



## Takotsubo cardiomyopathy (left ventricular apical ballooning)

Constantin Marcu, Dragos Balf, Thomas Donohue

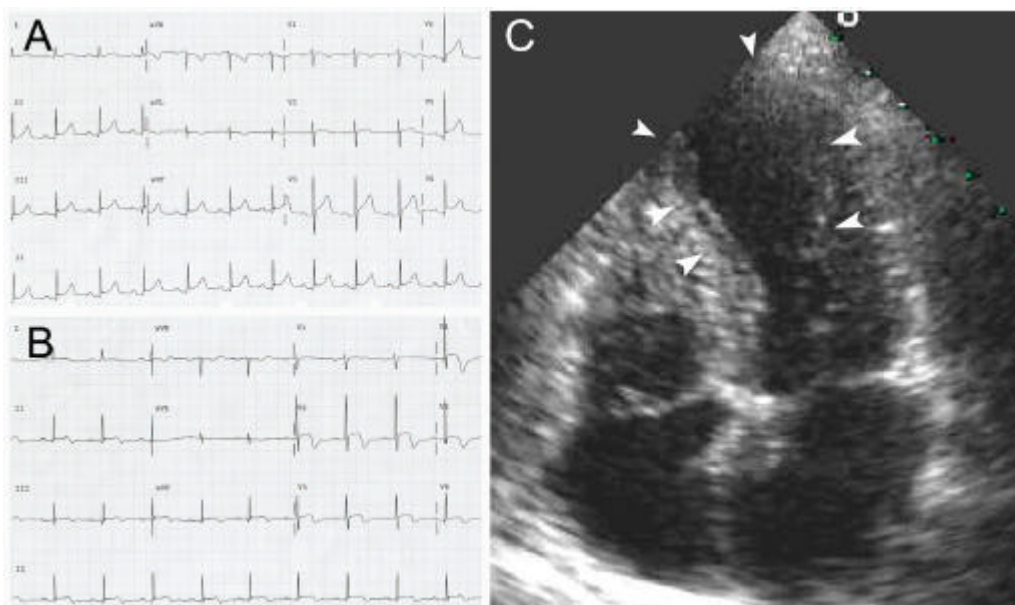
A 69-year-old woman presented to our emergency department with clinical complaints and electrocardiographic changes of myocardial ischaemia (Figure 1A and Figure 1B). Cardiac troponin T levels were mildly elevated with a subsequent downward trend. An echocardiogram demonstrated akinesia/dyskinesia of the left ventricular apical region (Figure 1C). There were no visible stenoses on coronary angiography.

### Figure 1

**A: Electrocardiogram with ST-segment elevations in leads II, III, aVF, V4-V6.**

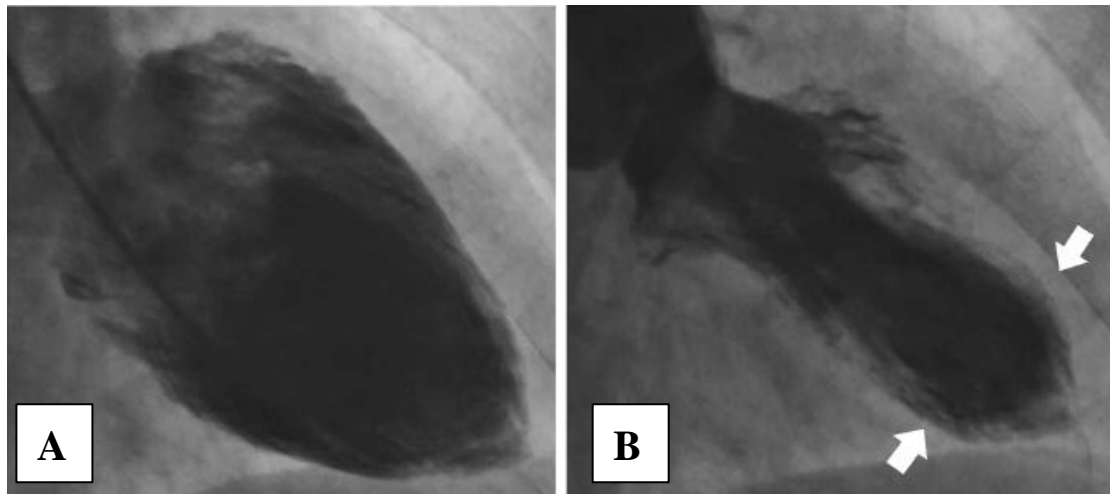
**B: Electrocardiogram with ST-segment elevations in leads II, III, aVF, V4-V6 and evolutionary T wave inversion. Prolonged corrected QT interval of 450 msec.**

**C: Echocardiogram, 4-chamber apical view, with apical akinesia-dyskinesia (arrowheads)**



Left ventricular apical dyskinesia was demonstrated on ventriculography (Figure 2A and Figure 2B). The patient had an uneventful recovery, and a repeat echocardiogram, 1 week later, demonstrated normal left ventricular systolic function.

**Figure 2. Left ventriculogram (A: end diastolic frame B: end systolic frame with apical hypokinesis-dyskinesia [arrows])**



This was a case of acute transient apical ballooning with normal coronary arteries ('Takotsubo' cardiomyopathy). The clinical presentation of transient apical ballooning is similar to that of acute myocardial ischaemia with electrocardiographic changes represented by ST-segment elevation in at least 80% of patients, and development of evolutionary T-wave inversions. The corrected QT interval is often prolonged. Most patients have a small increase in cardiac troponin levels, which do not follow the slow rise-and-fall pattern observed in myocardial infarction.

Despite left ventricular wall motion abnormalities, including akinesia of the apical and mid-left ventricular portions, no coronary obstruction is demonstrated on angiography. Prognosis is good after appropriate supportive treatment, with complete left ventricular systolic function recovery within weeks.<sup>1</sup>

**Author information:** Constantin B Marcu, Dragos V Balf, Thomas J Donohue, Section of Cardiology, Hospital of Saint Raphael – Yale University School of Medicine, New Haven, CT, United States

**Correspondence:** Constantin B Marcu, Section of Cardiology, Hospital of Saint Raphael – Yale University School of Medicine, 1450 Chapel Street, New Haven, CT 06511, United States. Fax: +01 203 789 6046; email: [bmarcu@srhs.org](mailto:bmarcu@srhs.org)

**Reference:**

1. Bybee KA, Kara T, Prasad A, et al. Systematic review: transient left ventricular apical ballooning: a syndrome that mimics ST-segment elevation myocardial infarction. *Ann Intern Med.* 2004;141:858–65.