



Historical Vignette of Infamous Gunshot Injury to Spine: “An Ailment not to be Treated”?

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Key words

- Gunshot
- Sociopolitical impact
- Spine

Abbreviations and Acronyms

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Citation: *World Neurosurg.* (2015) 84, 5:1441-1446.

<http://dx.doi.org/10.1016/j.wneu.2015.03.037>

Journal homepage: www.WORLDNEUROSURGERY.org

Available online: www.sciencedirect.com

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INTRODUCTION

The prevalence and unfavorable socioeconomic consequences of spine injury remain a concern in modern medicine. Gunshot injury is the third most common cause of spine injury in the United States (20, 21) and worth special mention in view of the present sociopolitical scenario.

In this article, we highlight the infamous gunshot spinal injuries of a few eminent personalities across multiple centuries and their sociopolitical impact in context with the development of modern medicine. The unfortunate fate of these notable patients, who, in all probability, had the access to best available medical treatment in their respective era, can only remind us about their not-so-famous counterparts with this devastating injury.

FIRST DESCRIPTION OF SPINE INJURY

Imhotep, the physician to Pharaoh Zoser III, in 5000 BC, first described paralysis owing to vertebral fractures or dislocation (9). In 1862, Egyptologist Edwin Smith reproduced 6 cases describing spine and/or spinal cord injury, from ancient Egyptian literature. In 1 case, he concluded with a declaration of treatment strategy of that time “an ailment not to be treated” (5, 18). Ironically this

The increasing prevalence and gloomy socioeconomic consequence of spine injury remain a concern in modern medicine. In this article, we highlight the infamous gunshot spinal injuries of a few eminent personalities across multiple centuries and their sociopolitical impact in context with the evolution of modern medicine. The role of available medicine in these victims was not more than a mere watcher, thus substantiating an infamous quote from ancient literature that describes spine injury as “an ailment not to be treated.”

nihilistic concept remained unchanged for multiple centuries.

FIRST USE OF BULLET

The firearm made its first appearance in 13th century in China. In 1326, the earliest known European picture of a gun appeared in a manuscript by Walter de Milemete (11). During the next centuries, guns evolved with their destructive capability and have become a major cause of civilian and military mortality.

16TH CENTURY AND AMBROISE PARE

Ambroise Pare, the father of surgery, came to fame when he challenged the established authority Giovanni da Vigo (1450?–1525) on the treatment of gunshot wounds. He used a mixture of egg yolk, oil of roses, and turpentine instead of cautery to alleviate the pain of the wound of the victims. His famous quote “I dressed him, God healed him” after he cured a wounded soldier has remained one of the favorite quotes among doctors across the globe for past 3 centuries. Although he did mention spine injury, a direct description of gunshot injury of the spine was not found (3).

18TH CENTURY

Amid all reports of agonizing outcomes, a very peculiar event occurred in the Battle of Amenenburg in 1762. Probably for the first time in history, surgeon Andre Louis removed a bullet from lumbar spine of a victim. The patient not only survived, but also regained functional movement in the lower extremities. This is simply

outstanding, even in today’s advanced set up, completely contradicted the beliefs on spinal injury at that time (18).

19TH CENTURY

1805: Gunshot Injury of Lord Admiral Sir Horatio Nelson

Sir Nelson (1758–1805) remained one of the greatest acclaimed British naval hero in history. He lost one eye and one arm in the course of his numerous naval victories. Finally, on October 21, 1805, 12 miles off Cape Trafalgar, he was shot by a French marksman (Figure 1). The bullet pierced him from above his left shoulder and made its way through the midline, probably injuring the lower cervical or upper thoracic spinal cord, ribs, lung, and major vessels. Sir Nelson could anticipate the inevitable when he noticed “All power of motion and feeling below my chest are gone.” Mr. William Beatty, the ship’s surgeon, after immediate careful examination, confirmed the worst “My Lord, unhappily for our country, nothing can be done for you.” The corpse of Sir Nelson returned to England in a large shipboard cask, embalmed in brandy and given a hero’s burial (5, 9). A monument at Trafalgar Square in London not only mark the feat achieved by him but also reflects the helpless role of available medicine of that time.

1881: An Attempt to Assassinate James A. Garfield

James Abraham Garfield (1831–1881) was born on November 9, 1831, in rural Ohio. He overcame tremendous poverty to become a general in the Union Army, a college



Figure 1. Wounded Lord Admiral Sir Horatio Nelson. (Courtesy of Museum of Liverpool.)

professor, and a congressman before his 33rd birthday. Renowned for his intellect, eloquence as a speaker, and undaunted integrity, it was not a surprise when he defeated the Democratic nominee Winfield Scott Hancock to become the 20th President of United States.

On July 2, 1881, he reached Baltimore and Potomac train station (now the site of the National Gallery of Art), on his way to attend the silver jubilee celebration of his graduation from Williams College in Williamstown, Massachusetts. After taking a few steps into the station he was shot twice at his back by Charles Guiteau, a psychotic and religious fanatic, from a 0.44-caliber “bulldog” revolver. Several physicians soon arrived and to the dismay of the president, all of them placed their unwashed hand and instrument to his wound. Dr. D. W. Bliss, a surgeon in the Third Regiment in the Michigan Infantry and widely recognized as an expert in gunshot wounds, took the charge of principle physician thereafter (4, 25).

