

ONLINE FIRST PUBLICATION

Online first papers have undergone full scientific review and copyediting, but have not been typeset or proofread. To cite this article, use the DOI number provided. Mandatory typesetting and proofreading will commence with regular print and online publication of the online first papers of the *SMJ*.

Takotsubo cardiomyopathy precipitated by election preparation-related stress

Nicholas WS Chew, MBChB, MMed¹, Ching-Hui Sia, MBBS, MMed^{1,2},
Joshua Ping-Yun Loh, MBBS, MMed^{1,2}

¹Department of Cardiology, National University Heart Centre, National University Health System, ²Yong Loo Lin School of Medicine, National University of Singapore, Singapore

Correspondence: Dr Ching-Hui Sia, Department of Cardiology, National University Heart Centre, National University Health System, 1E Kent Ridge Rd, NUHS Tower Block, Level 9, Singapore 119228. ching_hui_sia@nuhs.edu.sg

Singapore Med J 2022, 1–4

<https://doi.org/10.11622/smedj.2022033>

Published ahead of print: 20 March 2022

Online version can be found at
<http://www.smj.org.sg/online-first>

Dear Sir,

There is increasing literature highlighting the impact of political events on mental health. This has been playfully coined as ‘Trump Anxiety Disorder’ in several medical journals.^(1,2) However, there is a lack of reports on cardiac manifestations related to political stressors. We herein report a case of a patient who was under immense distress related to the Singapore General Elections and presented with stress-induced cardiomyopathy.

A 62-year-old woman with hypertension and hyperlipidaemia was assisting in the election campaign for a political party in the Singapore General Elections. She was heavily involved in its preparation the day before the start of the campaign trail and worked till late into the night. On the morning of the campaign, as she was preparing to leave her home, she developed acute dyspnoea at rest with substernal chest discomfort and was sent to the emergency department via ambulance. Arterial blood gas revealed decompensated type 2 respiratory failure. Peak troponin I concentration was 2,162 ng/L (normal range 0.0–17.4 ng/L), NT-proBNP level was 261 pg/mL (normal range 0–247 pg/mL), with ST-segment elevation in precordial leads V2–V3 on electrocardiogram. Chest radiograph showed acute pulmonary oedema. She was intubated, and loaded with aspirin and ticagrelor. Emergency cardiac catheterisation revealed normal coronaries. Echocardiogram demonstrated depressed a left ventricular (LV) ejection fraction of 30%, with apical dyskinesia (Fig 1). Three days after the echocardiogram, cardiac magnetic resonance imaging showed recovery of LV systolic function. There was focal transmural late gadolinium enhancement in the apical inferior LV myocardium suggestive of local myocardial infarction (Fig. 2). These findings were consistent with Takotsubo cardiomyopathy, a diagnosis of exclusion, precipitated by elections-induced stress.

The patient was weaned off noradrenaline support, diuresed and extubated on Day 2 of admission. She was started on angiotensin-converting enzyme inhibitor, beta-blocker and diuretics. She was discharged 72 hours later.

There is relatively limited information on cardiac manifestations of distress induced by political events. During general elections, campaigns are a source of stress and nervousness among participants. This may lead to excessive sympathetic stimulation and release of catecholamine hormones, resulting in cardiotoxicity. Politics has increasingly become a source of stress. One of the first cases of stress-induced cardiomyopathy related to political stress was reported in Pakistan in 2009 when a middle-aged woman developed Takotsubo cardiomyopathy in the face of stress from political riots.⁽³⁾ A recent case of politically induced stress cardiomyopathy resulted from the impeachment hearings of the President of the United States, Donald Trump.⁽⁴⁾

Although this case report cannot infer causality, it highlights that political stressors should be considered as a potential precipitant for Takotsubo cardiomyopathy, particular during stressful general elections. Early detection and treatment is important, as pulmonary oedema and malignant arrhythmia, complications of this heart condition, can be fatal.

Yours sincerely,

Nicholas WS Chew¹, Ching-Hui Sia^{1,2}, Joshua Ping-Yun Loh^{1,2}

¹Department of Cardiology, National University Heart Centre, National University Health System, ²Yong Loo Lin School of Medicine, National University of Singapore, Singapore.

ching_hui_sia@nuhs.edu.sg

REFERENCES

1. Anxiety in the age of Trump. *Compr Psychiatry* 2017; 74:A3.
2. Solomonov N, Barber JP. Conducting psychotherapy in the Trump era: therapists' perspectives on political self-disclosure, the therapeutic alliance, and politics in the therapy room. *J Clin Psychol* 2019; 75:1508-18.
3. Geisen WR, Rosse C, Menon S, Rudick S. Trump cardiomyopathy: a new form of Takotsubo cardiomyopathy. *J Card Fail* 2020 Jun 19:S1071-9164(20)30139-1. <https://doi.org/10.1016/j.cardfail.2020.05.016>. Epub ahead of print
4. Arshad S, Dhakam SH. Political riots in Pakistan and stress-induced cardiomyopathy: a case report. *BMJ Case Rep* 2009; 2009:bcr.12.2008.1366.

