

## Introduction

Takotsubo is a Japanese term first described in 1990 defined as ballooning which in this case refers to ballooning of the left ventricle. It is an unusual kind of cardiomyopathy in which a series of events occur under emotional or physical stress. Studies show, patients with this condition present with atrial fibrillation, chest pain, dyspnea and often mimic acute coronary syndrome. Upon literature review here are a few characteristics of the typical patient with TCM.

- History of atrial fibrillation
- 89.9% women
- Average age 66.8 years
- Physical triggers > emotional triggers
- Most common symptom on admission → chest pain

Our aim is to show the correlation between cardioversion and Takostubo syndrome.

## Methodology

Literature review, extrapolated 3 TCM cases and a case report on our patient who we suspect to have TCM.

## Results

Column 1	Simmon Eggleton et al (1)	E. Vizzardi et al (2)	Shah N.R Wallis et al	Our case
<b>Demographics:</b>				
Age		76	81	78
Gender/Race	Female	Female	Female/Caucasian	Male
Co-morbid	HLD, HTN	HLD, HTN	Diabetes -2 and	HTN, DM2
<b>Presenting complain</b>	Dyspnea and Orthopnea	Chest pain and Dyspr	Palpitations	Afib w/ tachycardia
<b>Signs:</b>	Pulmonary edema and cardiogenic shock	Neurological deficit in left arm and leg	hemodynamically stable with fast Afib	LV failure and Cardiogenic shock
<b>ECG</b>	Initial ECG: SR LABF with bifid T wave in anteroseptal leads. Repeat ECG: marked widespread T wave inversion	Initial ECG: Sinus rh	Initial ECG: Afib Repeat: ST elevation in V2, ST depression, T-wave inversions III, avF	
<b>ECHO</b>	Post CV-New wall motion abnormalities with akinesis of the apical and mid segments of the left ventricle. Moderately dilated LA. EF 45%	Echo prior to CV: Normal kinetics with LAE At admission: LVEF 20%, akinesia of left ventricle apical and middle segments	LV angiogram: extensive apical hypokinesia, basal hyperkinesia and an estimated EF of 40%	Pre-CV: LVEF of 58%, moderately dilated LA. Post CV: anteroseptal and apical hypokinesia, LVEF 30%
<b>Clinical Examination</b>	Consistent with acute coronary	Respiratory acidosis, neurological deficit of left arm and leg. Cardiogenic shock and hypotension 90/50	hemodynamically stable with fast Afib	Post CV: severe hypotension, acute pulmonary edema, intubation
<b>TROPONIN I</b>	0.2mcg/L	Initial T: .63 ng/ml 2n 1.69 ng/ml		0.2 ng/ml
<b>Coronary Angiograph</b>	LAD and RCA patent, no occ	ruled out coronary artery disease		
<b>CV-SR Restoration</b>	No restoration to SR	Yes to SR		SR restoration
<b>Pt. Status</b>	Progressive improvement with normalization of wall motion	Progressive normalization of LVEF to 50%. No restoration of SR	LV wall motion has	Following 1 wk in ICU, complete LV recovery to 60%.

## Summary/Conclusion

To our knowledge this is the first reported case of TCM in a male patient. From our data and our patients clinical findings we are able to add to existing data and conclude:

- TCM can occur after DC cardioversion, hypothesized release of excess catecholamine under emotional/physical stress
- More common in females >50 but can occur in males
- Diagnosed by apical wall abnormalities on echocardiography with eventual resolution.
- Most patients improve with supportive care
- Recognized as a benign disorder, but with risk of recurrence.

## References

- Simmon Eggleton MD, (2014). Takotsubo Cardiomyopathy as a Sequela of Elective Direct-Current Cardioversion *Texas Heart Institute Journal*,184-187.
- Vizzardi, E., (2016). Takotsubo syndrome in elderly woman due to electrical cardioversion. *International Journal of Cardiology*,69-71.
- Shah N. R., MD, (2015). Recurrent Direct Current Cardioversion Induced Takotsubo Cardiomyopathy. *International Cardioversion Forum Journal*,32-34.

**Legend:** Afib=atrial fibrillation CV=cardioversion DC=direct cardioversion LABF=left anterior fascicular block LAD=left anterior descending a. LAE=left anterior enlargement LVEF= left ventricular ejection fraction PT=patient SR=sinus rhythm TEE=transesophageal echocardiogram Reference range: Troponins: 0.04-.39 ng/m