H67 Non-Rheumatoid Fibrinous Pericarditis: A Medical Examiner Quest With an Update on Myocarditis and Use of Molecular Diagnostic Techniques

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After attending this presentation, attendees will have a better understanding of non-rheumatoid fibrinous pericarditis etiology, pathogenesis, and autopsy presentations.

This presentation will impact the forensic science community by highlighting the use of new molecular modalities and how these modalities apply to medical examiners.

The classic "bread and butter" appearance of fibrinous pericarditis has been described in rheumatic disease. Other infrequent causes vary from other immunological diseases such as Systemic Lupus Erythematosus (SLE), post myocardial infarct, uremia, tuberculosis, radiation effects, and bacterial and viral etiology. In most of the described cases, pericarditis occurs as a delayed complication.

Presented is a case of a 21-year-old White female who was seen in the emergency room to rule out pulmonary embolism for shortness of breath, chest pain, and light headedness. Pulmonary embolism was ruled out by negative findings at Computed Tomography (CT) scan and Ventilation/Perfusion (V/Q) scan. Her laboratory tests showed increased counts of acute inflammatory cells in her blood. Two days after her initial presentation, she was examined for lower back pain in an urgent care setting and released home after a negative cardiac work up. She died at home and the case was investigated by the medical examiner's office as a sudden death. Autopsy showed collection of serous fluid into the pericardial sac with a bread and butter appearance. Microscopically, pericardium showed acute inflammation with fibrinous exudates. Sections of heart showed areas of lymphocytic infiltration with acute fibrinous inflammation of the pericardium. Vasculitis was seen in the small heart blood vessels and was negative in other organs. No granuloma or necrotizing lesion was seen in microscopic sections of all organs, including the heart, ruling out a rheumatic arthritis.

The present study highlights the quest for non-rheumatic disorder as cause of pericarditis. Other uncommon common etiological entities were considered based on review of medical charts and clinical presentation. Special stains for bacterial and fungal elements performed on heart tissue were unremarkable. As foci of lymphocytic infiltration had more than 14 lymphocytes per mm^2 with myocyte necrosis; represented histological diagnostic for myocarditis (viral) based on Dallas criteria.[1] Molecular studies were performed on heart tissue blocks for identification of cardiotropic viruses. Human Parvo Virus B 19 (PVB19) was isolated from heart tissue blocks. In European studies, PVB19 was mainly detected in patients with biopsy-proven myocarditis.[2,3] The present case study highlights updates on pathophysiology, a diagnostic criteria for myocarditis along with the use of new molecular techniques for the detection of idiopathic cardiomyopathies in a medical examiner setup.

Reference(s):

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2. Ingrid Kindermann, MD et al. Update on Myocarditis. *J Am Coll Cardiol* 2012;59:779–92
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