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1 Main text

2 A 50-year-old woman presented in 2010 with chest pain with lateral ST-elevation on
3 the electrocardiogram. Invasive coronary angiography revealed non-obstructive coronary
4 disease and she had a mildly raised troponin (342 ng/L). Echocardiography suggested severe
5 LV systolic dysfunction (ejection fraction 35%) with hyperdynamic basal segments and
6 akinesia of the mid to apical segments. Cardiac magnetic resonance (CMR) imaging
7 demonstrated hypokinesia of the mid to apical segments associated with apical hypertrophy
8 (14mm, normal range < 6mm) and diffuse mid to apical ventricular oedema on T2-STIR
9 images (Figure 1 A-B, supplementary video 1). The patient underwent repeat imaging 6
10 months later which revealed complete resolution of the changes in keeping with a diagnosis
11 of resolved takotsubo cardiomyopathy (TCM) (Figure 1 C-D, supplementary video 2). She
12 was reassured and discharged with no medical therapy.

13 The patient represented in 2019 with breathlessness, chest pain and elevated
14 troponin (95 ng/L). Non-obstructive coronary artery disease was again demonstrated on
15 angiography (supplemental video 3-5). The electrocardiogram was normal, and the
16 echocardiogram demonstrated mild apical septal hypokinesia (supplemental video 6). A
17 further CMR demonstrated recurrence of the apical oedema and hypertrophy (11 mm)
18 (Figure 1 E-F, supplemental video 7). Repeat imaging 3 months later again showed LV
19 functional recovery with near complete resolution of the changes (Figure 1 G-H,
20 supplemental video 8) in keeping with recurrent TCM.

21 This case illustrates few important points: 1) recurrent episodes of TCM can occur
22 10 years apart with similar clinical presentation and identical CMR appearances; 2) TCM can
23 mimic apical hypertrophic cardiomyopathy (previously unreported) as the acute myocardial
24 oedema swelling the myocardial wall; however, this is a transient process and, upon

1 resolution of myocardial oedema, the wall thickness reduces returning to normal 3) caution
2 should be used when interpreting thickened myocardial walls in the presence of extensive
3 myocardial oedema, avoiding to overcall hypertrophic cardiomyopathy where macroscopic
4 myocardial oedema is normally not present.

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