



Takotsubo Cardiomyopathy in a Young Women After Cosmetic Laser Treatment for Facial Mole Removal

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Takotsubo cardiomyopathy (TCM), also known as stress cardiomyopathy, is a type of nonischemic cardiomyopathy, in which there is a sudden temporary weakening of the muscular portion of the heart. It is usually the result of severe emotional or physical stress, such as a sudden illness, the loss of a loved one, or a serious accident. The most commonly discussed possible mechanism is stress-induced catecholamine release, with toxicity to and subsequent stunning of the myocardium. We describe a rare case of TCM in a young woman after receiving cosmetic facial mole removal under local laser therapy. She denied history of systemic disease. The patient had chest pain, shortness of breath, elevated cardiac enzymes, and ST-segment elevations in V1–V4. There is absence of significant coronary artery disease in emergent cardiac catheterization. Left ventriculography revealed apical ballooning akinesis with basal hyperkinesis during systole. Takotsubo cardiomyopathy was impressed under above findings. The patient was successfully treated with medical conservative treatment without complication.

Key words: Takotsubo cardiomyopathy, catecholamines, acute coronary syndromes, apical ballooning

INTRODUCTION

Takotsubo cardiomyopathy (TCM) is a transient cardiac syndrome that involves left ventricular apical akinesis and mimics acute coronary syndrome (ACS). Typical findings are disturbances of segmental contractility (apical hypokinesia or akinesia), with normal epicardial coronary arteries. There is usually a trigger in the form of physical or psychological stress.

We would like to describe the occurrence of TCM in a young woman following cosmetic facial mole removal under local laser therapy. She underwent successful medical conservative treatment and was discharged uneventfully.

CASE REPORT

This is the case report of a 30-year-old woman who denied any systemic disease and smoking habit. Chest tightness with

progression was complained after cosmetic laser treatment for facial mole removal. She was brought to the emergency room with Glasgow coma scale of E4M5V6, blood pressure of 115/97 mmHg, heart rate of 110/min, recovery rate of 20/min, and body temperature of 36°C. Physical examination showed chest tightness without radiation and warm extremities without cyanosis. Laboratory investigations showed creatine kinase 37 U/L and troponin I 0.09 ng/mL. No leukocytosis or elevation of C-reactive protein was found. ST-segment elevation in V1–V4 was noted in electrocardiogram [Figure 1]. Under the tentative impression of ST-segment elevation myocardial infarction, emergent cardiac catheterization was done. Surprisingly, there was no evidence of coronary occlusion in all coronary arteries. However, left ventriculography revealed apical ballooning akinesis with basal hyperkinesis during systole and reduced ejection fraction [Figure 2]. Takotsubo cardiomyopathy was diagnosed under above findings. We used beta-blockers and angiotensin-converting enzyme

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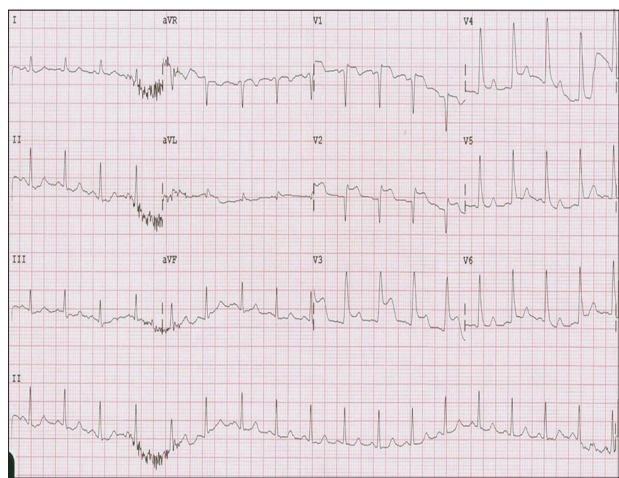


Figure 1: Electrocardiogram recording at presentation, which shows ST-segment elevation in precordial leads from V1 to V4

inhibitors on the 1st day of admission. After medical treatment, the ST-segment change went back to the baseline. She was discharged on day 3 of hospitalization.

