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IMAGES IN CARDIOLOGY

OPTIMIZATION OF RESYNCHRONIZATION AFTER SHORTENING OF ATRIOVENTRICULAR DELAY

OPTIMIZACIÓN DE LA DE RESINCRONIZACIÓN TRAS ACORTAMIENTO DEL RETARDO AURÍCULO-VENTRICULAR

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56 year old male, diagnosed with alcoholic dilated cardiomyopathy in functional class IV of New York Heart Association (NYHA), to whom cardiac resynchronization therapy was applied. The left ventricular electrode was placed in the anterolateral region via the coronary sinus. A month after the procedure he was reassessed when he reported symptoms similar to his condition before implantation. His blood pressure was 70/40 mmHg, and an electrocardiogram (Figure 1) and an echocardiogram were performed.

One might think that the atrioventricular delay shortening with respect to baseline situation should worsen diastole because of the erroneous thinking that when this parameter is shortened, the atrial systole (expressed as A wave) is superimposed even more to the rapid filling (expressed as E wave). But the clinical (immediate increase in functional capacity and blood pressure to 105/70 mmHg), electrocardiographic (Figure 2, tracing made after the shortening of atrioventricular delay) and echocardiographic (immediate improvement of transmitral flow) evidence refute this seeming paradox. After shortening this parameter from 160 ms to 128 ms, there was a reduction in the QRS average width and a significant prolongation of total diastolic filling time; the latter accompanied by a separation and a better definition of E and A waves in pulsed Doppler (Figure 3. A. Before modifying the atrioventricular delay. B. After modifying the parameter).

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Figure 1

Figure 2

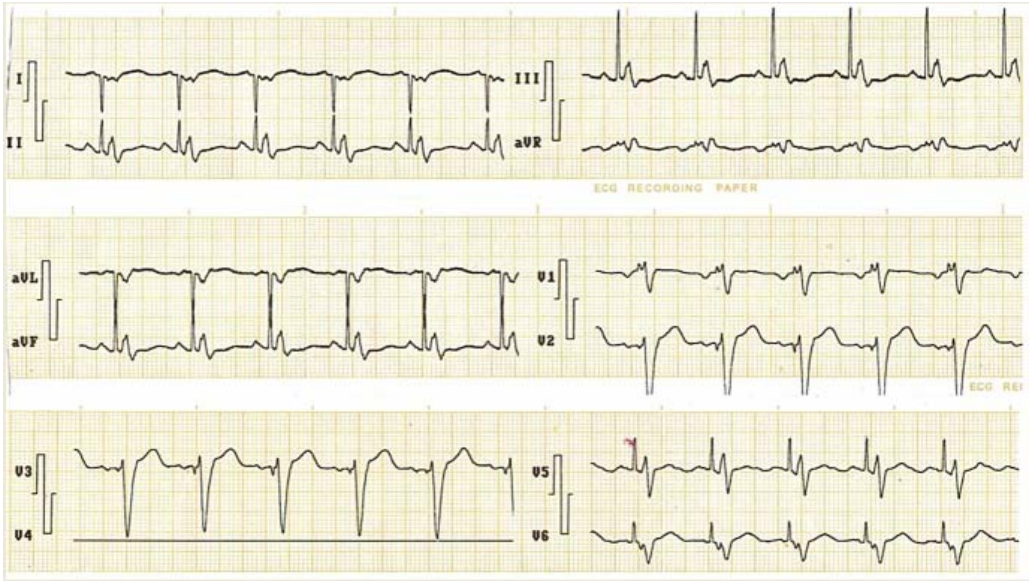

Figure 3