SUDDEN DEATH DUE TO PANCARDITIS- A CASE REPORT

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DOI: http://dx.doi.org/10.24327/ijrsr.2020.1105.5306

ARTICLE INFO

Article History:
Received 6th February, 2020
Received in revised form 15th March, 2020
Accepted 12th April, 2020
Published online 28th May, 2020

Key Words:
Pancarditis, Carditis, Perimyoendocarditis, Granulomatous pancarditis, Sudden death, Sudden cardiac death, Mycobacterium tuberculosis.

ABSTRACT

Sudden cardiac death is most commonly defined as unexpected death from cardiac causes either without symptoms, or within 1 to 24 hours of symptom onset. Carditis is the inflammation of the heart. Pancarditis, also called as perimyoendocarditis, is the inflammation of the entire heart: the pericardium, the myocardium and the endocardium. It may present acutely with congestive cardiac failure or sudden death. Various causes of pancarditis include Tuberculosis, Rheumatic fever, Systemic lupus erythematosus, Lyme disease etc. Here, I present an autopsy report for a case involving the sudden and unexpected cardiac death of a 21 year old male that was caused by granulomatous pancarditis likely due to Mycobacterium tuberculosis.

INTRODUCTION

Death is said to be sudden or unexpected when a person not known to have been suffering from any dangerous disease, injury or poisoning is found dead or dies within 24 hours after the onset of terminal illness.1,2 Sudden cardiac death is most commonly defined as unexpected death from cardiac causes either without symptoms, or within 1 to 24 hours of symptom onset (different authors use different criteria).3 Carditis is the inflammation of the heart.4 Pancarditis, also called as perimyoendocarditis, is the inflammation of the entire heart: the pericardium, the myocardium and the endocardium.5 It may present acutely with congestive cardiac failure or sudden death.6,7 Various causes of pancarditis include Tuberculosis, Rheumatic fever, Systemic lupus erythematosus, Lyme disease etc.

There have been only a few published reports of carditis-related sudden deaths. One case involved autoimmune carditis5 and another case involved giant cell pancarditis.8 Here, I present an autopsy report for a case involving the sudden and unexpected cardiac death of a 21 year old male that was caused by granulomatous pancarditis likely due to Mycobacterium tuberculosis.

Case report

A 21 years old male who was an engineer, had fever, chest pain and breathlessness at home. He collapsed after sometime. He was taken to the hospital where he was declared brought dead. He was an occasional smoker and alcoholic. There was no history of Diabetes, hypertension, tuberculosis or any other disease. But previous history of occasional fever was present. There was no history of cough and significant weight loss. There was no family history of Diabetes, Hypertension, tuberculosis or any congenital heart disease. Autopsy was conducted at the mortuary of Victoria hospital, Bangalore Medical College and Research Institute, Bangalore. On external examination the dead body measured 170 cm in length, weighing 72 kg, moderately built and nourished. Rigor mortis was present all over the body. Post mortem staining was seen over the back of the body. There were no external injuries on the body. On internal examination, Heart weighed 300 gms. Right ventricle wall thickness measured 0.8 cm. Left ventricle wall thickness measured 1.1 cm. Interventricular septum thickness measured 1.2 cm. Heart valves were normal. Left coronary artery, left anterior descending artery, left circumflex artery and right coronary artery showed atherosclerotic changes.
but lumen of these coronaries were grossly patent. Lungs showed congestion and edema. Other internal organs were congested. On histopathological examination of the heart, granulomas were seen in the myocardium along with mixed inflammatory cells consisting of lymphocytes and histiocytes involving pericardium, myocardium and endocardium. This granulomatous pancarditis was likely due to Mycobacterium tuberculosis which led to sudden death. Associated atherosclerotic coronary artery disease was also seen in coronaries without obstructing the lumen.

**DISCUSSION**

The sudden death in apparently healthy young individuals is always a devastating and shocking event. In a morbidity and mortality weekly report of CDC (Centers for disease control and prevention) three sudden cardiac death cases, one woman and two men (ranging in age from 26 to 38 years) associated with Lyme Carditis in United States from November 2012- July 2013 are reported. The Lyme disease is a multisystem illness caused by Borrelia burgdorferi, a spirochete transmitted by certain species of Ixodes ticks.9

Osculati A et al in 2016 reported a case of sudden and unexpected death of a 15 year old boy due to pancarditis. They further investigated the etiology of the pancarditis. After considering both the clinical and histological data, they decided that the most likely etiology for the pancarditis in that case was rheumatic.10

Gold H in 1951 reported a case of sudden death of a 2 year old girl due to carditis. In this case the death was thought to be due to carditis of rheumatic origin.11 Jahangir A et al in United States, reported a case of fatal pancarditis associated with Human Granulocytic Ehrlichiosis (HGE) in a 44 year old man who was previously treated for presumptive Lyme disease.12

O’Leary D et al in 2019, reported a case of juvenile systemic lupus erythematosus (SLE) in a 15 year old Caucasian female presenting with an acute episode of pancarditis and multiorgan dysfunction who was successfully treated with systemic corticosteroids and cyclophosphamide.13

Kaplan R et al in 1981, reported a case of Aspergillus pancarditis in a 43 year old man which was associated with end stage nephrosclerosis. It caused cardiac arrest during general anaesthesia.14 Poolthanannant N et al in 2017, reported a case of chronic granulomatous pancarditis supposedly due to M. tuberculosis in a 29-year-old man who presented with fatigue, low grade fever for 6 months.15

In the present case, granulomatous pancarditis was found during autopsy in a 21 year old male engineer, who died suddenly. It was likely due to Mycobacterium tuberculosis. He was an occasional smoker and alcoholic. There was no history of Diabetes, Hypertension, tuberculosis or any other disease. But previous history of occasional fever was present. There was no history of cough and significant weight loss. There was no family history of Diabetes, Hypertension, tuberculosis or any congenital heart disease.

**CONCLUSION**

In this case report a young male who was an engineer, had fever, chest pain and breathlessness at home. He collapsed after sometime. He was taken to the hospital where he was declared brought dead. He was an occasional smoker and alcoholic. There was no history of Diabetes, hypertension, tuberculosis or any other disease. But previous history of occasional fever was present. There was no history of cough and significant weight loss. There was no family history of Diabetes, Hypertension, tuberculosis or any congenital heart disease. During autopsy on histopathological examination of the heart, granulomas were seen in the myocardium along with mixed inflammatory cells consisting of lymphocytes and histiocytes involving pericardium, myocardium and endocardium. This granulomatous pancarditis was likely due to Mycobacterium tuberculosis which led to sudden death. Associated atherosclerotic coronary artery disease was also seen in coronaries without obstructing the lumen. This case emphasises the requirement of essential investigations to detect this cardiac pathology and preventive measures to prevent sudden cardiac death in young individuals. It also highlights the role of meticulous autopsy and histopathological examination to detect this condition.

**Acknowledgements:** I would like to thank and acknowledge Dr. P. K. Devadass, Retd. Professor of Forensic Medicine, Ex. Dean & Director, and Dr. Dayanand S. Biligi, Professor & Head, Dept. of Pathology, Bangalor Medical College & Research Institute, Bangalore for their guidance, constant support and encouragement.

**Conflict of Interest:** None.

**Financial Assistance:** None.

**References**


How to cite this article:

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