



## Pathology Biology Section – 2007

### **G9 Ruptured Cerebral Artery Aneurysm Mimicking Home Invasion and Assault**

*Albert Y. Chu, MD, MHS\*, and Luis A. Sanchez, MD, Harris County Medical Examiner's Office, 1885 Old Spanish Trail, Houston, TX 77054*

After attending this presentation, attendees will understand a case of a 48-year-old white female with blunt force injuries who was found nude and semi-conscious in her ransacked residence. While the case was initially investigated as a possible home invasion and assault, the "victim" was ultimately diagnosed with a ruptured left posterior communicating artery aneurysm before dying.

This presentation will impact the forensic community and/or humanity by demonstrating that cases of ruptured cerebral artery aneurysm may rarely present with psychotic and/or violent behavior and that this behavior may in turn result in scene findings and injuries that may initially be confused with criminal activity and awareness of psychotic and/or violent behavior as an unusual presenting symptom of ruptured cerebral artery aneurysm and its potential to mimic assault at the scene.

A 48-year-old white female with a history of hypertension was found at her residence during a welfare check performed by her landlord and her best friend. The decedent was nude, semi-conscious, and "appeared to have been beaten." In addition, the house, which according to the landlord was typically kept very clean and tidy, was "trashed." EMS was activated, and the decedent was taken to the hospital.

Police arrived on the scene and investigated the case as an assault. The doors to the residence were locked but not secure and showed no signs of forced entry. Disarray at the scene was limited to the living room, kitchen, dining room, and bathroom; the two bedrooms were tidy. In the living room and dining room, various pieces of furniture and the television had been overturned, and broken dishes and glassware were strewn about. A lampshade had been torn to pieces. In the kitchen, the door of the oven had been removed and was located in an adjacent hallway, a bathrobe was in the refrigerator, and pieces of chicken were scattered throughout. Vacuum cleaner parts were in the washing machine. In the bathroom, vomit was on the floor and a can of insect repellent was in the toilet. No valuables were missing from the house.

At the hospital, the decedent was noted to have numerous contusions and abrasions, predominantly on the extremities. Toxicologic screening for drugs of abuse and alcohol performed the day of admission was negative. A sexual assault examination was also negative, and ultimately no evidence of semen was detected in any of the swabs or clothing collected. A computed tomography scan detected subarachnoid hemorrhage at the base of the brain, and angiography detected a ruptured left posterior communicating artery aneurysm. Despite a coil embolization procedure, the decedent never became coherent and expired nine days after arrival to the hospital. Because the attending physician thought that the decedent's blunt force injuries may have contributed to death, the decedent was brought to the Harris County Medical Examiner's Office for autopsy.

Autopsy examination confirmed the presence of subarachnoid hemorrhage associated with the treated left posterior communicating artery aneurysm. Injuries were limited to cutaneous injuries of the torso and extremities detected externally; no internal evidence of blunt force or penetrating trauma was identified. Additional findings included evidence of the decedent's known hypertensive cardiovascular disease including cardiomegaly with concentric left ventricular hypertrophy and myocyte hypertrophy and renal arteriosclerosis. The cause of death was classified as ruptured cerebral artery aneurysm due to hypertensive cardiovascular disease, and the manner was classified as natural.

Cerebral artery aneurysms are relatively common and have been reported as incidental findings in up to five percent of all autopsies. Typically, these aneurysms are asymptomatic unless they rupture, in which case most symptoms are due to the resulting subarachnoid hemorrhage. The classic presentation is that of "the worst headache in my life"; other common symptoms include loss of consciousness, seizures, meningeal signs, nausea and vomiting, drowsiness, dizziness, and cranial nerve deficits. Psychiatric symptoms, while previously reported, are unusual. This rare presentation of ruptured cerebral aneurysm resulted in a criminal investigation of possible assault.

**Cerebral Artery Aneurysm, Psychosis, Assault**