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Stressed at the dentist? A case of tako-tsubo

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In October 2010, a 64 year-old lady with history of well controlled hypertension, previous stroke with no residual weakness and psoriasis attended for a routine tooth extraction. This proved to be a complicated procedure, lasting over an hour, requiring repeated injections of prilocaine and felypressin and resulting in considerable distress to the patient. Fifteen minutes after the procedure finished, the patient experienced central crushing chest pain with radiation to the left arm and her back. She was breathless and sweaty. She attended the emergency department at our institution where examination, initial ECG and chest radiograph were unremarkable. However, her initial troponin level was elevated at 0.54 μg/L (normal < 0.1 μg/L) and measured 1.4 μg/L at 12 hours. Within 24 hours her ECG evolved demonstrating prolongation of the QT interval and lateral T wave inversion. She subsequently underwent coronary angiography, which found smooth normal coronary arteries; left ventriculography demonstrated apical akinesia with basal hyperkinesis (Figs. 1, 2), consistent with tako-tsubo phenomenon. She was treated with aspirin, clopidogrel, bisoprolol, ramipril and atorvastatin and she made a good recovery. Two months later, transthoracic echocardiography showed normal left ventricular size and function.

Tako-tsubo was first described in 1991 in patients presenting with cardiac pain, ECG changes consistent with ischemia/infarction, normal coronary angiogram but transient apical akinesis/hypokinesis on left ventriculography [1]. This is thought to arise from catecholamine-mediated epicardial coronary vasoconstriction leading to myocardial stunning, although other theories have been proposed [2, 3]. It is estimated that 1–2% of patients presenting with the clinical picture of an acute myocardial infarction actually suffer from tako-tsubo cardiomyopathy [4].

Typically, tako-tsubo affects post-menopausal females following a significantly stressful event and has been described following bereavement, accidents, physical stress and acute medical illnesses. To our knowledge, this is the first report of tako-tsubo cardiomyopathy occurring apparently as a result of a tooth extraction. Both the significant

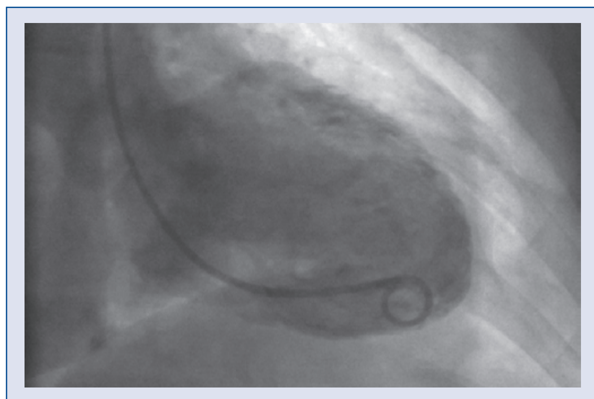

Figure 1. Normal sized ventricle in diastole.

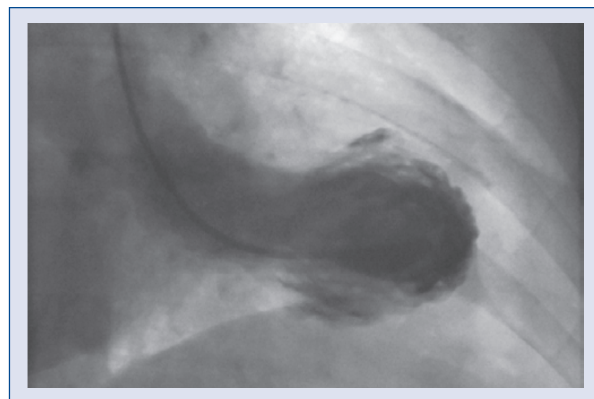

Figure 2. Apical hypokinesis and basal hyperkinesis in systole diagnostic of tako-tsubo cardiomyopathy.

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emotional stress our patient experienced throughout the procedure and the vasoconstrictive agents used are likely to have contributed, and we wish to make healthcare professionals aware of this possibility when managing patients with chest pain following dental procedures.

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