H56 How (Not) to Pop a Cyst at Home: Heart and Lung Perforation After Needle Insertion Into the Chest Wall

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Learning Overview: The goal of this presentation is to bring awareness of careful scene examination in similar cases and to underscore the importance of postmortem imaging.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by bringing awareness of the unusual circumstances that warrant careful examination of the scene, alerting the autopsy personnel to be cautious.

Self-inflicted foreign bodies in the heart and chest cavity are rarely encountered in medical practice. There have been mainly a few case reports of cardiac injuries inflicted by sewing needles or similar objects, either self-inflicted or accidental in the literature. The majority of the reported cases involve psychiatric history in the affected individuals. The reported accidental cases of needles finding their way to the heart are mainly iatrogenic, occurring, for example, after a needle decompression of a suspected traumatic pneumothorax in the pre-hospital setting. The incidence of similar cases in the forensic setting is unknown. A case of a young man who was attempting to self-treat a cyst with a piercing needle at home and lost control of the needle is presented.

The decedent was a 31-year-old male with a history of developmental and bipolar disorder who lived with his parents. On the day of the incident, his mother awoke to him screaming that he was trying to “pop” a cyst on his chest, but the “needle went all the way in.” He was bleeding from the chest and collapsed to the floor. On his computer, there was an instructional video for “popping” cysts. An empty wrapper from a piercing needle was discovered on the floor of his bedroom. Examination of the body at the scene revealed a bleeding skin defect in the sternal area, but the needle was not observed.

Autopsy showed a large abrasion on the right side of the chest with a central 1/16" puncture site and multiple clustered superficial punctures on the lateral and medial aspects. Per office protocol, a Computed Tomography (CT) scan was performed that showed right hemothorax, hemopericardium, and right pneumothorax and a 2" long needle that was completely embedded in the right third intercostal space. The tip of the needle projected at the level of the right atrial auricle, passing through the middle lobe of the right lung.

The cause of death was perforating injuries of the right lung and heart, and the manner of death was classified as accident.

While there were clear indicators in this case that a piercing needle was used, the needle was not visible externally. Careful examination of the scene, postmortem imaging, especially CT, was invaluable in revealing the exact location of the potential sharp object before it was dislodged and also alerted the autopsy personnel to be cautious.

Hemopericardium, Hemothorax, Self-Inflicted