

Multisite Left Ventricular Endocardial Pacing - A Single Center Experience

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Background: Multisite cardiac resynchronization therapy (MSCRT)- i.e. two pacing leads on LV- has theoretical advantages over conventional CRT in faster and more physiological LV activation. The indications and long term results are not well defined.

Aim: To summarize our experience in implantation of MSCRT.

Methods: Revision of all patients implanted with MSCRT during 2008-2011 in Barzilai MC.

Indications, ECG, location of leads, complications and long term results were analyzed.

Results: Thirteen patients, age 61 ± 10 y, 77% male, were implanted initially with MSCRT (not an upgrade from CRT). None had procedure related complications. All LV leads were connected via bipolar connector to LV port and paced bipolar. Indications were: 1) severe TR, AF, normal EF and HF NYHA III-IV (n=2). MSCRT-P was implanted before total AVJ ablation to avoid RV P/S lead implantation prior to TV surgery. During follow-up (f/u) of 23 and 41 m, FC improved to I-II with stable EF and deferral of surgery. 2) EF < 20%, NYHA III-IV and recurrent VT storms despite ablations and AAD (n=2, MSCRT-D). F/u of 11 m showed no VT episodes and NYHA II in both. 3) EF 15%, NYHA IV and LBBB > 150ms (n=3, MSCRT-D). One had drastic improvement, until death 13 m later from VF; one had died one day post implantation from HF exacerbation; and one had f/u < 1 m. 4) EF < 30%, NYHA \geq III and narrow QRS or RBBB (n=6, MSCRT-D). Three had symptomatic improvement during f/u of 5-19 m. The others had < 1 m f/u. LV leads location (CS branch): LV1- postero-lateral (n=8), posterior (3), and lateral (2). LV2- antero-lateral (n=8), anterior (4) and posterior (1).

Conclusions: MSCRT is feasible, safe and valuable in selected patients. Probable indications are: severe TR with severe HF - for symptomatic relief before TV surgery; incessant VT that has no ablative solution; end-stage HF with very wide QRS; and severe HF with narrow QRS / RBBB. Randomized controlled studies are required.