

The recurrence after ten years — “mother in-law variant” of tako-tsubo syndrome

Nawrót zespołu tako-tsubo po 10 latach — „wariant teściowej”

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Abstract

The recurrence of left ventricular apical ballooning (LVAB) or tako-tsubo syndrome seems to be rare. Little data exists regarding the recurrence of the disease, especially over the long-term follow-up. We present a case of relapse of LVAB after ten years.

Key words: tako-tsubo cardiomyopathy, recurrence of left ventricular apical ballooning

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INTRODUCTION

Tako-tsubo cardiomyopathy is characterised by a reversible left ventricular apical ballooning (LVAB) with chest pain and electrocardiographic changes and relatively minor myocardial enzymatic release, which mimics acute coronary syndrome in patients without angiographic stenosis in the epicardial coronary artery [1–5]. Although no predictors of clinical outcome have been established, the general prognosis is quite good. Recurrence of tako-tsubo cardiomyopathy is rare [3, 6–12]. Cases in the literature describe the long-term follow-up of LVAB patients of up to four years. We present the case of a 72 year-old woman (who happens to be the mother-in-law of one of the co-authors) who experienced a recurrence of LVAB after ten years.

CASE HISTORY

A 72 year-old woman presenting with typical angina and dyspnea during intensive exertion and emotional stress was admitted to our hospital with a diagnosis of ST elevation acute coronary syndrome. In the initial ECG, the ST-elevation in the anterior leads was recorded (Fig. 1).

Immediate coronary angiography showed no relevant coronary artery stenosis (Fig. 2).

Serum levels of CK-MB (25.8 ng/mL) and troponin I (up to 5 ng/mL) increased, but returned to normal values within two days. BNP was slightly elevated (117 pg/mL).

The initial echocardiogram revealed severe dysfunction of the left ventricle with ejection fraction (EF) of 39%. The akinesis of apical segments of the anterior wall and intraventricular septum were observed. The contractility disturbances were complicated by a moderate ischaemic regurgitation. We found no perfusion defects during myocardial contrast echocardiography. Normal distribution profile of echocardiographic contrast was found in the akinetic regions. A second echocardiogram after 24 hours showed general improvement of the left ventricle contractility. Only the apical segments were hypokinetic and EF increased up to 55%. After seven days, a complete functional recovery of the left ventricle (EF 62%) was documented by echocardiography (Fig. 3).

Cardiac magnetic resonance (CMR) performed five days later revealed normal left ventricular contractility beside apical segment. Ejection fraction was 66%. An area of reversible

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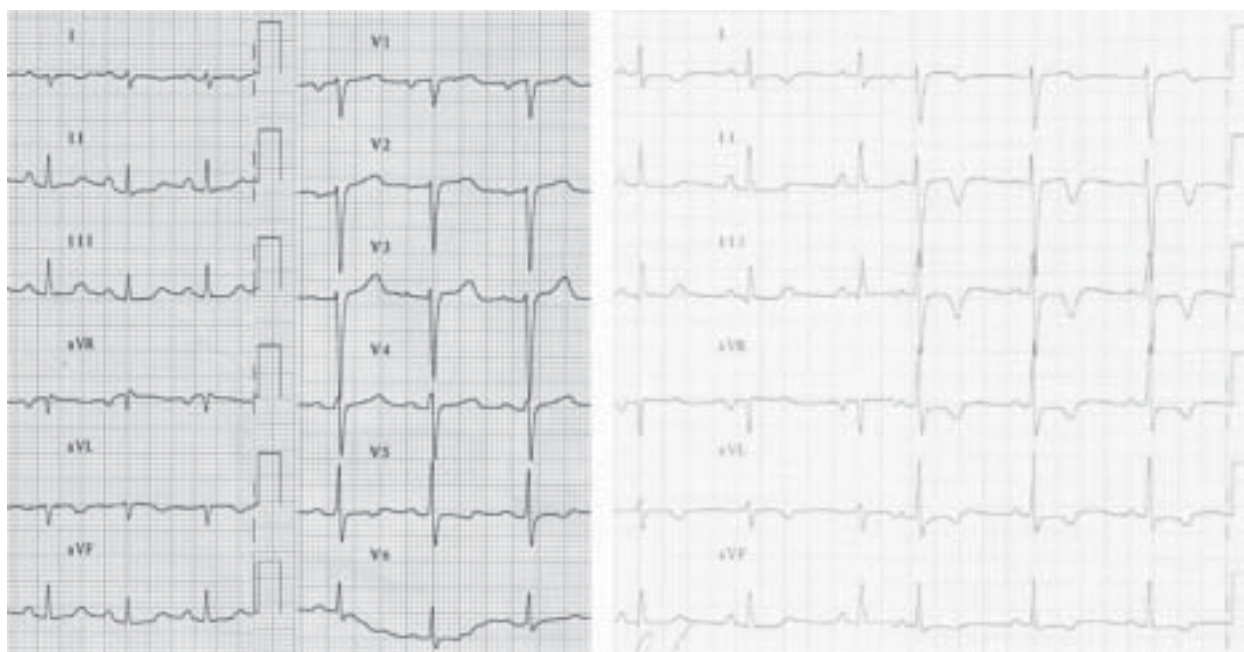


