

Case Report

Chronic Takotsubo Cardiomyopathy after Coronary Bypass Surgery Caused by Hypothyroidism on Levothyroxine Replacement Therapy

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A meanwhile 81-year old female patient was recurrently admitted to hospital because of dyspnoea and bilateral edema.

13 years ago (in 2005) the patient had coronary bypass surgery with normally contracting left ventricle with an ejection fraction of 64%.

She had severe hypothyroidism and was on levothyroxine replacement therapy.

In 2014 the patient developed atrioventricular node tachycardia and was treated with beta blocking agents and amiodarone. In the same year she developed high-grade atrioventricular block and DDD pacemaker was implanted.

At the end of 2014 echocardiography revealed asynchronous septal left ventricular dyskinesia due to continuous right ventricular stimulation with an ejection fraction of 58%.

In the next hospital stay in february 2015 the patient presented with massive dyspnoea and massive bilateral edema. Echocardiography revealed reduction of left ventricular function with an ejection fraction of 40%, and apical ballooning. Because of the echocardiographic finding coronary angiography was initiated and showed normal bypass morphology without any stenoses. She was still on levothyroxine replacement therapy at a dosage of 125 ug oral medication.

In the next years she was recurrently hospitalised with biventricular heart failure and echocardiographic reduction of left ventricular function, and continuous apical ballooning.

In conclusion, in the first view DDD pacemaker implantation seemed to contribute to reduction of echocardiographic left ventricular function but is limited to asynchronous septal dyskinesia. In a second view chronic takotsubo cardiomyopathy despite well functioning bypass grafting caused by severe hypothyroidism on current levothyroxine replacement therapy was debated.

Takotsubo cardiomyopathy caused by pheochromocytoma [1] or hyperthyroidism [2] is well known due to catecholamine increase.

Severe hypothyroidism seems to be a reason for takotsubo cardiomyopathy [3, 4] or on levothyroxine replacement therapy as well [5]. Due to ongoing hypothyroidism takotsubo cardiomyopathy is in a chronic state and left ventricular recovery is not yet reported during a long period of time from 2015 until 2018.

The theory is that reversible or continuous left ventricular dysfunction is caused by intense, neuroadrenergic myocardial stimulation, as it appears in severe hypothyroidism although on levothyroxine replacement therapy. This phenomenon appears to be the main trigger despite multiple described mechanisms.

References

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