President Garfield survived much longer than his countrymen, media, and attending physicians anticipated. But agonizingly speculating the location of the bullet and its removal by any means seemed more important than the president’s overall health.

One interesting event, a reflection of this nationwide craze, occurred when Simon Newcomb and Graham Bell (later discovered telephone) turned up with their “Induction balance” to locate the bullet on July 27th. But all those efforts failed and President Garfield headed toward inevitable. He lost almost a hundred pounds in the next 2 months, the primary wound enlarged, and multiple satellite abscesses appeared. Finally he developed chill and anterior chest pain on September 17 and died on September 19 (Figure 2A). The

autopsy suggested “The wound was over the 10th intercostal space $3\frac{1}{2}$ inches to the right of the spinous processes. Both the 11th and 12th vertebrae were fractured near the entrance wound. The T12–L1 disc was nicked, with the bullet then passing through the L1 body from the right side. The bullet exited the vertebra anteriorly and to the left, traveled $2\frac{1}{2}$ inches, and came to rest behind the pancreas, where it was found surrounded by a firm cyst containing a small amount of purulent material” (4) (Figure 2B).

The potential role of the surgeons in developing the sepsis was not acknowledged. But Dr. Bliss, who initially boasted that “If I can’t save him, no one can.” had to face severe criticism. Guiteau, rubbed the salt, by submitting a sarcastic plea that the president had died not as a consequence of the wounds inflicted by his gun, but as a result of the surgeons’ malpractice (4, 25)!

Analyzing the event today, one has to agree Dr. J. Marion Sims, who summarized the effort with this philosophical statement: “The president’s surgeons did all that men could do, all that the present state of science would permit... He had not the least chance of recovery under any circumstances or any treatment” (10).

The Museum of the Armed Forces Institute of Pathology has a display specimen of the former president’s shattered vertebra.

COULD THE CONSEQUENCES BE DIFFERENT? MILESTONES IN MEDICAL HISTORY IN THE 19TH CENTURY

In this context, it is worthwhile to discuss some major development in medicine at almost same time.

Joseph Lister (1827–1912), a surgeon from Glasgow, made a monumental contribution

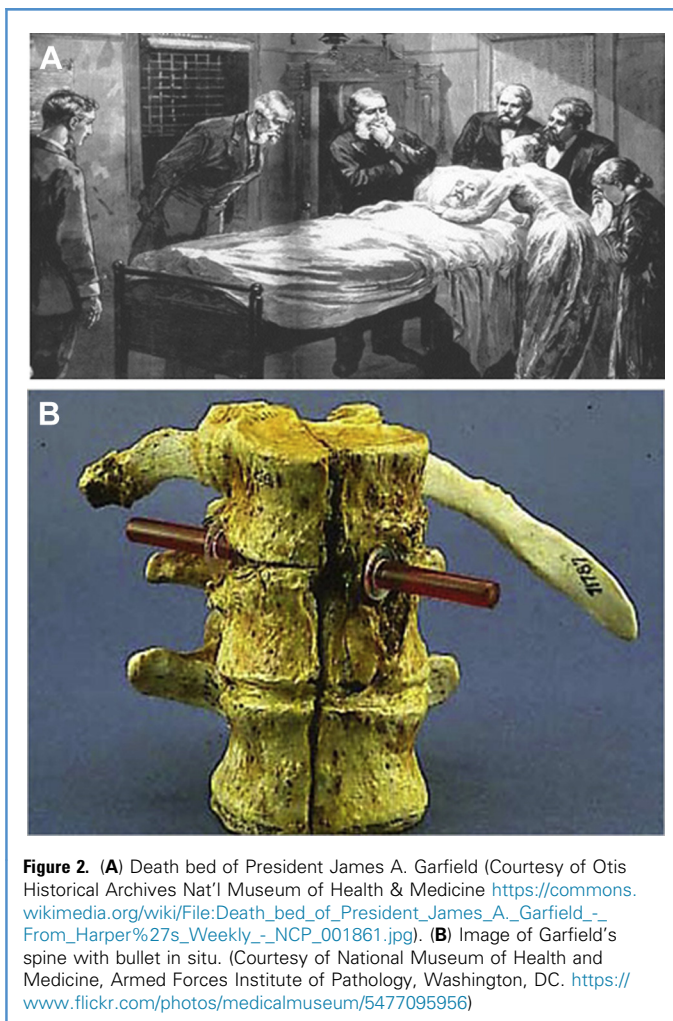


Figure 2. (A) Death bed of President James A. Garfield (Courtesy of Otis Historical Archives Nat'l Museum of Health & Medicine https://commons.wikimedia.org/wiki/File:Death_bed_of_President_James_A._Garfield_-_From_Harper%27s_Weekly_-_NCP_001861.jpg). (B) Image of Garfield’s spine with bullet in situ. (Courtesy of National Museum of Health and Medicine, Armed Forces Institute of Pathology, Washington, DC. <https://www.flickr.com/photos/medicalmuseum/5477095956>)

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