Isolated left ventricular non-compaction (ILVNC) is a rare cardiomyopathy and there are a few case reports of cardiac resynchronization therapy (CRT) for ILVNC. A 72-year-old woman was transferred to our emergency room due to bradycardia and pulseless ventricular tachycardia. Transvenous right ventricular (RV) pacing was performed in the emergency room and ventricular tachycardia was controlled. She was already diagnosed as ILVNC by a trans-thoracic echocardiogram, which showed prominent trabecula and thickened myocardium with 2 layers at mid and apical lateral wall. Because of severe impaired left ventricular (LV) contraction, wide QRS (complete left bundle branch block type, 168msec) and history of pulseless ventricular tachycardia, CRT defibrillator (CRT-D) was implanted. LV lead was placed in the lateral branch of coronary sinus where might be in non-compacted area. Right atrium (RA) lead was placed at RA appendage and RV shock lead was placed at RV apex. After 6 months follow-up period, LV end-diastolic volume and end-systolic volume was reduced (96.4ml to 64.4ml, 74.8ml to 38.83ml, respectively). LV ejection fraction was improved from 22.5% to 39.7%. B-type natriuretic peptide was also improved from 1068.6pg/ml to 110.6pg/ml. This case was considered as CRT responder, which was defined as over 15% reduction of end-systolic volume at 6 months after CRT, in spite of isolated left ventricular non-compaction.

Keywords: isolated left ventricular non-compaction, CRT