Figure 1. Serial 12-lead electrocardiogram on admission (left panels) and 7 days later (right panels). On admission, electrocardiogram showed slight ST-segment elevation in leads V2–V3 and T wave inversion in leads I, aVL and V5–V6. Seven days later ST-segment elevation was resolved, and T wave inversion in leads I, aVL and V1–V6 with QT prolongation was observed

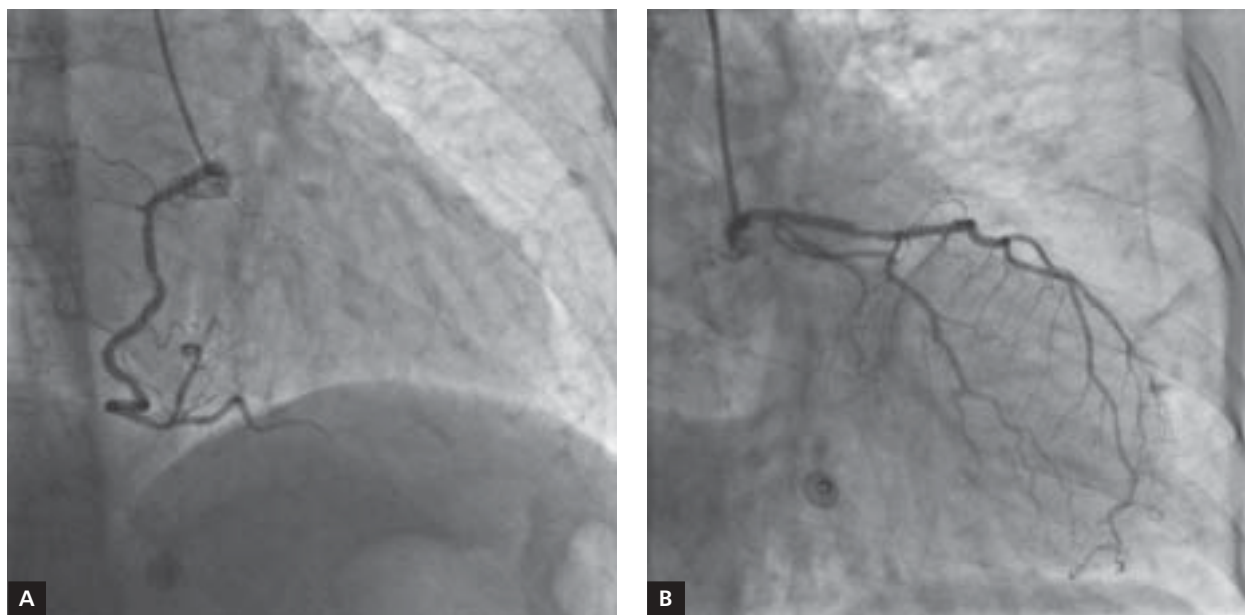


Figure 2. Coronary angiogram shows normal coronary arteries. **A.** Right coronary artery (left anterior oblique view); **B.** Left coronary artery (right anterior oblique view)

