

scar in the posterior side) and diabetes mellitus type II (100%). On the other hand, the “responders clinical+echo” had idiopathic dilated cardiomyopathy (50%) or ischemic heart disease without previous revascularization or necrosis (50%). Conclusions: The presence of diabetes mellitus type II and ischemic heart disease complicated by prior necrosis (especially posterior–lateral) is associated with lack of echo parameters and clinical status improvement by CRT. It is well possible that the only echocardiographic initial improvement may subsequently lead to better survival. Further studies are needed.

13-3 Abstract 24-20

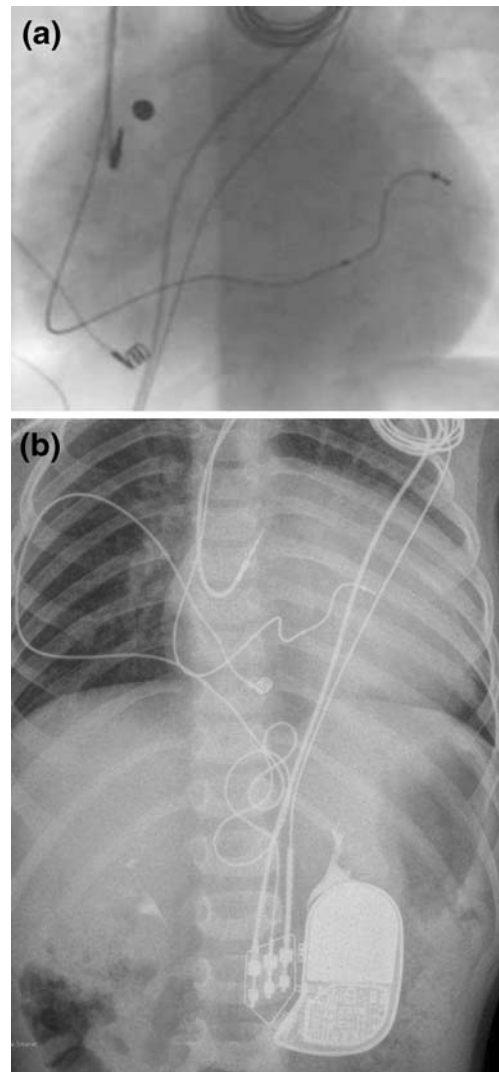
Successful cardiac resynchronization therapy in a 6-year-old pacemaker-dependent child with dilated cardiomyopathy

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Background: Development of congestive heart failure and dilated cardiomyopathy occurs in a small but significant subset of children undergoing chronic RV-based pacing systems. Indication criteria in this population are controversial, and transvenous implantation can be challenging. **Methods:** Patient's atrial septal defect was surgically closed at 9 months of age, and 1 year later for heart block, epicardial VVI pacemaker system was implanted. He (6 years old, 13 kg, 106 cm) was admitted with diminished exercise tolerance and failure of weight gain for cardiologic evaluation. The paced ECG revealed QRS duration of 180 ms. Echocardiography showed left ventricular end diastolic diameter of 57 mm and left ventricular ejection fraction of 22%. Severe LV dysfunction with inter- and intraventricular dyssynchrony caused by long-term right ventricular free wall pacing was presumed, and CRT was regarded an appropriate therapeutic option. Under general anesthesia, unipolar electrode was implanted in the left lateral side branch of the coronary sinus, and bipolar active fixation electrode to the right atrial wall percutaneously via the left subclavian vein. The electrodes were tunneled and connected to the abdominally placed atrio-biventricular pacemaker. **Results:** Atrial, left, and right ventricular thresholds were optimal. AV delay was optimized by conventional echocardiography using iterative method; the BiV QRS was 80 ms. After 1 month, there was a moderate improvement in clinical symptoms and LV function. **Discussion:** This report describes technically challenging and successful upgrade from a single-chamber to a dual-chamber biventricular pacing system in a small child with dilated cardiomyopathy caused by right ventricular free wall pacing. Upgrading to biventricular pacing systems should be considered in the management of these

patients prior to listing for cardiac transplantation, and using percutaneous techniques is safe even in this small pediatric patients.



13-4 Abstract 24-23

Evaluating the quality of life in patients with refractory heart failure undergoing cardiac resynchronization regarding the type of therapeutic response

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The benefits of cardiac resynchronization therapy (CRT) in the quality of life (QOL) are largely demonstrated in selected patients (P) with severe congestive heart failure (CHF). However, the differences between responders and non-responders, with regard to the effect of CRT in the various dimensions that constitute QOL, are still a matter of discussion. Objective: The objective of this study was to evaluate the impact of CRT on the QOL of P with CHF refractory to optimal pharmacological therapy within 6 months after CRT. Population and methods: Forty-three patients, submitted to successful implantation of CRT, were evaluated in hospital just before intervention and in the outpatient clinic within 6 months after CRT. QOL was analyzed based on the Kansas City Cardiomyopathy Questionnaire (KCCQ). P were classified as super-responders (ejection fraction of left ventricle (LVEF) \geq 45% post-CRT, $n = 15$, 65 ± 8 years, 46.7% male, LVEF pre-TRC $30 \pm 5\%$, 100% in NYHA class III), responders (sustained improvement in functional class and LVEF increased by 15%, $n = 19$, 63 ± 11 years, 84.2% male, LVEF pre-TRC $23 \pm 6\%$, 100% in NYHA class III), and non-responders (no clinical or LVEF improvement, $n=9$, 63 ± 6 years, 77.8% male, LVEF pre-CRT $24 \pm 7\%$, 22.2% in class II, 66.7% in class III, and 11.1% in NYHA class IV). Results: In the group of super-responders, CRT was associated with an improvement in QOL for the various fields and sums assessed ($\rho < 0.05$). In responders, CRT has been associated with an improvement of QOL in the various fields and sums, except in the self-efficacy dimension ($\rho < 0.05$). In non-responders, CRT was not associated with improvement of QOL. Conclusion: In a population with severe CHF undergoing CRT, the P with clinical and echocardiographic positive response obtained a favorable impact in all dimensions of QOL, while the group without response to CRT showed no improvement. These data reinforce the importance of QOL as a

multidimensional tool for the assessment of benefits in clinical practice.

13-5 Abstract 24-10

Hemodynamic benefit of cardiac resynchronization therapy requires left bundle branch block: a case report

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Background: The effect of cardiac resynchronization therapy (CRT) in the absence of left bundle branch block (LBBB) is disputable. This case report describes a patient with chronic congestive heart failure and rate-dependent LBBB receiving CRT. Results: QRS width was 90 ms during intrinsic rhythm at 70 bpm and prolonged to 160 ms with LBBB during atrial overdrive pacing at 80 bpm. This was accompanied by a prolongation of the interventricular electrical delay on the intracardiac electrogram from 60 to 130 ms. The acute hemodynamic effect of CRT at different atrioventricular delays was assessed by invasive measurement of the maximum rate of pressure rise (dP/dt_{max}) in the left ventricle during the implantation procedure. Initiation of LBBB caused acute significant decrease of 19% in dP/dt_{max} compared to narrow QRS. During LBBB, biventricular pacing with the optimal atrioventricular delay improved dP/dt_{max} by 20%. In the absence of LBBB, biventricular pacing did not improve acute hemodynamics and decreased dP/dt_{max} at shorter AV delays. Conclusions: Onset of LBBB caused a sudden decline in the left ventricular systolic function of 19% that could be completely restored by optimized CRT. In the absence of LBBB, there was not any acute improvement of left ventricular systolic function by CRT.

