G8 Three Unusual Neuropathologic-Related Causes of Sudden Death

Dennis J. Chute, MD, and Kari Reiber, MD, Dutchess County Medical Examiner's Office, 387 Main Street, Poughkeepsie, NY 12601*

The goal of this presentation is to make the audience familiar with three unusual neuropathologic entities that may contribute to sudden death in the medicolegal setting.

This presentation will impact the forensic community and/or humanity by demonstrating cases that exemplify the range of neuropathologic maladies that may contribute to sudden, unexpected or suspicious deaths highlight the asset a neuropathology consultation provides and emphasize the utility of postmortem examinations in the elucidation of medical diseases and co-morbidity.

The autopsy findings of three medicolegal cases of sudden death associated with uncommon neuropathologic findings of which the general forensic pathologist may not be familiar are reviewed. Two cases were unexpected deaths that involved relatively young patients with histories of seizure disorders. Neurologic disorders were suspected but the exact relationship to the cause of death was not defined until postmortem examination. The other patient was elderly, thus, not an unexpected death; however, because of circumstances surrounding the scene investigation an autopsy was performed and an unexpected rare neuropathologic abnormality was found.

Case 1 was a 43-year-old male with a history of congenital nevi of his head, torso, and extremities. The patient also suffered from hypertension, chronic alcoholism, and a poorly controlled grand mal seizure disorder of five years duration prior to death. He was discovered unresponsive in a bathroom and autopsy revealed a malignant melanocytic tumor diffusely infiltrating the leptomeninges and focally the cortex of the superior gyrus of his left temporal lobe. The cause of death was attributed to a seizure due to a malignant melanoma of the temporal lobe arising in the context of neurocutaneous melanosis.

Case 2 was a 57-year-old female with a history of mental retardation, clumsiness, incoordination, and a childhood seizure disorder that developed as a sequel to chronic infantile lead poisoning. She was discovered unresponsive and asystolic on her bedroom floor. Twelve days prior to her death she had a witnessed fall down a staircase, and fractured her left leg. The cause of death was a pulmonary thromboembolism due to deep venous thrombosis status post left leg fracture. Autopsy also revealed profound atrophy and gliosis of her cerebellum consistent with residual damage from chronic lead poisoning. Although peripheral nervous system involvement in chronic lead poisoning is well known, less so is marked cerebellar atrophy with subsequent incoordination as occurred in this case.

Case 3 was a 75-year-old female with a history of chronic osteo- arthritis, hypertensive atherosclerotic cardiovascular disease, and depression and, six month duration of neck and head pain. She was found dead in bed under suspicious circumstances so a postmortem examination was performed. The cause of death was due to acute bacterial leptomeningitis at the cervico-medullary junction, acute inflammation of the adjacent dura mater and the tissue of her upper cervical spinal column associated with subluxation and instability of her atlanto axial (AA) joint. The case compares to what is known as Grisel's syndrome, a subluxation of the AA joint due to inflammation-induced ligamentous instability associated with an infectious/inflammatory process of the head or neck. Grisel's syndrome is more often found in children than adults; it may produce spinal and neurologic complications and, rarely, death.

Neurocutaneous Melanosis, Lead Encephalopathy, Grisel's Syndrome

 ** Presenting Author*