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IMAGE FOCUS



Infra-Hisian block in a patient with syncope and normal resting ECG

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We report the electrophysiology findings of a 50-year-old man who was referred for evaluation after two abrupt syncopal episodes occurring at rest, one of which happened while driving and resulted in a motor vehicle accident. He was not taking any bradycardia-inducing medications.

Resting electrocardiogram showed normal sinus rhythm without conduction abnormalities. Transthoracic echocardiography revealed no structural heart disease.

Given the traumatic nature of the syncope, an electrophysiological study was performed. Baseline HV

interval was 49 msec (Figure 1). During anterograde nodal Wenckebach point testing, the HV interval prolonged to 69 msec (Figure 2). Programmed stimulation to assess AV nodal refractory period induced a marked HV prolongation up to 122 msec (Figure 3), followed by infra-Hisian block (Figure 4).

These findings established the diagnosis of significant infra-Hisian conduction disease and led to the indication for permanent pacemaker implantation.

This case is noteworthy because current guidelines [1] emphasise that EPS is generally not useful

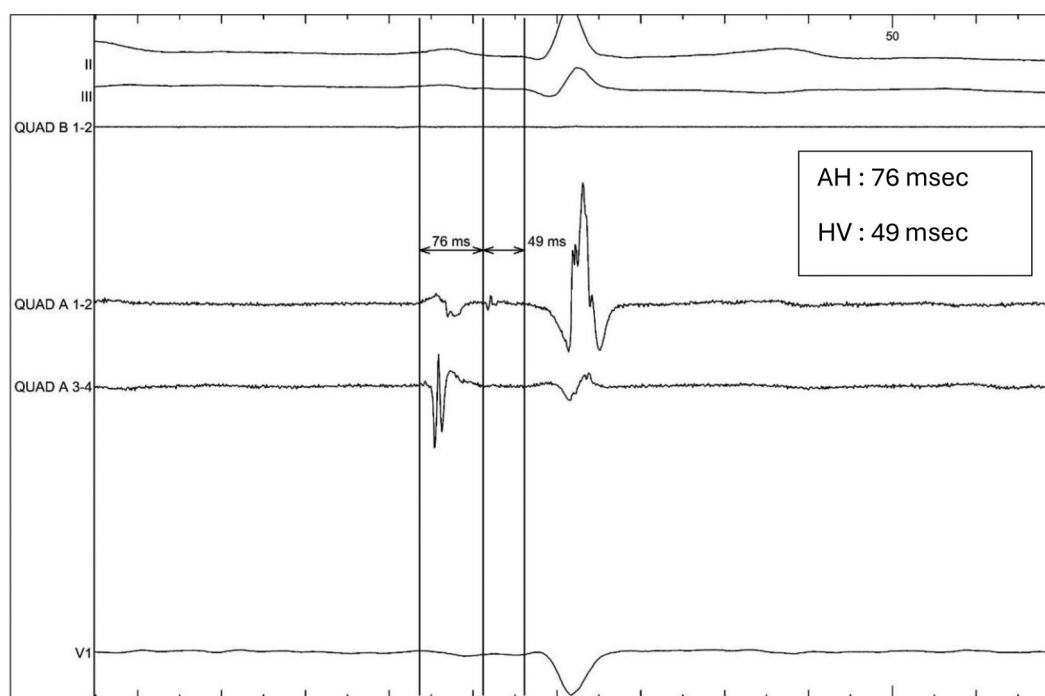


Figure 1. Baseline AH and HV intervals.

AH: atrio-His interval; HV: His-ventricular interval; QUAD: quadripolar lead.

