



## Pathology/Biology Section - 2014

### **G114 Sudden Death Due to Ruptured Pseudoaneurysm of Femoral Artery in Injected Drug Abusers: A Case Series**

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After attending this presentation, attendees will understand some principles of an emerging as well as a serious complication of pseudoaneurysm in injected drug abusers.

This presentation will impact the forensic science community by making attendees aware of an emerging problem in injected drug abusers, as most of the reported cases of pseudoaneurysm found in scientific literature are secondary to iatrogenic intervention. The presentation will highlight the case history and autopsy findings of these cases with relevant photographs of this catastrophic event in injected drug abusers.

Substance or drug abuse has broad dimensions worldwide, particularly in the young. In the United States in 2009, its prevalence was about 8.7% among the 12-years-old-and-above. In India, cannabis, heroin, and pharmaceutical drugs are the most frequently abused drugs. Abuse with intravenous injections of analgesics such as dextropropoxyphene is reported from many states, as it is easily available at a tenth of the cost of heroin. Injected drug abuse is associated with a wide variety of manifestations. These range from bleeding from the site of injection, frequent infections, ulceration, scarring, deformity, gangrene, chronic obstructive pulmonary disease, cardiac failure, and hepatic failure/insufficiency. With increased injected drug abuse, especially intra-arterial (as with heroin and easily available pentazocine), the complications of arterial diseases become increasingly important.

Pseudoaneurysm in injected drug abusers occurs due to traumatic damage to the vessels caused by repeated injections and infections. It most commonly involves the femoral artery and requires intensive management. When medical attention is delayed, the victim is prone to massive bleeding from the ruptured artery, resulting in death. Although pseudoaneurysms in injected drug abusers are known, there is a paucity of autopsy studies on sudden deaths due to its rupture. Reported are four such cases with spontaneous rupture of pseudoaneurysm in young males who were all injectable drug abusers. Two of the victims were found dead on the roadside, one died at the hospital, and another died at his residence. The pseudoaneurysm of the femoral artery in all four cases could be grossly demonstrated at autopsy and also by histopathological examination. The duration between the terminal event of rupture of pseudoaneurysm and death in all four cases was within 24 hours, signifying the suddenness and high fatality of this condition.

Forensic scientists should be aware of this emerging problem in injected drug abusers. Most of the reported cases of pseudoaneurysm found in the scientific literature are secondary to iatrogenic intervention. Once such a pseudoaneurysm ruptures externally, there is acute vascular collapse due to the large volume of blood loss which can be avoided by early recognition and intensive management. Rehabilitation of drug abusers is also recommended.

#### **Femoral Artery Pseudoaneurysm, Injected Drug Abuse, Sudden Death**