

Luck is the Best Prescription for a Metal Rod Through the Skull



By Jamie Wells, M.D. — April 18, 2019

Penetrating traumas take on a unique trajectory. They can be erratic, asymmetrical and variable in depth and extent. So real estate in the body, and good fortune, matter most.



By PublicDomainPictures.net [1]

A 21-year-old man fell down a well while doing repairs and construction work only to sustain an otherwise catastrophic head trauma involving a metal rod piercing through his skull. The images (seen [here](#) [2]) depicting him awake and alert underscore how miraculous the series of events were for him to survive the harrowing tale of this unintentional injury as well as the treatment that followed. In the hospital, he endured surgical removal for which his neurosurgeon revealed just how lucky he was given how close the object was to a vital blood vessel. [According to his doctor](#) [2], he is “doing fine.”

While it is being [reported](#) [2] he had low blood pressure at a certain interval, he is being closely observed for post-operative complications (read [here](#) [3]). Blood pressure is of significant importance when managing brain surgeries. Too low, then the brain is inadequately perfused and deprived of oxygen. Too high, and a bleeding injury can occur. Because brain cells don't regenerate like peripheral nerves can, damage is done and determined by extent and location. The central nervous system is the command center for regulating this crucial vital sign (to learn more, read [Do Vital Signs Wrong and Pay Ultimate Price](#) [4]). Monitoring for infections like meningitis, bleeding or issues with intracranial pressure is par for the course.

Though rare, not unheard of

In January 2018, the [news media](#) [5] featured a 13-year old boy had his skull pierced by a 6-inch screw in a treehouse-building incident. According to his neurosurgeon, [Dr. Alan Cohen](#) [6], at Johns Hopkins Hospital, "He was a millimeter away from having himself bleed to death." So, the fact he was already home after being emergently airlifted and having brain surgery for an almost "catastrophic" event was also miraculous. As the chief of pediatric neurosurgery stated, one more millimeter and the outcome in this example might have been devastating. With the brain, its vital structures and vasculature, there is very limited room for error.

In [September 2018](#) [7], recovery was expected for a [10-year old boy](#) [8] who, while being attacked by yellow jackets in a tree house, fell to the ground only to be impaled by a meat skewer that entered through his face diving deep into his skull to the back of his head. Seemingly catastrophic given the vital anatomy along its path, the piercing foreign object managed to bypass critical arteries and structures like the eye, brain and spinal cord. According to University of Kansas Hospital Director of Endovascular Neurosurgery [Dr. Koji Ebersole](#) [8], who treated the patient,

"I have not seen anything passed to that depth in a situation that was survivable, let alone one where we think the recovery will be near complete if not complete... That's one in a million."

How is survival possible?

Penetrating injuries wreak havoc on the body, how much depends on location, location, and location (see [here](#) [5] on surviving freak accidents). Because each type of wound takes on a unique trajectory that can be erratic, asymmetrical and variable in depth and extent, real estate matters most in terms of what high value locations were damaged by the primary insult as well as its reverberating effects.

In these scenarios, luck was definitely on their side - which should never be undervalued. In each case, the foreign body notably managed to remain adjacent to a host of critical tissues. Though the close proximity was perilous and required intricate, focused, and controlled removal so as not to cause more harm on the way out, a successful plan could be implemented.

It is not uncommon in penetrating injuries for the object itself to be compressing the mutilated vasculature, thereby stopping bleeding. In these types of traumas, moving the patient and

attempts at removal without a systematic intervention elaborately devised can be devastating to fatal. These particular examples demonstrate one moment of good fortune after another.

For instance, a solid linear item without jagged edges could be fortuitous in a given situation and the initial damage on the way in might spare key blood vessels. A bullet can fragment thereby compounding the destruction – to learn more about the negative chain reaction of such traumas review [this piece](#) ^[9] on the shooting of Rep. Steve Scalise.

How a person is managed at the scene and properly transferred for emergent care contributes to the degree of expansion of damage. Avoiding secondary injury beyond the original mishap is essential to increasing chances for survival. Movement of an impaled projectile or its premature removal when unaware of the extent of injuries can in certain scenarios permit excessive blood loss or escalate the problem. For example, if a damaged critical vessel is being compressed by the foreign body itself, then maintaining this state until proper assessment and subsequent informed intervention can be done safely can make all the difference in the world.

Usually, discerning this requires imaging modalities only available in a hospital where treatment can be performed in a more controlled setting by multi-disciplinary teams.

Modern medicine a crucial factor

For such dangerous occurrences, the luck of the times can't be overlooked when it comes to achieving such positive outcomes. Due to the mechanisms of injury, anesthesia and medication advances, progress in monitoring, infection control measures, therapeutic interventions and diagnostic imaging modalities, the medical teams could outline the exact route of the items for superior visualization. Let's not forget the evolution of knowledge and medical expertise and the grueling years of intensive training and dedication undertaken in such disciplines.

As a result in the situation of the meat skewer, a number of precautions could be taken to minimize local bleeding or more damage when moved. The medical team was vast, exhaustive and composed of highly specialized ear, nose and throat physicians in addition to neurosurgery who could, through a series of efforts, dissect away the prominent vessels like the vertebral and carotid arteries so as to protect them from injury. Puncture of these vessels can lead to increased risks of infection, bleeding for which neurological disturbances can ensue and death.

Infection risks are always a consideration in these types of dirty wounds. Living in the post-discovery of antibiotics era, for instance, is another contributing factor to a desirable outcome as is being around in a period of such advanced drug discovery. Preventions for infection can be implemented and proactive monitoring of compromised body systems can avert intensification of losses.

In the end

When it comes to long-term disability or death from such misfortunes, those in gravest peril experience a mechanism of injury whose greatest toll is on premium real estate. Location. Location. Location. Where in the body? What organs are affected? Which blood supply?

And when the brain is involved, luck is always welcomed.

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- [1] <https://www.publicdomainpictures.net/en/view-image.php?image=120909&picture=metal-rods-background>
- [2] <https://www.foxnews.com/health/man-miraculously-survives-after-rod-pierces-through-skull>
- [3] <https://www.acsh.org/news/2017/03/08/manuel-noriega-brain-bleed-coma-after-brain-surgery-10965>
- [4] <http://www.acsh.org/news/2017/01/06/do-vital-signs-wrong-and-pay-ultimate-price-10689>
- [5] <https://www.acsh.org/news/2018/01/27/when-it-comes-surviving-freak-accidents-real-estate-matters-12482>
- [6] <https://www.cnn.com/2018/01/26/health/screw-skull-accident/index.html?sr=twCNN012618screw-skull-accident0937AMStoryGal>
- [7] <https://www.acsh.org/news/2018/09/13/when-impaired-luck-and-real-estate-matter-most-13406>
- [8] <https://nyp.st/2x9qRjK>
- [9] <https://www.acsh.org/news/2017/07/06/rep-steve-scalise-intensive-care-over-%E2%80%99new-concerns-infection%E2%80%99-11518>