CASE REPORT

Unusual Conduction Disorder: Left Posterior Fascicular Block + Left Septal Fascicular Block

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A 44-year-old man with aortic valve insufficiency and stenosis underwent aortic valve replacement depicting interesting ECG changes. This unique case is discussed, contributing to the understanding of a trifascicular left intraventricular conduction system.

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left posterior fascicular block; left septal fascicular block

CASE PRESENTATION AND DISCUSSION

A 44-year-old man with aortic valve insufficiency and stenosis underwent aortic valve replacement. Echocardiogram showed left ventricular hypertrophy and structural normal right ventricle.

A preoperative electrocardiogram (ECG) (Fig. 1A) showed in the limb leads right axis deviation (QRS axis in $+115^\circ$), rS pattern in leads I and aVL, tall R waves in lead III $>$ II, and qR pattern (embryonic q) in lead III. This ECG pattern in the limb leads, in the absence of clinical and echocardiographic evidence of right ventricular hypertrophy or enlargement (RVH/RVE), lateral infarction and/or "habitus longilineus" associated with significant left ventricular enlargement; suggests left posterior fascicular block (LPFB). In the chest leads, prominent anterior forces

in leads V_1 and V_2 (R wave in $V_2 > 15$ mm) can be seen. In the absence of RVH/RVE, latero-basal myocardial infarction, right bundle branch block, type A Wolff-Parkinson-White pattern, obstructive and nonobstructive forms of hypertrophic cardiomyopathy, endomyocardial fibrosis, muscular dystrophy, and dextroposition; it strongly suggests left septal fascicular block (LSFB).^{1,2}

The combination of LPFB + LSFB has not been properly documented yet and this is the first report that confirms this association.³

The postoperative ECG (Fig. 1B) showed complete left bundle branch block (LBBB), suggesting the possibility of left anterior fascicle damage during surgery leading to LBBB. Despite this is purely speculative, it supports the idea of a progressive LBBB by subsequent damage of its three fascicles.

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Figure 1. (A) Preoperative ECG. (B) Postoperative ECG. See text for details.

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