

## Horticultural Homicide

### *Stab Wound to the Chest Masquerading as Impalement by Rose Bush*

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**Abstract:** Instruments that create stab wounds are required to possess tips of sufficient strength and rigidity to breach the integrity of the skin. Knives, the most common weapons used to create stab wounds, have cutting edges that cleave the skin, leaving unabraded margins. On rare occasions, blunt objects are driven with sufficient force to pierce the skin and become impaled within the body. The morphologic differences between the cutaneous injuries and wound tracks of stab wounds from sharp objects and impalement with blunt ones provide clear delineation of the two. However, elements from the scene and obscuring hemorrhage can make initial differentiation difficult. The authors report the death of a 59-year-old woman found near the entryway steps of her home with a stab wound to her chest. Law enforcement did not discover any weapons. Investigation focused on blood around and on a broken rose bush planted near the steps with the belief that the decedent had fallen upon the vegetation. When presented with information that conflicts with autopsy findings, careful consideration of proposed weapons and thorough examination of the wound are required to discount confounding material.

**Key Words:** stab wound, laceration, penetrating blunt trauma, impalement  
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Impalement injuries occur when a rigid blunt object penetrates the body. These injuries are uncommon and when fatal are usually encountered as the result of a fall onto a blunt object or intrusion of a blunt object into a vehicle during a motor vehicle collision. The wounds typically have the features of blunt force trauma, and when the impaling object is within the wound track, there is little confusion as to the etiology of the injury. Difficulties can arise, however, if the impaling object has been removed from the wound track and the wound has features that resemble other types of injury. We report a case of a stab wound to the chest that initially presented as penetrating blunt force trauma, and discuss fatal wood impalement injuries with review of the pertinent English peer-reviewed literature and recreation of the wound track in lungs.

### CASE REPORT

A 59-year-old woman wearing a short-sleeved T-shirt and shorts was found dead in a pool of blood on her driveway. She was lying face down with her feet near the bottom of three concrete steps leading to the side door of her house and with her right side near a rose bush that was planted next to the house (Fig. 1). The rose bush appeared to have been broken in half from the decedent falling on top of it. The police hypothesized that the decedent fell and impaled herself on the rose bush. It was believed that she then pulled herself off of the rose bush and terminally collapsed



FIGURE 1. Home entryway. Arrow depicting rose bush.

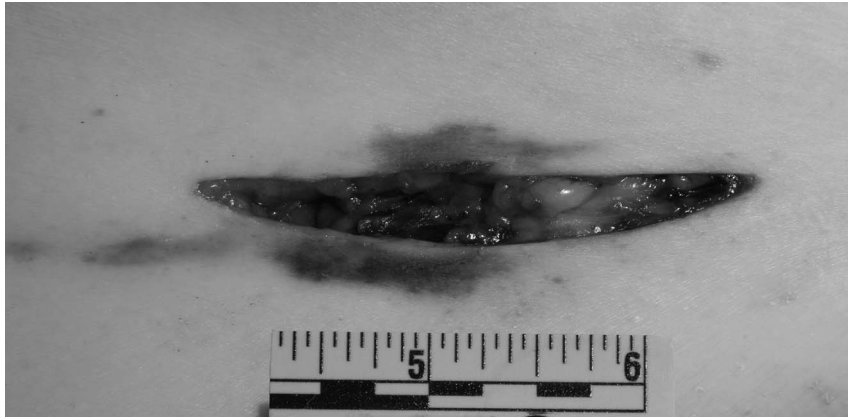
onto the driveway. Further investigation revealed that she had a history of chronic kidney failure, congestive heart failure, and frequent falls. A fall the previous year resulted in a left temporal craniotomy. She enjoyed gardening and had expressed a wish earlier in the evening to go outside and cut some flowers. No sharp implements were found near the body.

Postmortem examination revealed a stab wound on the lateral right chest (Fig. 2). There were irregular abrasions on the skin superior and lateral to the wound and an irregular contusion on the skin inferior to the wound. The stab wound measured 2.5 inches in length, and its edges were not abraded and did not have tissue



FIGURE 2. Stab wound to lateral chest.