DISCUSSION

TCM probably accounts for 1%–2% of all cases of suspected acute myocardial infarction.¹ It occurs most frequently in postmenopausal women,² and in some reports, it has been described with a peak incidence in summer³ and in the evening, which is different from myocardial infarction.⁴ Factors including smoking, heavy alcohol consumption, anxiety, and dyslipidemia were associated with the onset of this disease.⁵ The Mayo Clinic diagnostic criteria [Table 1] modified in 2008 is the most widely used in clinical practice and research.

Patients with TCM had a higher prevalence of neurologic or psychiatric disorders than did those with an ACS. The possible pathogenic mechanism of this disease is still not well established, but is thought to be associated with a high level of catecholamine during extreme stress, and it causes coronary vasospasm and cardiac microcirculatory disorder.⁶

This disease presents diverse cardiac complications in the acute phase, such as life-threatening ventricular arrhythmias, pump failure, cardiac rupture, and systemic embolism.⁷ Physical triggers, acute neurologic or psychiatric diseases, high troponin levels, and a low ejection fraction on admission were independent predictors for in-hospital complications.⁸ Supportive treatment is the mainstay of management during the acute phase.⁹ The use of angiotensin-converting enzyme inhibitors or angiotensin receptor blockers, but not of beta-blockers, was associated with improved survival.⁸ In most of TCM, abnormal myocardial

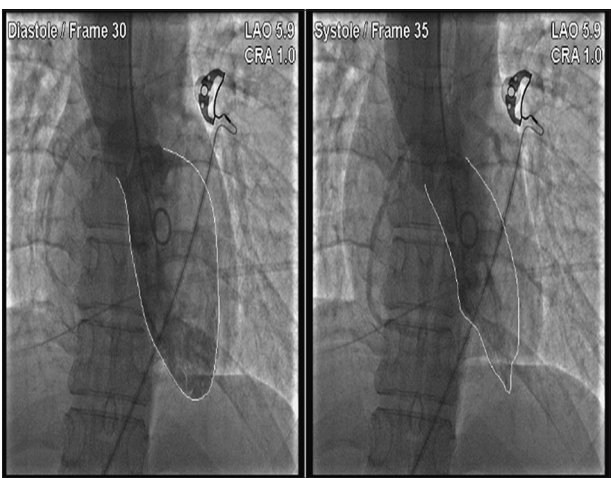


Figure 2: Ventriculography showing motion abnormalities of the left ventricle. Left image is end-diastole phase. Right image is end-systole phase, which shows a pattern of impaired apical–ventricular contractility

Table 1: The Mayo clinic diagnostic criteria

Transient hypokinesis, akinesis, or dyskinesis of the left ventricular; the regional wall motion abnormalities extend beyond a single epicardial vascular distribution; a stressful trigger is often, but not always present
Absence of obstructive coronary disease or angiographic evidence of acute plaque rupture
New ECG abnormalities (either ST-segment elevation and/or T-wave inversion) or modest elevation in cardiac troponin
Absence of pheochromocytoma and myocarditis
ECG: Electrocardiogram

contraction is normalized in several days to several months. The recurrence rate is approximately 10%.⁷

In the case of our patient, all of the four modified Mayo clinic criteria were satisfied and takotsubo stress cardiomyopathy was diagnosed. We identified that the local cosmetic laser treatment can also cause such a “broken-heart syndrome,” and it occurred in a young woman in contrast to the fact that the majority of patients are postmenopausal women. The use of beta-blockers and angiotensin-converting enzyme inhibitors was done and good clinical response was observed to make hospital discharge possible.

CONCLUSION

Takotsubo syndrome is an acute, but reversible cardiomyopathy. The clinical presentation can closely mimic ACS. Fatal complications can also occur in severe attack conditions. Having a good doctor–patient dialog to gather a complete history is important, because it may reveal an underlying exposure or trigger that may contribute to our treatment. Even in a noninvasive medical

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treatment such as cosmetic laser therapy, it can be at risk for this syndrome.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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