



E95 Auxillary Artery Injury: A Rare Case of Death by Severe Blood Loss Due to an Accidental Fall

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Learning Overview: The goal of this presentation is to present a rare case of accidental sharp force death, showing how a thorough forensic pathology methodology, including death scene investigation, autopsy examination, and toxicological analyses, are pivotal to detect the manner of death.

Impact on the Forensic Science Community: This presentation will impact the forensic science community because of the rarity of this manner of death, regarding the epidemiological data about accidental death due to sharp forces.

Forensic pathologists are often asked to investigate deceased victims of stab wounds, as sharp force injury accounts for 10%–20% of clinical forensic examinations, and sharp force trauma represents the second most common cause of injury investigated in forensic practice. Moreover, homicide by sharp force (stabbing) is one of the most common causes of death in European countries, involving mostly domestic or interpersonal conflict. Stabbing as a suicide method constitutes a low percentage of all suicides, 2% to 3%. Accidental death due to sharp force is even rarer (0%–3%) and is usually caused by an impact or a fall into a different type of glass surface, with the victim generally being hit by a sharp-edged shard of glass, striking body parts with enough force to cause death. Death due to stabbing is usually caused by exsanguinating incisions to organs or large blood vessels, leading to hemorrhagic shock.

This study presents an unusual case of a man who was found dead at home, lying on a chair in a pool of blood with hundreds of glass fragments close by. During crime scene investigation, external examination of the body revealed a tear in the clothing at the right armpit. After removing the T-shirt, a 9cm-long wound was observed perfectly consistent with the tear. No other lesion was identified at the external examination during judiciary inspection. Analysis of the crime scene identified a shattered vase as the source of the glass fragments responsible for the armpit lesion.

Full autopsy was performed. At the external examination, the armpit wound was located 29cm away from the suprasternal notch and 40cm away from the xiphoid process; the wound presented clean-cut edges and the medial end presented a fishtail-like split. It was 3cm deep, involving pectoral muscles and surrounding fat tissue.

The internal examination did not show any gross alterations of organs. Dissection of the right arm musculocutaneous layers were performed showing hemorrhagic infiltration of the muscles, fat, and neurovascular bundle. On the posterior-lateral wall of the distal axillary artery, a 0.8cm linear full-thickness lesion was found. Histological study of the axillary artery confirmed the macroscopical finding. Further, toxicological analyses on blood, urine, and gastric fluid samples showed an alcohol concentration exceeding the toxic level, respectively 2.56 g/L, 3.55 g/L, and 2.48 g/L. Death was due to massive blood loss resulting from a lesion to the right axillary artery by glass fragments. A thorough analysis of scientific literature on death by sharp force injuries, due to axillary artery lesion, showed no results.

Sharp Force, Axillary Artery Injuries, Accidental Death