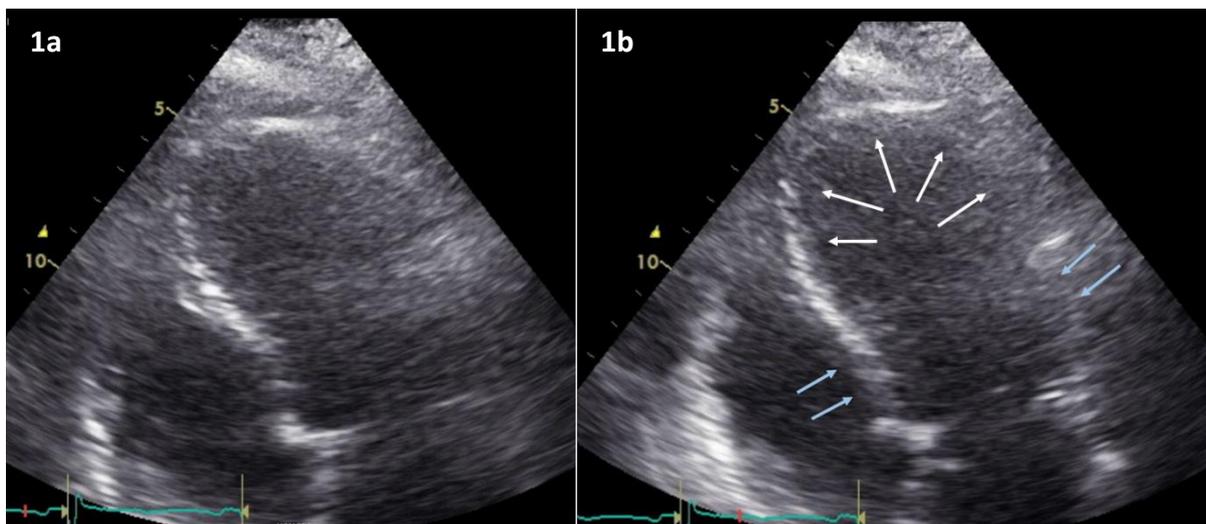


Fig. 1 Apical 4-chamber views on echocardiogram in (a) end-diastole and (b) end-systole show a ballooned apex (white arrows) and contracting basal segment (blue arrows), features of Takotsubo cardiomyopathy.

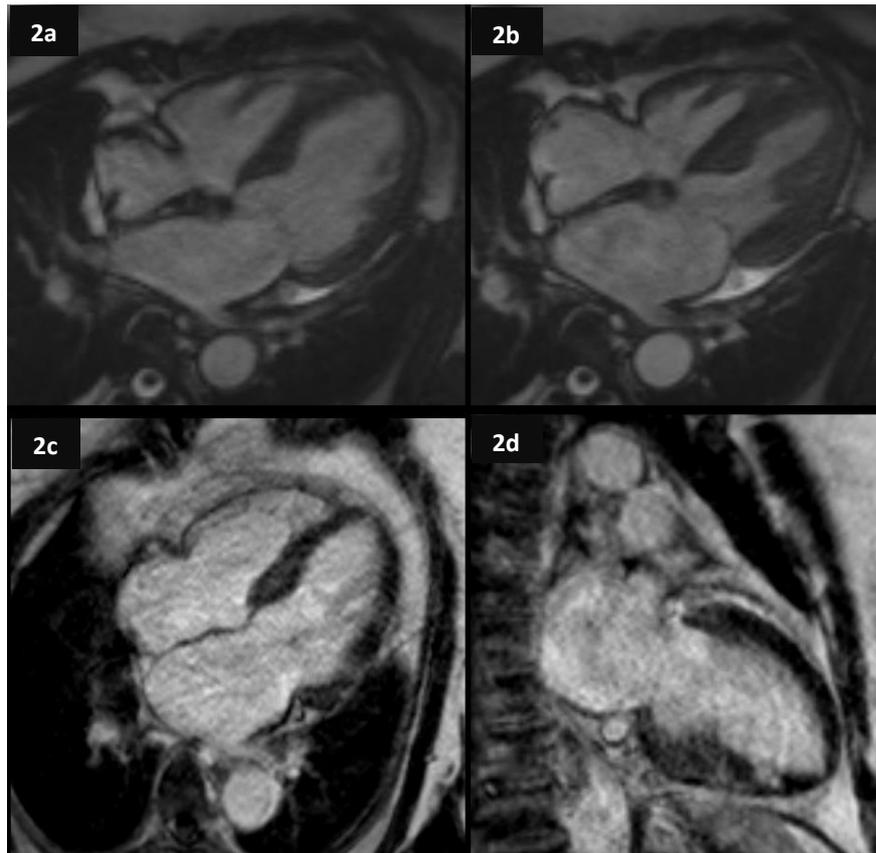


Fig. 2 4-chamber views on cardiac MR imaging in (a) diastole and (b) systole, taken three days after the echocardiogram, show recovery of left ventricular function, in keeping with the natural history of Takotsubo cardiomyopathy. (c) 4-chamber and (d) 2-chamber views show focal transmurular late gadolinium enhancement (LGE) in the apical inferior left ventricular myocardium, suggestive of local myocardial infarction; no other region of LGE was seen in the other myocardial segments.