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**FIGURE 3.** Reapproximated stab wound.

bridging. Reapproximation of the wound edges revealed that the blunt edge measured between 0.0625 and 0.125 inch in width and was located at the medial end of the wound (Fig. 3). The wound track proceeded from this injury through the right lateral third through sixth ribs and interlobular septa between the right middle and lower lobes of the lung, and penetrated a segment of the right pulmonary artery for an estimated depth of 7 inches (Fig. 4). The lung injury was cleanly incised without tearing or fraying of the edges, and the wound track was absent of debris or wood. There was an associated right hemothorax.

The only other injury was a 0.25-inch abrasion on the posterior right forearm (Fig. 5). Additional autopsy findings included the prior left temporal craniotomy with the bone flap screwed in place with no underlying defect of the brain, moderate coronary artery disease, and nephrosclerosis. Postmortem toxicology showed therapeutic levels of clonazepam and hydrocodone and the presence of metabolites of marijuana in the femoral blood.

The rose bush in question was uprooted, potted, and brought to the Wayne County Medical Examiner's Office (Fig. 6). The broken and bloodied stem thought by police to be responsible for the fatal injury measured 11 inches in length and 0.75 inch in diameter. The stem was only partially broken and had folded back upon itself, forming a stake that measured 5 inches long and 1.5 inches in diameter. The entire stake had a roughened surface, and the broken end was ragged, splintered, and covered with

blood (Fig. 7). Of note, next to the stem of interest was a second broken stem. This second stem was covered with thorns, was broken at the same height as its neighbor, also had a broken and jagged end, but was entirely free of blood.

Creation of a lung injury from a penetrating broken rose bush stem of similar width to the one suspected of causing the chest wound in the decedent was performed in the morgue (Fig. 8). Figures 9 and 10 illustrate the debris and wood pieces within the wound track and the torn and ragged edges produced from the stem, respectively.

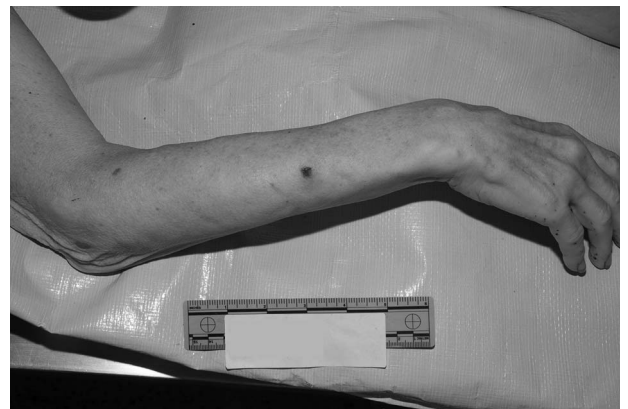
## DISCUSSION

Considerable force is required for a rigid blunt object to penetrate into and impale the body.<sup>1</sup> These impaling injuries are usually seen in the head and neck area as the result of a fall onto a blunt object, in the chest or abdomen as the result of intrusion of a blunt object into a vehicle during a motor vehicle accident, or in the anus and genitals as a result of sexually motivated activities.<sup>2</sup> Penetrating blunt force trauma is not common, and there are a few case reports in the English peer-reviewed literature of impalements involving a blunt wood object in which the individual survived.<sup>3-6</sup> Death from impalement by a rigid blunt object is even more rare, and there are even fewer case reports of death from impalement by a blunt wood object.<sup>7,8</sup>

In order for a blunt object to penetrate into the body, it must first pierce the skin, resulting in a laceration. The appearance of the laceration from impalement is dependent on the nature and shape of the blunt object, angle of impact, movement of the victim, and anatomical location of the wound.<sup>2,5</sup> The classic features of



**FIGURE 4.** Lung wound track with pulmonary artery injury.



**FIGURE 5.** Right forearm abrasion.



FIGURE 6. Uprooted rose bush.

a skin laceration, though, are expected and include abraded or contused wound edges and strands of tissue bridging the tear in the skin. Both Karger et al<sup>7</sup> and Perdekamp et al<sup>8</sup> reported



FIGURE 7. Broken rose stem with dried blood.