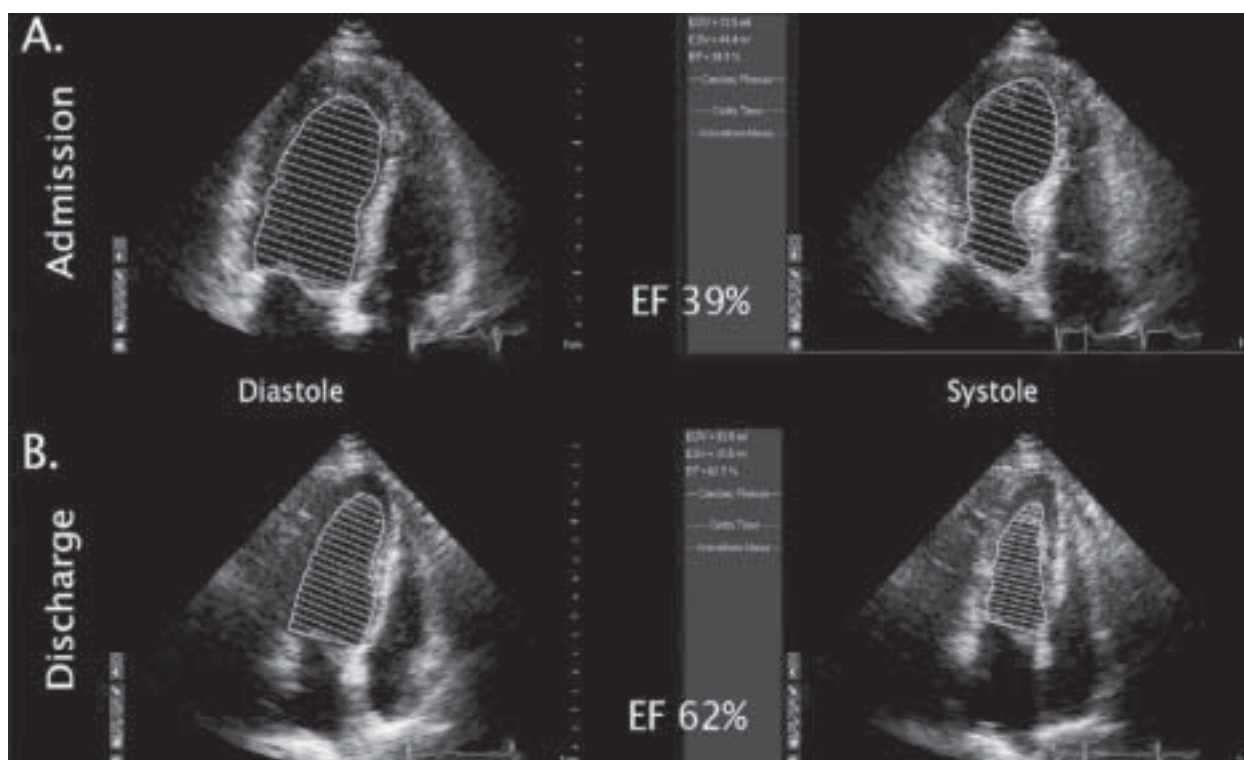


Figure 3. Two-dimensional transthoracic echocardiography (four-chamber view). **A.** The initial echocardiogram reveals systolic apical ballooning, with EF of 39%; **B.** The echocardiogram after seven days demonstrates complete functional recovery, with EF of 62%

damage (oedema) of the apical region was observed. T1-weighted images obtained 15 minutes after contrast administration (Gd-DTPA) demonstrated no late gadolinium enhancement (LGE) (Fig. 4).

The patient was discharged on day seven on beta-blocker, ACE-inhibitor, ASA and statin. An echocardiogram performed after six months showed complete recovery of left ventricular systolic function, with no regional wall abnormalities.

The described episode of LVAB was the second to have occurred in the patient's life. The first occurred in 1998 when typical extensive transitory contractility disturbances of the anterior wall and left ventricular apex, with EF of 35%, were observed in echocardiographic examination after an episode of chest pain induced by exertion and emotional stress. Figure 5 shows the initial ECG with mild ST-elevation in the anterior leads.

Emergency coronary angiography and intravascular ultrasound examination performed two weeks later showed an absence of any significant coronary lesions, while echocardiography and contrast ventriculography confirmed the restoration of normal contractility of the left ventricle.

