Chest pain and reversible midventricular ballooning in a woman after witnessing sudden cardiac death: A possible variant of takotsubo cardiomyopathy

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A 60-year-old woman presented to the emergency department with acute onset of severe chest pain. The pain started that morning, after witnessing the sudden cardiac death of a coworker. The electrocardiogram did not reveal evidence of ischemic ST segment deviations. Creatinine kinase was within the normal range but cardiac troponin T was elevated (2.24 µg/L). Coronary artery disease was ruled out by emergency coronary angiography. However, left ventricular angiography demonstrated an atypical midventricular ballooning with a reduced left ventricular ejection fraction of 40%. Figure 1A shows the end-systolic and Figure 1B the end-diastolic left ventricular angiogram on admission. Cardiac magnetic resonance imaging was performed the next day and revealed a complete normalization of left ventricular function (ejection fraction of 65%) without any sign of regional hypokinesis or ballooning (Figure 1C). In addition, myocardial scar formation was ruled out by delayed contrast enhancement imaging (Figure 1D).

These clinical findings are compatible with a diagnosis of takotsubo cardiomyopathy (1). Classical takotsubo cardiomyopathy is characterized by transient left ventricular apical ballooning, chest pain, myocardial enzyme release and electrocardiographic abnormalities suggestive of an acute coronary syndrome without the significant angiographic coronary artery stenosis that often occurs in postmeno-

pausal women (2). In our patient, the onset of chest pain was associated with witnessing an acute cardiac death. Left ventricular angiography revealed atypical midventricular ballooning, which is a variant of classical takotsubo cardiomyopathy that is increasingly being studied (3). The present case is unique because no electrocardiogram changes occurred, and the patient recovered quickly and completely within 18 h. Due to several atypical features in the disease course, it is believed that the present patient presented with a new variant of the widening disease spectrum of takotsubo cardiomyopathy.

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Figure 1) A End-systolic left ventricular angiogram on admission. B End-diastolic left ventricular angiogram on admission. C Cardiac magnetic resonance image revealing a complete normalization of left ventricular function without any sign of regional hypokinesis or ballooning. D Myocardial scar formation was ruled out by delayed contrast enhancement imaging

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Received for publication July 29, 2007. Accepted September 24, 2007