

Recovery of High Degree Atrioventricular Block in a Patient with Cardiac Sarcoidosis by Corticosteroid Therapy

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A 57-year-old female without any history of medication was presented with dyspnea which started 2 weeks ago. 7 months before, computed tomography (CT) and endobronchial ultrasonography-guided biopsy revealed mediastinal sarcoidosis. Since she was asymptomatic and no major organ was involved in the sarcoidosis, no treatment was given at that time.

At this time, electrocardiography revealed a 2:1 atrioventricular (AV) block (Fig. 1A). Laboratory findings including serum angiotensin converting enzyme titer and echocardiography showed no significant abnormalities. However, before considering pacemaker insertion, cardiac magnetic resonance imaging (MRI) and positron emission tomography (PET) were checked since cardiac sarcoidosis was suspected due to the presence of extra-cardiac sarcoi-

dosis and a high degree of AV block.¹

MRI revealed late gadolinium enhancement of the mid layer of the basal-mid interventricular septum (IVS) (Fig. 1B) with a perfusion defect. A ¹⁸F-fluorodeoxyglucose PET-CT revealed hypermetabolism of the corresponding area (Fig. 1C), leading to the diagnosis of cardiac sarcoidosis.¹ Since she was relatively tolerant of the dyspnea, the conduction block was not aggravated by exercise, and the reversibility of disease was suspected by hypermetabolism in PET-CT, medical treatment with corticosteroid (started with 30 mg/day) was given without a pacemaker. Recovery of the AV block was verified by Holter monitoring, 1 month after initiation of corticosteroid therapy (Fig. 1D). Also, hypermetabolism of the involved myocardium disappeared in PET-CT, after 4 months (Fig. 1E).

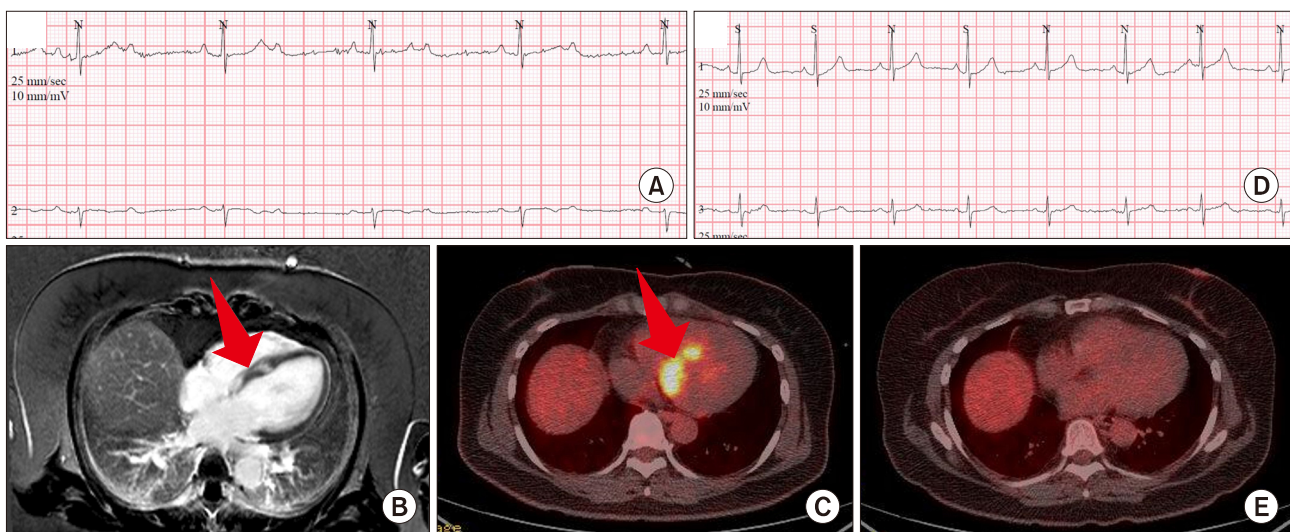


FIG. 1. Changes in electrocardiography (ECG) and imaging studies. (A) Baseline ECG demonstrated 2:1 atrioventricular (AV) block. (B) Baseline cardiac magnetic resonance imaging showed late gadolinium enhancement of the interventricular septum (IVS) (red arrow). (C) ¹⁸F-fluorodeoxyglucose positron emission tomography-computed tomography (PET-CT) revealed hypermetabolism of the IVS (red arrow). (D) AV block was recovered after 1 month of corticosteroid therapy. (E) Hypermetabolism of the IVS was relieved after corticosteroid therapy.

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This case shows a few things. First, cardiac sarcoidosis should be considered as an underlying etiology in patients with otherwise unexplained AV blocks. Importantly, just as in this case, physicians should keep in mind that normal baseline echocardiographic findings do not always rule out sarcoidosis. Second, in selected cardiac sarcoidosis patients, an AV block can be successfully treated by corticosteroid therapy. Thus far, predictive factors of recovery of AV block in cardiac sarcoidosis are not well defined. Some authors have demonstrated preserved left ventricular ejection fraction, and active inflammation without fibrosis of the IVS as the factors.^{2,3} In our case, the AV block recovered from rapidly with corticosteroid therapy, although MRI suggested some fibrosis of the IVS by late gadolinium enhancement. Therefore, more active surveillance of cardiac sarcoidosis in unexplained AV blocks should be conducted, and predictive factors of recovery from AV block need more clarification.

The study was approved by the Institutional Review Board (IRB) at the Chonnam National University Hospital

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CONFLICT OF INTEREST STATEMENT

None declared.

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