

Death due to Myocarditis: A Diagnostic Challenge

Christoph G. Birngruber¹, Reinhard B. Dettmeyer²

¹Institute of Legal Medicine, University Hospital Frankfurt am Main, Johann Wolfgang Goethe University, Kennedyallee 104, 60596 Frankfurt am Main, Germany ²Institute of Legal Medicine, University Hospital Giessen and Marburg, Justus Liebig University, Frankfurter Str. 58, 35392 Giessen, Germany

Correspondence: *chbirngruber@gmx.de*; Tel.: + 49 696301 7551; Fax.: + 49 696301 5882

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Dear Editor,

with great interest, we read the case report about the sudden death of a young boy due to unknown chronic myocarditis: “Sudden Death of a Child Due to Unidentified Chronic Myocarditis: Autopsy Findings” (1). Without a doubt, the diagnosis of myocardial infections can be a challenging task in clinical medicine as well as in (forensic) pathology. The symptoms in the living may be unspecific and only in rare cases, the autopsy reveals signs of acute or chronic inflammation that are as strong as in the case presented.

Myocarditis may lead to unexpected death in otherwise healthy individuals, but accepting viral myocarditis as cause of death is in discussion since years, not only with regard to the sudden infant death syndrome “SIDS” (2-4). In cases of suspected myocarditis, a standardized and representative taking of samples, as performed by the authors, is essential. We propose taking tissue-samples from the following regions of the myocardium, with two samples each – one from the base region and one from the apex region (5): right ventricle (anterior wall), intraventricular septum, left ventricle (anterior wall), left ventricle (posterior wall) plus, at least one additional sample of the electric conduc-

tion system. At best, the samples from the myocardium should not be fixed more than 48 to 72 hrs. in neutral (phosphate-) buffered formaldehyde as longer fixation times or different solutions may lead to false-negative results when the use of immunohistochemistry is intended.

The post-mortem diagnosis of myocarditis needs a thorough histopathological examination by an experienced pathologist. As mentioned, the microscopic investigations should include samples of the cardiac conduction system, as post-inflammatory fibrosis as well as inflammatory infiltration of the conduction system might lead to fatal cardiac arrhythmia.

Of course, the cardiac findings have to be interpreted in the light of other macroscopic, microscopic and laboratory findings, including toxicology, but a thorough histopathological examination is the key to clarify the cause of death in suspected myocarditis. Further molecular genetic investigations, such as by (real-time) PCR, might be able to detect (cardiotropic) viruses and support the diagnosis of a virus-induced myocarditis, not only, but especially in cases of sudden unexpected death in infants and young adults (6).

Conflict of Interest: The authors declare that they have no conflict of interest.

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