



G54 Sudden Death Due to Mesothelioma of the Atrio-Ventricular Node

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After attending this presentation, attendees will gain much knowledge on sudden cardiac deaths, and understand that sudden cardiac deaths constitute a major health problem as one of the central topics in forensic literature. Although most cases are still attributed to complications of cardiomyopathies or coronary artery diseases, functional dysregulations are nowadays reported with an increasing frequency, due to the development of molecular autopsy. The role played by primitive cardiac tumors in sudden deaths is smaller as their prevalence is estimated to 0.05% of autopsies. Despite its rareness, mesothelioma of the atrioventricular node should be considered in the differential diagnosis of heart block in children or young adults.

This presentation will impact the forensic science community by informing attendees that the clinical presentation of a mesothelioma of the atrio-ventricular node is non-specific and may considerably vary from sudden death to an asymptomatic patient. This presentation is the third case of sudden death in patients with pace makers. The role played by primitive cardiac tumors in sudden deaths is small as their prevalence is estimated to 0.05% of autopsies. Among such lesions, mesothelioma of the atrio-ventricular node is rare and has only been reported about seventy-five times since its first description in 1911.

Case: A 35-year-old man was found dead in the early morning by one of his friends, while he was lying on his sofa, after having lived it up with some friends. The emergency physician could only certify death. Six years previously, the man had a syncopal episode while coming out from his truck. Electrocardiography showed a type I second degree atrioventricular block. Echocardiography was normal and no curable etiology could be found. He finally had a dual-chamber pacemaker fitted a few weeks later, which had been reliably effective and well tolerated up to his sudden death. Considering the young age of the man and the sudden character of his death, a medicolegal autopsy was ordered to determine the cause of death.

On external examination, the body was that of a young Caucasian man, 164 cm in height and 80 kg in weight. Nonspecific abrasions were detected on both the right and left frontal scalp. Toxicological investigations, including alcohol, were negative. At autopsy, the only gross abnormality was a left atrophic kidney, which was 24 g in weight. The heart weighted 420 g; there was no abnormality in the epicardium or in the valves. The coronary arteries only showed a few lipidic striae. One endocavitary pacemaker lead was found located in the atrial cavity, and was involved by noninfectious vegetations. The other pacemaker lead, which was observed in the right ventricular cavity, was also affected by some fibrosis. The myocardium showed fibrosis blocks and recent left subendocardic ischemia. Left and right ventricular walls were respectively 18 and 8 mm thick. Histopathological examination revealed an extensive infiltration of the atrioventricular node and of the his bundle trunk, corresponding to a benign tumor called a mesothelioma. This tumor consisted in tubular adenoid micronodules of various sizes, lined by mesothelial cells. In the lumens, pseudo colloid eosinophilic material was found. Some areas of the tumor also showed a moderate degree of fibrosis.

On the basis of these findings, arrhythmia-related death was diagnosed, directly caused by a mesothelioma of the atrioventricular node, despite the presence of a pace maker.

Discussion: The clinical presentation of a mesothelioma of the atrioventricular node is nonspecific and may considerably vary from sudden death to asymptomatic patient, including syncopal episodes related to severe atrioventricular block, with a possible familial occurrence discussed by Travers. No correlation was found in the literature between the size of the tumor and the symptomatology observed.

This explains that the precise incidence of such a disease is quite difficult to estimate, as much as diagnosis is most often done after death when an autopsy is ordered, only nine cases having been successfully treated antemortem.

Conclusion: This report is the third case of sudden death in patients with pace maker. Despite its rareness, mesothelioma of the atrioventricular node should be considered in the differential diagnosis of heart block in children or young adults.

Sudden Death, Mesothelioma, Atrio-Ventricular Node