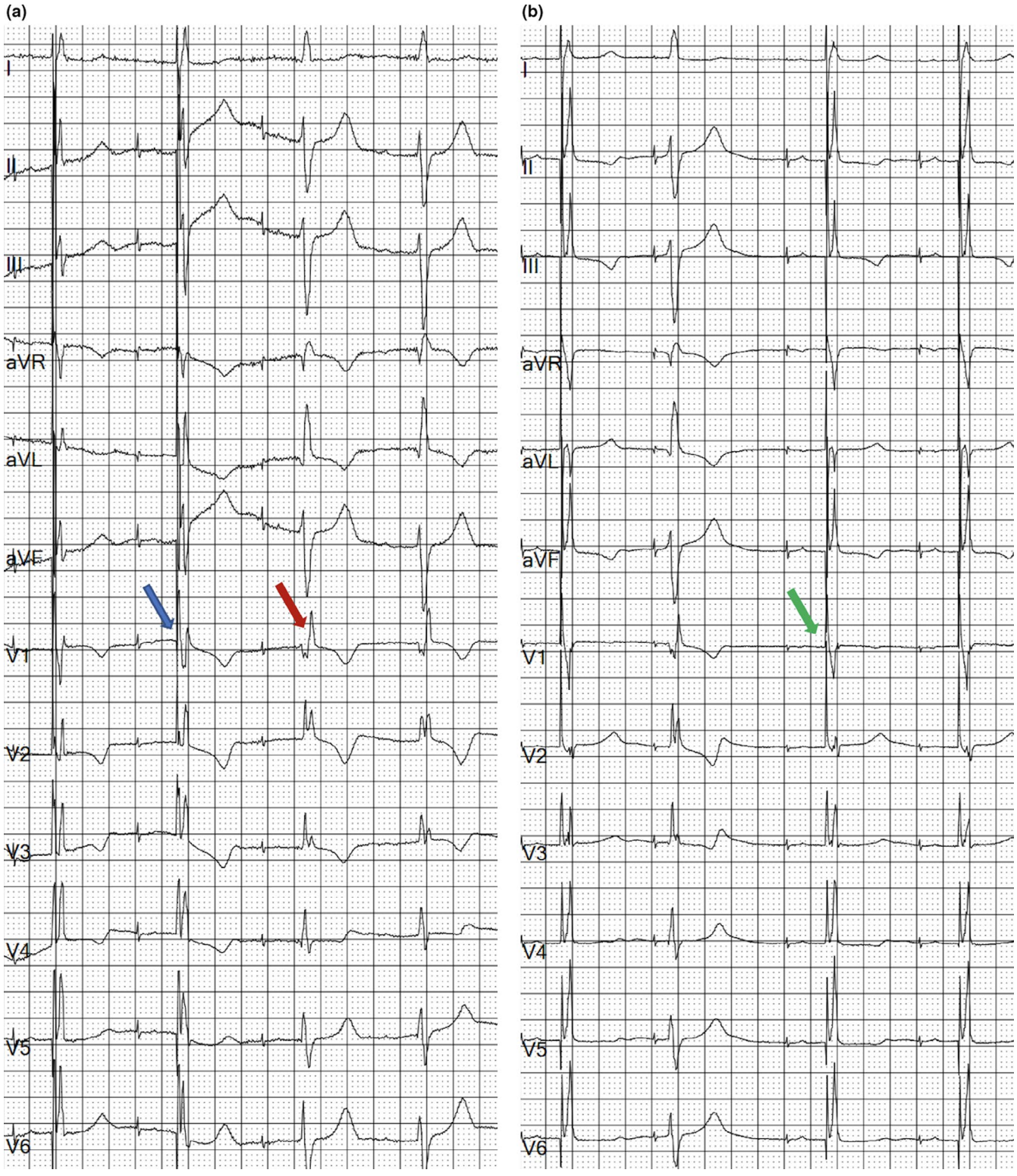

FIGURE 1 Electrocardiogram (ECG) of a patient with RBBB after LBBP. (a) Intrinsic RBBB pattern with a QRS width of 143 ms showed in 12-lead ECG (red arrow). Selective LBBP with the qR pattern in V1 (blue arrow) but significantly narrower QRS of 94 ms. (b) The disappearance of R wave (green arrow) may be caused by the fusion of right ventricular septal excitation and left ventricular excitation

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CONFLICTS OF INTEREST

No conflict of interest exists in the submission of this article.

ETHICAL APPROVAL

The study was approved by the Ethics Committee of Xiamen Cardiovascular Hospital, Xiamen University. The informed consent of each patient was obtained. The study was conducted in accordance with the principles of the Declaration of Helsinki.

AUTHOR CONTRIBUTION

Kailun Zhu: Conceptualization, Writing – original draft, Writing – review & editing. Qiang Li: Supervision, Writing – review & editing.

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