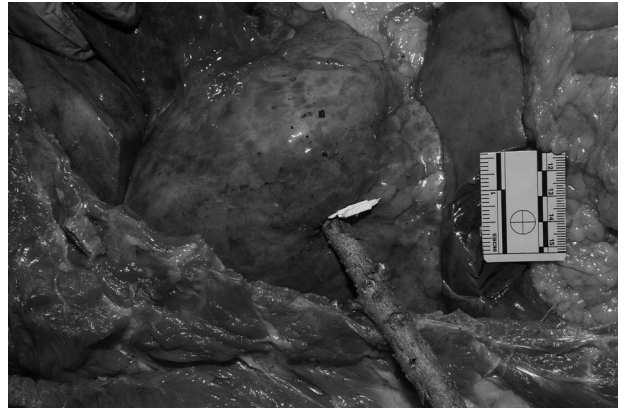


FIGURE 8. Recreated penetrating wound in lung.

lacerations on the chest and mandible from impalement with a wood object. The chest wound in the presented case lacked abraded wound edges and tissue bridges, and instead had the features of a stab wound with clean edges and both a blunt and sharp end. There was abrasion and contusion on the skin adjacent to the stab wound, as has been described in stabbings that use extreme force or depth of the blade to its heel or hilt.

Once an impaling blunt object pierces the skin, it penetrates and tears into the internal structures and organs, resulting in laceration of the tissue. Romero et al<sup>6</sup> reported laceration of the lung from impalement with a wood object. Debris and small pieces of wood are present within the wound track when the penetrating blunt object is made of wood and have been reported from multiple authors.<sup>3,5-7</sup> Recreation in our office of impalement of lungs from a rose bush stem produced torn and lacerated lung parenchyma and dirt and wood within the wound track. The lung injury in our case lacked debris and tearing, and instead had the features of tissue that had been cut.

Fatal impalement injuries are not commonly encountered in forensic settings and can be a source of confusion when the penetrating blunt object has been removed from the wound track before the victim was found, transported to the morgue, or examined by a forensic pathologist.<sup>8</sup> Another source of confusion occurs when the impaling object is made of wood, as it is difficult to detect radiographically,<sup>3,4</sup> which is the imaging option available in most forensic settings. In cases involving penetrating trauma from a blunt wood object that is not left in the wound track, the forensic pathologist must rely on the expected features of the skin and tissue wounds to correctly determine the etiology of the injury. We

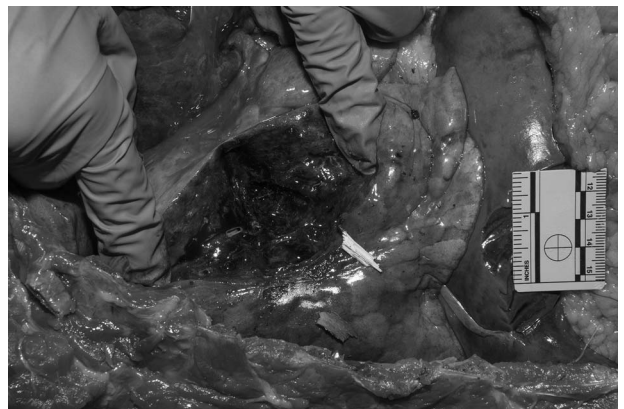
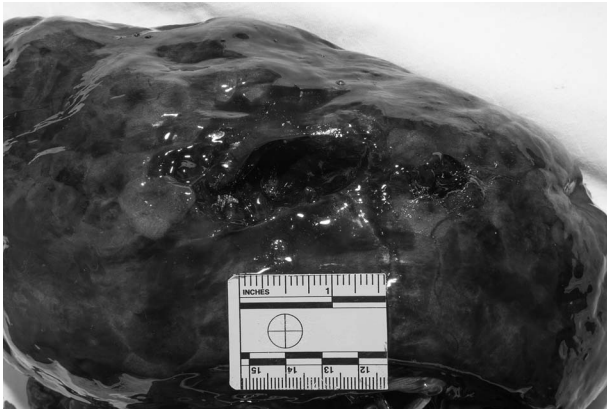


FIGURE 9. Debris and wound pieces in lung wound track.



**FIGURE 10.** Lung injury with ragged wound edges.

report a case of a gaping chest wound that initially presented as penetrating blunt trauma, as the scene suggested that the victim had fallen onto a rose bush stem next to her house. The skin and lung injuries, however, clearly had the typical features of a stab wound.

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