G32 Undiagnosed Cardiac Sarcoidosis and Sudden Death: Report of 14 Cases

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After attending this presentation, attendees will be able to recognize the significance of the postmortem diagnosis of sudden death due to undiagnosed cardiac sarcoidosis in the field of forensic medicine.

Cardiac sarcoidosis is often clinically silent. It has been reported that sudden death is the most common manifestation of myocardial sarcoidosis. Our study has demonstrated that it is important for forensic pathologists to consider cardiac sarcoidosis in sudden unexpected deaths and to perform a complete autopsy including histotological examination of the regional lymph nodes in addition to the major organs.

The Office of the Chief Medical Examiner (OCME) for the state of Maryland documented 37 deaths caused by sarcoidosis from 1993 through January 2003. Of the 37 cases, 14 (37%) carried no previous diagnosis of sarcoidosis. Five of the 14 cases (36%) were witnessed to suddenly collapse (including 1 case of collapse after a non-fatal assault). The remaining 9 cases (64%) were found unresponsive at home. All 14 cases had a complete autopsy with histological and toxicological studies. The mean age of the14 patients at death was 40 years (± 5.9, range 3547 years). There was an equal distribution of sexes (7 males, 7 females) with a race distribution of 12 African Americans and 2 Caucasians. The majority of the cases (79%) were clinically silent. Only 3 (21%) of the cases had a prior cardiac history, including one who had biventricular hypertrophy with cardiac pacing, one with congestive heart failure and 1 case with non-specific cardiac complaints. Other known medical conditions included depression (2), obesity (2), diabetes mellitus (2), and asthma (1).

The diagnosis of cardiac sarcoidosis was based on microscopic findings of non-caseating granulomatous inflammation involving the heart and at least one other organ (lungs and/or regional lymph nodes), or with microscopic evidence of cardiac involvement and grossly enlarged regional lymph nodes in the absence of evidence of other infection or other granulomatous processes.

Mean heart weight for all 37 cases was 518 g (± 140, range 310-830 gm). Of the 14 cases of previously undiagnosed sarcoidosis, 13 (93%) showed cardiac involvement. Five of the 13 (38%) cases had gross evidence of cardiac sarcoidosis that ranged from pericardial, epicardial or endocardial plaques to fibrosis of the ventricles and septum. However, the majority, 62% (8/13) of the cases showed no significant gross pathological changes in the heart and the diagnosis of cardiac sarcoidosis was made on histological examination. None of the 13 cases showed cardiac involvement alone. Three of the 13 (23%) cases had no gross evidence of disease in any organs. Of the 13 cases, non-caseating granulomatous inflammation was identified in the lung (13/13 cases), lymph nodes (5/5 cases with histological examination), liver (4/13 cases), spleen (3/13 cases), and kidney (2/13 cases). One patient died of extensive pulmonary sarcoidosis without cardiac involvement.

This report emphasizes the significance of the postmortem diagnosis of sudden death due to previously undiagnosed cardiac sarcoidosis. The implications of the medicolegal autopsy including histological examination are addressed.

Sarcoidosis, Sudden Death, Forensic Autopsy

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