

Complete heart block presenting with de Musset's sign

A 71-year-old woman presented with shortness of breath and involuntary head shaking. Physical examination showed nodding of the head with each heart beat (Video 1). Her pulse rate and blood pressure were 40 bpm and 125/55 mm Hg, respectively. ECG revealed complete atrioventricular block with a ventricular rate of 40 and atrial rate of 75 (Fig. 1a). Trans-thoracic echocardiography displayed moderate aortic regurgitation (AR) and diastolic and systolic mitral regurgitation (MR) (Video 2). Long ventricular diastole caused an increase in the severity of AR, which was perceived to be moderate initially. Increased LVEDP due to relatively acute and severe AR causes early and severe systolic MR (Fig. 1b). Diastolic MR occurred when P waves came in early or mid-diastole but not in systole (Fig. 1c–e). Symptoms relieved after DDDR pacemaker implantation (Video 3). Diastolic and severe systolic MR disappeared (Fig. 1f, Video 4). Moderate AR was aggravated by long diastole in addition to diastolic MR, which increased the diastolic aortoventricular gradient. de Musset's

sign is nodding of head due to increased pulse pressure in severe aortic regurgitation.

Video 1. Shaking of the head in synchrony with heart beat.

Video 2. Color Doppler echocardiography showing moderate aortic regurgitation, severe systolic mitral regurgitation and intermittent diastolic mitral regurgitation.

Video 3. de Musset's sign disappeared after pacemaker implantation.

Video 4. Color Doppler echocardiography displayed mild mitral and aortic regurgitation after pacemaker implantation.

Semi Öztürk, Gündüz Durmuş, Muhsin Kalyoncuoğlu, Mustafa Sarı, Mehmet Can
 Department of Cardiology, Haseki Training and Research Hospital; İstanbul-Turkey

Address for Correspondence: Dr. Semi Öztürk

Haseki Eğitim ve Araştırma Hastanesi
 Kardiyoloji Kliniği, Aksaray/Fatih, 34096, İstanbul-Türkiye
 Phone +90 212 529 4400 Fax: +90 212 589 6229

E-mail: semi_ozturk@yahoo.com

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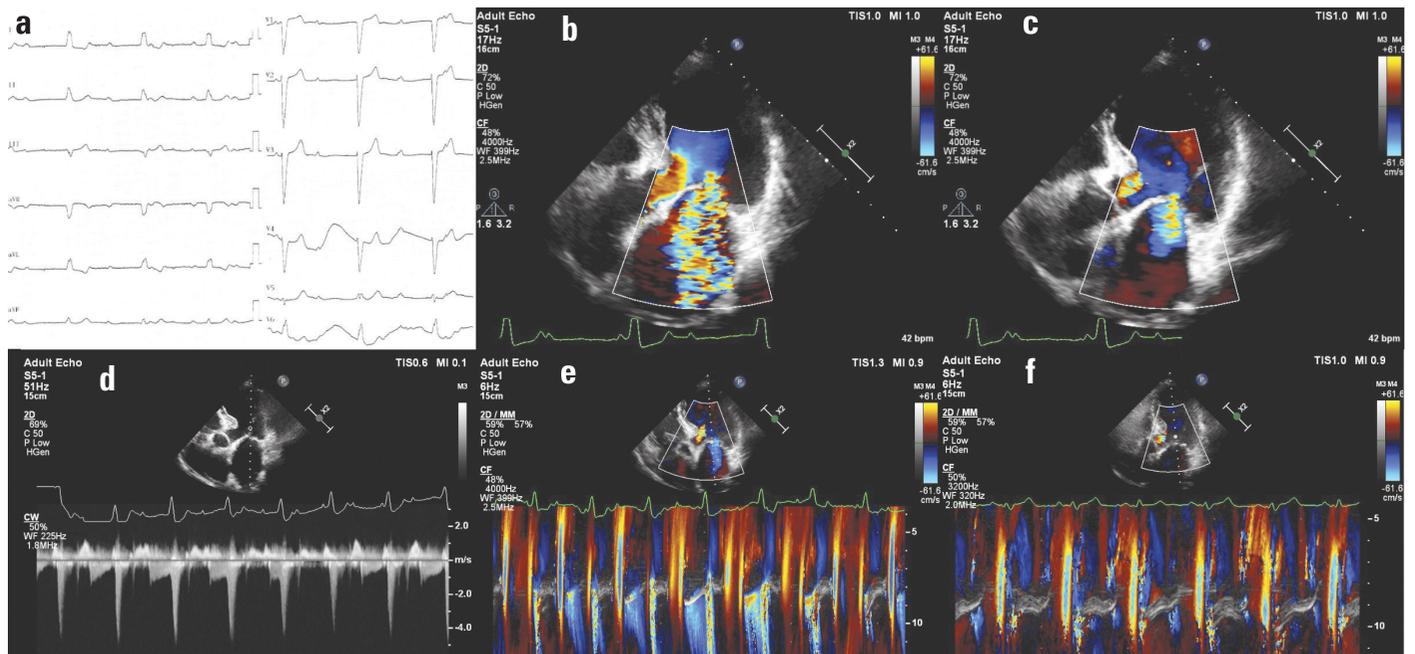


Figure 1. (a) ECG showing complete heart block. (b) Color Doppler of systolic mitral regurgitation (c) Color Doppler of diastolic mitral regurgitation and aortic regurgitation. (d) Continuous wave Doppler demonstrated systolic–diastolic mitral regurgitation. (e) Color M-mode Doppler depicted systolic–diastolic regurgitant flow. (f) Color M-mode Doppler confirmed disappearance of mitral regurgitation after pacemaker implantation