Is Early Cardiac Assessment Essential For All Children With Sudden Collapse?

S Chakrabarti, I Rodd, R Manikonda, J Vettukattil

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Abstract

Sudden collapse is a common problem encountered in paediatric practice. Cardiac conditions presenting as collapse are rare but significant; some of them are potentially fatal. We would like to submit the article for the "Case report" section of your journal, to raise awareness of this challenging condition.

CASE REPORT

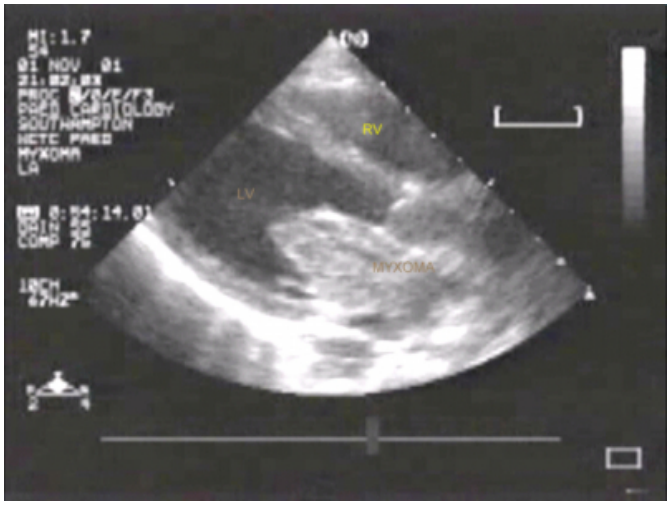
A 9-year-old boy felt dizzy and collapsed whilst playing football. He had generalised hypertonia, with a fixed “staring” gaze, and was sweating profusely. There was no history of fever or trauma. He subsequently had fluctuating level of consciousness, but no other neurological signs and a normal physical examination. He had previously had an episode of near drowning a year earlier and an elctroencephalogram (EEG) was normal.

The initial Computed Tomography (CT) Scan of the head and cerebrospinal fluid studies were normal. However, repetitive sharp high voltage complexes were obtained on EEG on this occasion. A repeat cranial CT showed cerebral oedema. Investigation screens to rule out infection, metabolic, autoimmune or toxicological aetiologies of the encephalopathy, were negative.

An echocardiogram, performed to exclude a possible cardiac cause for sudden collapse showed a 4cm/3.5cm/3.9 cm irregular mass in the left atrium (fig 1), free from the mitral valve but almost completely obstructing the mitral inflow. A diagnosis of left atrial myxoma with acute, catastrophic loss of cardiac output was considered as the cause of initial presentation, with consequent neurological sequelae. These progressed and care was withdrawn after a diagnosis of brain stem death had been made.

Figure 1

Figure 1



DISCUSSION

Cardiac tumours are uncommon as a cause of sudden collapse, especially in children.

Symptoms from such lesions[1] may be cardiac, systemic, neurological or embolic, and may be recurrent. [2]

A single fit may be the first indicator of a cerebral embolic phenomenon related to a cardiac tumor.[3] Up to 36 % of patients with left atrial myxomas have normal clinical examination and electrocardiogram[4], whilst chest X-rays are normal in nearly half of these patients. Hence, a normal clinical examination, including ECG or chest X-Ray does not completely rule out a cardiac tumour as a cause of sudden collapse. Collapse may be secondary to neuro-embolic manifestations, tumour related arrhythmias[5], or

cardiac inflow/ outflow obstruction[6].

Once detected, prognosis of the myxomas is excellent, with very low surgical mortality and post-operative recurrence.[7]

Sudden collapse is a common problem in paediatric practice. Potentially fatal causes include long QT syndrome, Wolff-Parkinson-White syndrome, hypertrophic cardiomyopathy, myocarditis, dilated cardiomyopathy, Kawasaki's disease and arrhythmogenic right ventricular dysplasia.

We suggest that all children with a history of unexplained collapse with no obvious etiology identified should have early cardiac evaluation. A normal clinical examination, ECG and chest X-ray do not exclude rare, but potentially fatal causes of collapse, and echocardiography should always be considered.

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Author Information

Santabhanu Chakrabarti, MD, MRCPCH
Department of Paediatric Cardiology, Wessex Cardiothoracic Centre, Southampton University Hospitals

Ian Rodd, MBBS, BA, MRCP
Department of Paediatric Cardiology, Wessex Cardiothoracic Centre, Southampton University Hospitals

Ravi K. Manikonda, MD, MRCP, MRCPCH
Department of Paediatric Cardiology, Wessex Cardiothoracic Centre, Southampton University Hospitals

Joseph J. Vettukattil, MD, MRCPCH
Department of Paediatric Cardiology, Wessex Cardiothoracic Centre, Southampton University Hospitals