



H120 Common Cutaneous Injuries Found in Drowning Deaths

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After attending this presentation, attendees will be more familiar with cutaneous injuries that may be seen in drowning deaths. This presentation will explore possible mechanisms underlying these injuries, particularly focusing on cutaneous injuries that occur while the decedent is submerged in water.

This presentation will impact the forensic science community by identifying the frequency of cutaneous injuries in drowning deaths and will provide a reference of cutaneous injuries that may occur to aid forensic pathologists in determining the possible causes of commonly recognized injuries in drowning victims.

Cutaneous injuries are often found in suspected drowning deaths. These injuries are thought to occur as the body drags across the bottom of the body of water or as the body comes into contact with rocks, marine life, underwater objects, and even boats.¹ For example, bodies that have traveled a significant distance in a river may demonstrate grinding down of tarsal and carpal bones due to dragging of the hands and feet along the bottom of the body of water.² Classically, these cutaneous injuries are distributed over the face, hands, forearms, knees, and feet as submerged bodies have a tendency to be in a “head down” position.¹ It can become difficult for a forensic pathologist to determine whether these injuries were caused ante- or postmortem, as various types of injuries can occur while submerged in a body of water.^{3,4} This also includes cutaneous injuries due to postmortem animal predation.⁴

To date, this study is not aware of previous studies that quantified the frequency and types of cutaneous injuries seen in drowning deaths. In order to accumulate data, this study drew from a web-based database of deaths investigated by medical examiners/coroners from multiple counties in Michigan and Indiana from 2008 to 2017. Cases were identified by use of the term “drown” in the cause-of-death field and further narrowed down by location of death being a lake, pond, or river. A review of the autopsy photographs and the evidence of injury section of the autopsy reports identified cases with cutaneous injuries. All 65 identified cases occurred in freshwater. Approximately 71% of the deceased individuals presented with evidence of cutaneous injuries, including, but not limited to, abrasions, lacerations, and contusions. Injuries on the body were found most frequently on the head (49%) and extremities (43%), but were also found on the trunk (19%) and neck (3%). Some of these injuries appeared to be from postmortem animal activity.

Determining the timeline and cause of cutaneous injuries is an integral part of the medicolegal postmortem examination. This becomes especially difficult in the setting of a drowning, when the body can acquire postmortem injuries from a variety of sources, some of which may mimic antemortem trauma. Members of the forensic community should always remain cognizant of the fact that cutaneous injuries are frequently associated with drowning deaths and, in many cases, may be caused postmortem, with no correlation to the immediate cause of death.

Reference(s):

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4. Hayashi, T., Higo, E., Orito, H., Ago, K., and Ogata, M. (2015). Postmortem wounds caused by cookie-cutter sharks (*Isistius* species): An autopsy case of a drowning victim. *Forensic Science, Medicine, and Pathology*. 11(1), 119–121.

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