

87-year-old woman recovered from post-TAVR suicide LV syndrome

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An 87-year-old female patient visited our hospital with dyspnea. She had developed dyspnea on exertion 1 year prior to her visit, which had recently worsened to NYHA Class III-IV with significant limitation in her daily activities. Vital signs were in normal range, and laboratory results and electrocardiogram are also normal despite of low hemoglobin, high NT-proBNP(1210 pg/mL). Chest x-ray showed a blunted bilateral costophrenic angle. A transthoracic echocardiography (TTE) showed severe aortic stenosis (AS). Given the patient's old age and significant frailty, we planned transcatheter aortic valve replacement (TAVR). We proceeded with TAVR via a left transfemoral approach, a 26 mm Evolut R valve was successfully deployed (Fig. A). Supravalvular aortography and TTE showed only mild perivalvular leakage, but the patient subsequently changed rhythm to complete atrio-ventricular block (CAVB) and soon became hypotensive. Intraprocedural TTE showed hyperdynamic LV with late peaking mid-LV obstruction sign. Pressure gradient increased to 52 mmHg (Fig. C), and significant mitral regurgitation due to systolic anterior motion (SAM) of the anterior mitral valve leaflet (Fig. B). The patient was placed on a temporary pacemaker (PMK) for CAVB. And considering the possibility of post TAVR hyperdynamic suicidal LV syndrome, massive hydration and intravenous(IV) phenylephrine up to 0.83 mcg/kg/min for preload/afterload escalation were done. At dawn the next day, follow up TTE also showed LVOT flow acceleration and significant MR with SAM with a still hyperdynamic, small sized LV chamber despite of medical therapy. CAVB persisted at pacing-off status, so we proceeded a permanent PMK implantation(Fig. D). It was also expected that the intracavitary obstruction and LVOTO could be resolved due to dyssynchrony during right ventricular pacing. After permanent PMK implantation, TTE showed resolution of LVOTO, and disappearance of the mitral regurgitation associated with SAM(Fig. E, F). BP was also stabilized, and IV phenylephrine was subsequently tapered. At 10 days after the TAVR procedure, the patient was almost recovered and discharged after general care.

