CASE REPORT

A rare case of orthostatic complete atrioventricular block

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SUMMARY

We describe a rare case of syncope caused by complete atrioventricular (AV) block on upright posture. The index case is a 72-year-old man who presented with recurrent syncopal episodes without a significant postural drop on presentation. During his admission we demonstrated reproducible AV block on standing for 15 s.

BACKGROUND

Syncope is a common presentation in the elderly. Syncope with postural atrioventricular (AV) block is exceedingly rare. This case illustrates a rare cause for a common presentation.

CASE PRESENTATION

A 72-year-old man was admitted for investigation after three consecutive episodes of syncope. The episodes occurred in quick succession, as he stood

up, following recovery from the preceding syncope. He reported a brief presyncopal-warning period.

His medical history included recurrent presyncopal episodes for many years. Previous ambulatory cardiac monitoring had not revealed a cardiac arrhythmia. His medication included amlodipine as treatment for hypertension. He is the primary carer for his spouse and had no limitations to daily activities.

Clinical examination revealed normal cardiovascular findings with a resting blood pressure (BP) of 170/80 and a standing BP of 160/100 mm Hg. Resting 12-lead ECG is shown in [figure 1](#). Two-dimensional echocardiogram revealed mild concentric left ventricular hypertrophy with normal systolic function.

Following overnight cardiac monitoring the patient was mobilised. On standing up the patient suffered a syncopal episode. Cardiac monitoring revealed complete AV block during symptoms. The

Figure 1 Resting 12-lead ECG.

Figure 2 Atrioventricular block on standing and recovery on supine posture.

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phenomenon was confirmed for a second time with similar complete AV block after 15 s of upright posture. There was no sinus node slowing that characterises vasovagal syncope (figure 2). He remained hypertensive in between the observed episodes of AV block. A dual chamber permanent pace maker was implanted.

OUTCOME AND FOLLOW-UP

The patient remained symptom free after implantation of the permanent pacemaker.

DISCUSSION

Varying degrees of AV block have been described in 5% of cases with a positive tilt-table test.¹ Typically AV block occurs towards the end of the test or on recovery after symptoms and is commonly preceded by sinus node slowing. Postural AV dissociation has been reported previously.^{2 3} However, the resting ECG in the report by Reig *et al* showed conduction abnormalities with bundle-branch block.

AV block during tilt-table testing is a rare finding. We believe that profound AV block following a brief period of upright posture as described in our case report is exceedingly rare. Though activation of neurocardiogenic reflexes cannot be excluded, exact mechanisms involved in this phenomenon are not apparent.

Learning points

- Rarely, high-degree atrioventricular block can occur with upright posture.
- Supine 12-lead ECG may be normal and may not reveal conduction abnormalities.
- Physiological mechanisms underlying neurocardiogenic syncope are poorly understood.

Contributors PG and JES were the treating doctors for the index case discussed. They made a significant contribution to the above paper with regard to its concept, research and manuscript preparation.

Competing interests None.

Patient consent Obtained.

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