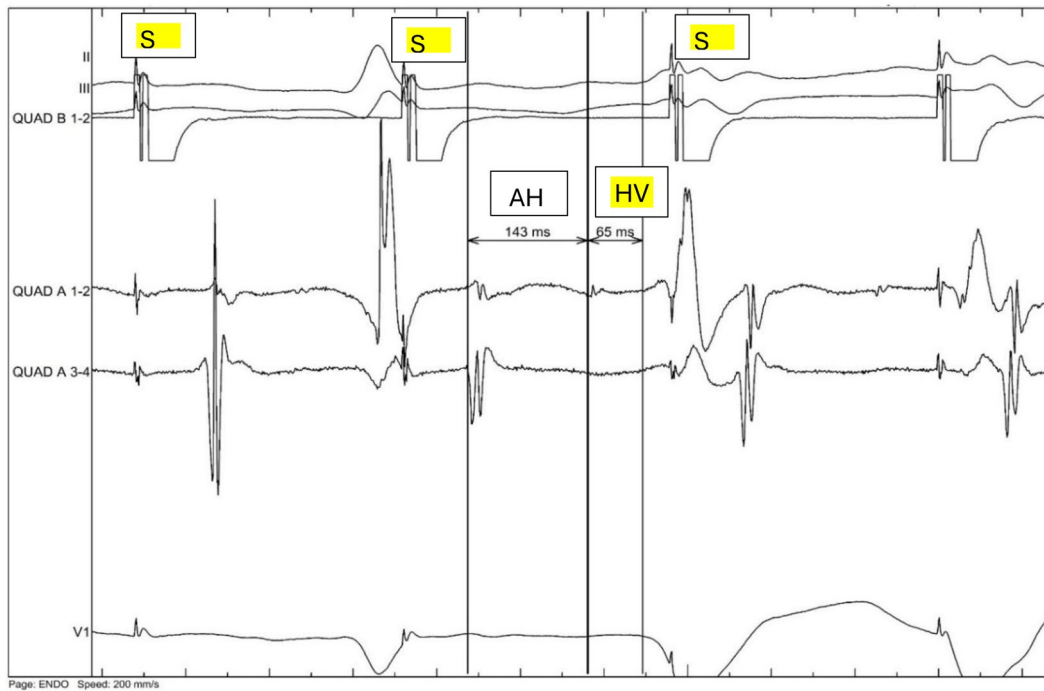


Figure 2. Prolongation of HV interval during anterograde Wenckebach point testing. AH: atrio-His interval; HV: His-ventricular interval; QUAD: quadripolar lead; S: stimulation.