DISCUSSION

The prognosis of patients with LVAB is generally favourable, with normalisation of wall abnormalities within weeks [1, 3, 5, 13–15]. Tako-tsubo cardiomyopathy recurs infrequently. Elsber et al. [11] observed an average yearly recurrence rate of 2.9% over the first few years after the first event, subsequently decreasing to 1.3% per year over the remainder of follow-up. Determining the true recurrence rate is not easy, as not all patients have been followed-up, while of those who have been followed-up, the length of time over which they have been assessed has varied from a few days to four years [3, 6–12].

We believe this to be the first report in literature of the recurrence of LVAB in the long term — after ten years, to be precise. It is interesting that both episodes were due to stress and exertion.

In conclusion, patients with tako-tsubo cardiomyopathy appear to be at risk of suffering a recurrence not only shortly afterwards but also over a long period, as in this case.

Because of the circumstances and the family situation of the presented patient, we suggest that recurrent episodes should be called the “mother in law variant” of tako-tsubo cardiomyopathy.

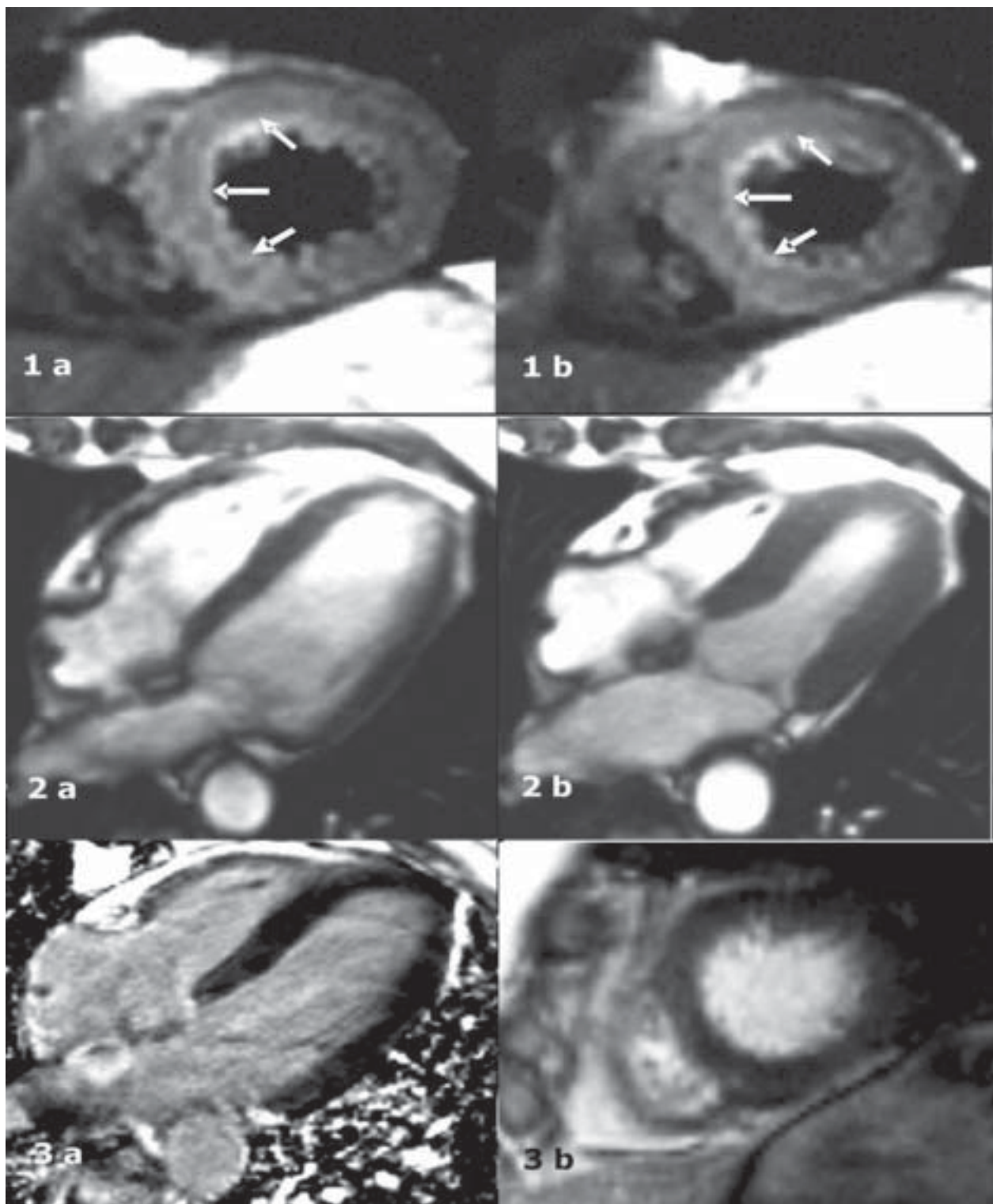


Figure 4. CMR performed five days after admission demonstrates area of reversible damage (oedema), normal left ventricular function beside apical segment and an absence of late gadolinium enhancement. 1) T2-weighted images in short axis view reveal oedema in the apical and septal segments (arrows); 2) Cine CMR images in four-chamber view; a) end diastolic; b) end systolic; 3) T1-weighted LGE images 15 minutes after contrast administration; a) four-chamber view; b) short axis view

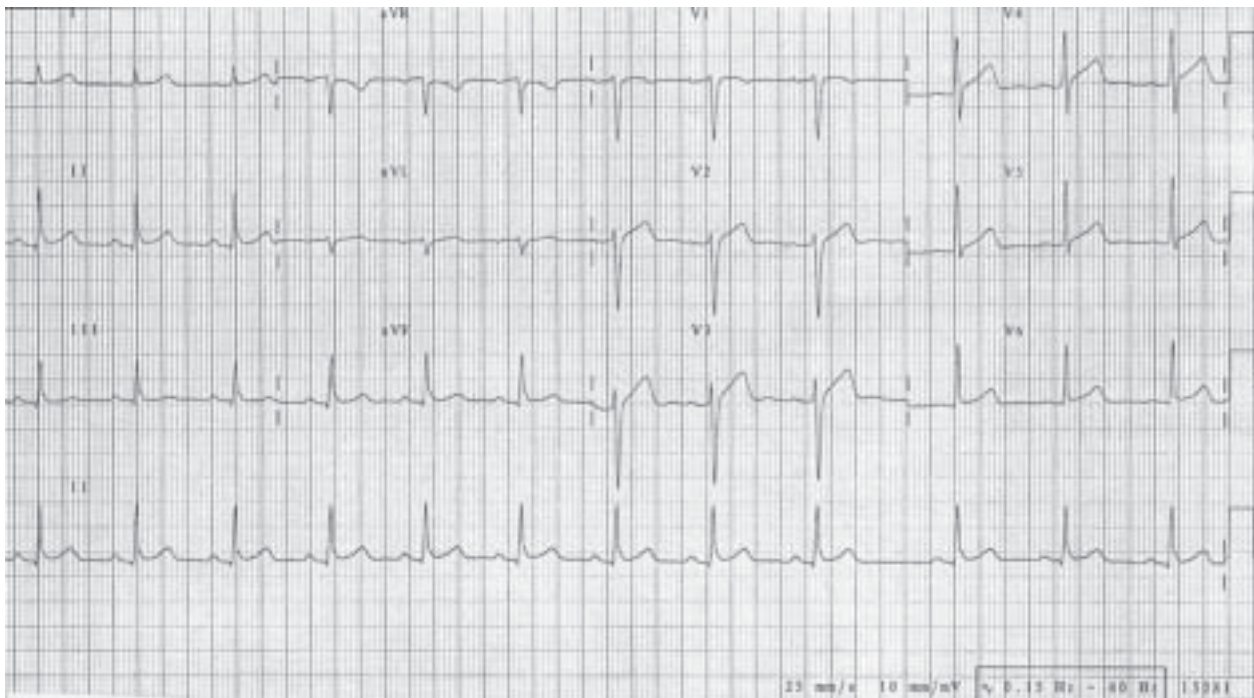


Figure 5. The initial 12-lead electrocardiogram with ST elevation in leads V1–V4 during the first episode of tako-tsubo in 1998

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