



G118 Fatal “Shaken Adult” Syndrome? A Case Report of an Elderly Patient

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After attending this presentation, attendees will be aware that shaking an elderly person's head might be fatal, causing brain damage in a way similar to shaken infants, and that a subdural hematoma of unknown origin in the elderly should raise the possibility of abuse.

This presentation will impact the forensic science community by raising awareness of the possibility of the existence of a new forensic pathology entity which might be called “Shaken Granny Syndrome.” This will participate in a more global goal which is to increase the awareness of prevalence of elder abuse, clearly underestimated, in the forensic community.

An 81-year-old man suddenly lost consciousness and collapsed after a 45 minute quarrel with his wife and her lover, who reported to the police that they shook him back and forth several times, by grabbing his clothing, his shoulders and arms, without any blow to the head. Despite swift rescue action, he was pronounced dead at the scene.

He had been prescribed anticoagulants for a pulmonary embolism for years and an MRI, taken six months before death for behavior and memory disorders, showed extensive grey matter atrophy.

The autopsy performed the next day showed only recent bruising of the anterior chest and upper limbs. There was no hematoma of the inner aspect of the scalp, no fracture of the skull. A “fresh” subdural hematoma of eighty milliliters, non-adherent to the dura matter and located in the left hemisphere, was found without brain contusion at the macroscopic exam. Besides a non-occlusive coronary atherosclerosis, the other internal organs were unremarkable. Toxicology was negative (presence of treatments at therapeutic levels).

Basic histological examination showed a neutrophilic infiltrate of the bruising, thus considered as peri-mortem. The subdural hematoma was mainly composed of non-lysed red blood cells, which was consistent with an acute and recent onset. A minor subarachnoid hemorrhage and some cortical “flame-shaped” hemorrhages were found, suggesting that the subdural bleeding was traumatic. There was, however, no focal contusion of the brain and, therefore, no argument in favor of a direct trauma of the head. Histological examination of the other organs was noncontributory.

Selected brain sections were prepared for complementary immunohistochemical examination using β Amyloid Precursor Protein (β -APP) antibody, showing Diffuse Axonal Injury (DAI) scattered in different brain areas. Eyeball collection not being (so far) a routine procedure in adults, was impossible to check for retinal hemorrhages (the interest of which will be discussed during the presentation, focusing on specificity concerns). Cause of death was classified as “traumatic brain lesions and hemorrhage,” and manner of death as “homicide.”

In this case, trauma was considered the result of acceleration-deceleration forces due to brutal movements of the head secondary to violent shaking.

The Shaken Baby Syndrome is well known, but a literature review showed that the “Shaken Adult Syndrome” is still to be described. Only one case of a young adult who died from brain damage after his head was violently shaken during police custody was found during this study.¹ In the absence of the research of DAI, this case was questioned.²

Because of anticoagulant prescriptions, weakness of cervical muscles and some extra space between the brain and the cranial bone due to cerebral atrophy (with tensioning of the bridging veins within the subdural space), this case shows some similarities with the conditions found in the physiopathology of the “Shaken Baby Syndrome”.

These conditions being often met in the oldest patients, the concept of “Shaken Elderly or Granny (rather than adult) Syndrome” might be relevant. This is of special interest when one considers that in some series, 10% of subdural hematomas of the elderly are “spontaneous”, i.e., of unknown origin, the hypothesis of physical abuse being then exceptionally (or never) raised in the publications.³

Further studies are needed to better characterize the prevalence of subdural hematoma in elder abuse and the percentage of cases related to “shaking.”

References:

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2. Geddes JF, Whitwell HL. Shaken adult syndrome revisited. *Am J Forensic Med Pathol.* 2003 sept;24(3):310-1.
3. Asghar M, Adhiyaman V, Greenway MW, Bhowmick BK, Bates A. Chronic subdural haematoma in the elderly—a North Wales experience. *J R Soc Med.* 2002 juin;95(6):290-2.

Subdural Hematoma, Elder Abuse, Shaking