



Pathology Biology Section - 2012

G22 Sudden Cardiac Death in a Young Male With History of Tako-Tsubo (Stress) Cardiomyopathy: A Case Report

Vadims Poukens, MD, Department of Coroner, Los Angeles County, 1104 North Mission Road, Los Angeles, CA 90033; and Lakshmanan Sathyavagiswaran, MD, Los Angeles County, 1104 North Mission Road, Los Angeles, CA 90033*

After attending this presentation, attendees will learn of a case showing unusual cardiac cause of sudden death in a young male due to stress cardiomyopathy and its clinicopathologic features.

This presentation will impact the forensic science community by educating the attendees on an uncommon disease entity which is usually associated with postmenopausal females, but can also affect younger males.

This case involved a 20-year-old Black male who had a history of a stab wound of the left chest in May 2010. In the hospital a chest tube yielded 750ml of blood. Chest x-rays and a CT scan showed a stab wound perforating left pectoral muscle with hydro- and hemothorax. There were no injuries to the mediastinum, including the heart, great vessels, trachea, and esophagus. The patient subsequently had chest pain. Cardiac enzymes and EKG showed ST elevation and elevated troponin. A cardiologist made a diagnosis of Tako-Tsubo cardiomyopathy secondary to the stress from his stab wound of the chest. He was discharged six days after the stab wound. Four months later he collapsed at home and was transported to a hospital, where he expired.

The autopsy showed that the decedent was 185cm tall, weighed 77.5kg, and had a linear one-inch scar in the left chest area consistent with the previous stab wound. Mild cardiomegaly (460g) with focal pericardial adhesions was noted. The heart had extensive apical transmural circumferential left ventricular and septal scarring (8 x 5 cm area) with thinning of the myocardial wall (1.0 – 0.5cm) and attached mural thrombus (5 x 5cm). The scarring far exceeded the territory of any single coronary artery. Dissection of the coronary arteries showed no significant atherosclerosis and no narrowing or stenosis. Toxicology analysis revealed the presence of carboxy-tetrahydrocannabinol in the blood. A cardiac pathologist was consulted. He reviewed autopsy findings, previous medical records, and microscopic slides, and he concurred with the diagnosis of Tako-Tsubo cardiomyopathy as a cause of death.

Tako-Tsubo (stress) cardiomyopathy is a non-ischemic cardiomyopathy in which there is a sudden temporary weakening of the heart muscle. Tako-Tsubo cardiomyopathy is a well-recognized cause of acute heart failure, lethal ventricular arrhythmias, and ventricular rupture. It most commonly occurs in postmenopausal women and is frequently precipitated by an emotionally mediated or physically triggered stressful event. Chest pain and dyspnea are typical presenting symptoms. Transient ST-segment elevation on ECG and a rise in cardiac biomarkers are common. Systolic dysfunction with marked left ventricle contraction abnormality, extending beyond the geographic territory of a single coronary artery, and absence of obstructive coronary artery stenosis are characteristic. The hallmark of this disorder is bulging of the apex of the heart with preserved function of the base. The echocardiographic appearance of this syndrome earned the name “tako tsubo,” or octopus trap, in Japan, where it was first described.

In conclusion, this case brings to light an unusual cause of sudden cardiac death in a young male. After literature review it is reported the youngest male (20-years-old) who was diagnosed with and died due to Tako-Tsubo cardiomyopathy.

Sudden Death, Takotsubo Cardiomyopathy, Stress Cardiomyopathy