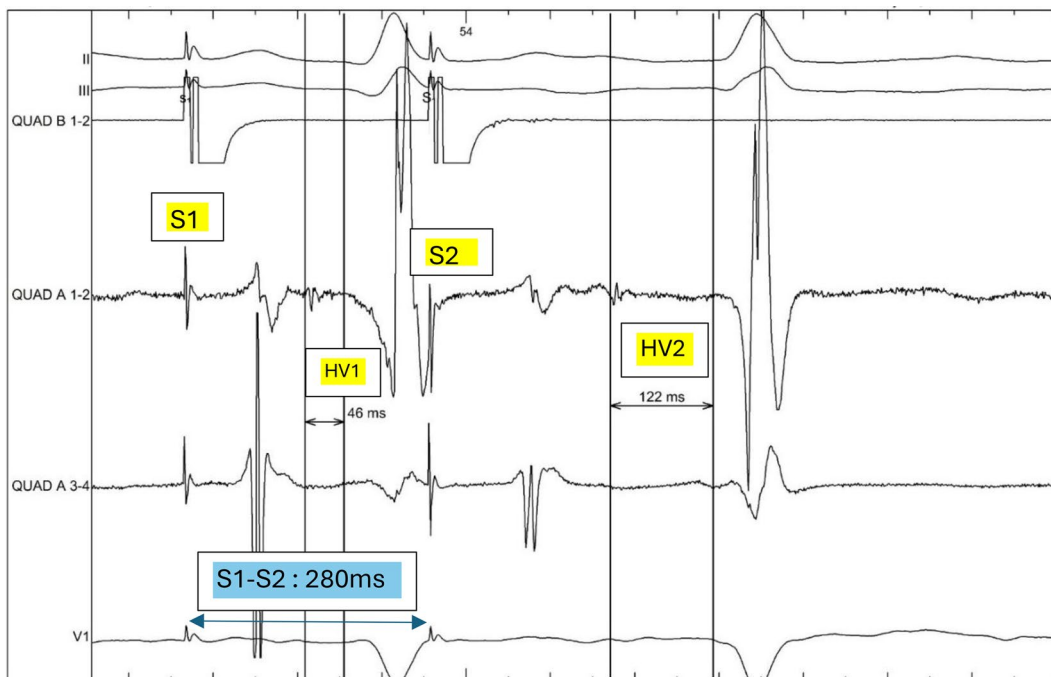


Figure 3. Severe prolongation of HV interval during AVNRP testing. HV1: His-ventricular interval 1; HV2: His-ventricular interval 2; QUAD: quadripolar lead S1: stimulation 1; S2: stimulation 2.

in patients with syncope, normal ECG, no heart disease and no palpitations. Consequently, this diagnosis could easily have been missed. The remarkably

low pre-test probability of detecting infra-Hisian block in such a clinical context underscores the importance of individualised assessment, particularly

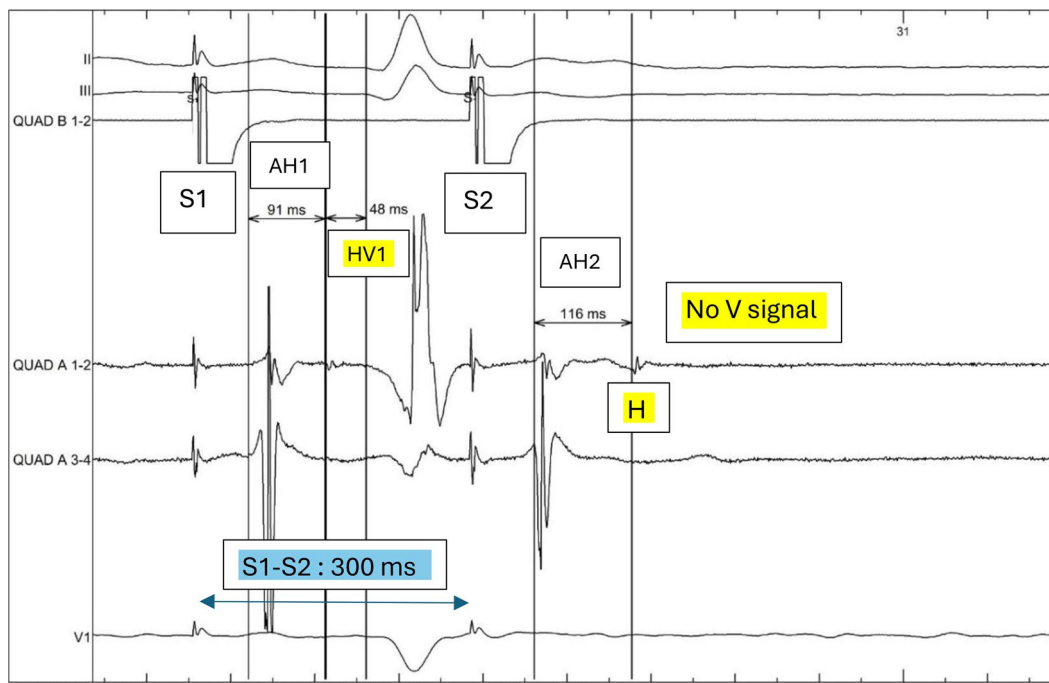


Figure 4. Infra-Hisian block during AVNRP testing.

AH1: atrio-His interval 1; AH2: atrio-His interval 2; H: Hisian signal; HV1: His-ventricular interval 1; HV2: His-ventricular interval 2; QUAD: quadripolar lead S1: stimulation 1; S2: stimulation 2.

in patients with recurrent, unexplained, and potentially life-threatening syncope.

Disclosure statement

No potential conflict of interest was reported by the authors.

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Reference

- [1] Brignole M, Moya A, de Lange FJ, et al. 2018 ESC Guidelines for the diagnosis and management of syncope. *Eur Heart J*. 2018;39(21):1883–1948. doi: [10.1093/eurheartj/ehy037](https://doi.org/10.1093/eurheartj/ehy037).