

## **UC Irvine**

### **Journal of Education and Teaching in Emergency Medicine**

#### **Title**

Glass Foreign Body Hand Radiograph

#### **Permalink**

<https://escholarship.org/uc/item/1126s9nk>

#### **Journal**

Journal of Education and Teaching in Emergency Medicine, 3(2)

#### **ISSN**

2474-1949

#### **Authors**

Ehsani-Nia, Hamid

Bucher, Joshua

#### **Publication Date**

2018

#### **License**

[CC BY 4.0](#)

Peer reviewed

## Glass Foreign Body Hand Radiograph

Hamid Ehsani-Nia, DO\* and Joshua Bucher, MD\*

\*Rutgers University Robert Wood Johnson School of Medicine, Department of Emergency Medicine, New Brunswick, NJ

Correspondence should be addressed to Hamid Ehsani-Nia, DO at [hamid.ehsaninia@rutgers.edu](mailto:hamid.ehsaninia@rutgers.edu)

Submitted: December 9, 2017; Accepted: February 13, 2018; Electronically Published: April 15, 2018; <https://doi.org/10.21980/J8W92H>

Copyright: © 2018 Ehsani-Nia, et al. This is an open access article distributed in accordance with the terms of the Creative Commons Attribution (CC BY 4.0) License.

See: <http://creativecommons.org/licenses/by/4.0/>



**History of present illness:** A 27-year-old female sustained an injury to her left hand after she tripped and fell on a vase. She presented to the emergency department (ED) complaining of pain over the laceration. Upon examination, patient presented with multiple small abrasions of the medial aspect of the left 5<sup>th</sup> digit that are minimally tender. Additionally, she has one 0.5cm linear laceration of the medial aspect of the 5<sup>th</sup> metacarpal with severe tenderness in the area and palpable underlying foreign body.

**Significant findings:** Left hand plain radiography demonstrated a subcutaneous foreign body medial to the 5<sup>th</sup> metacarpal that is radiopaque, trapezoidal in shape, and measures approximately 11mm x 3mm.

**Discussion:** Laceration repairs are amongst the most common procedures in the emergency department; however, consideration for foreign body is often underdiagnosed. Imaging is performed in only about 11% of all traumatic wounds in the ED.<sup>1</sup> Of those injuries relating to the hand that are subsequently imaged, about 15% are found to have a foreign body.<sup>2,3</sup> Additionally, it is estimated that foreign bodies are present in 7% to 8.7% of all wounds caused by glass objects.<sup>4,5</sup> Glass is among the most common foreign bodies in lacerations, and fortunately they are radiopaque and relatively well visualized radiographically. It has been demonstrated

that 2mm glass foreign bodies have a 99% detection rate with radiography, and 1mm glass foreign bodies an 83% detection rate.<sup>6</sup> Patient perception of foreign body has a positive predictive value of 31%, making it a poor source in influencing clinical decision-making to obtain wound radiographs.<sup>3</sup> Clinicians should have a high suspicion for foreign body in lacerations, particularly those caused by glass, and utilize close physical examination and imaging for evaluation.

**Topics:** Radiography, glass, foreign body, trauma.

#### References:

1. Hollander JE, Singer AJ, Valentine S, Henry MC. Wound registry: development and validation. *Ann Emerg Med.* 1995;25(5):675-85. doi: 10.1016/S0196-0644(95)70183-4
2. Potini VC, Francisco R, Shamian B, Tan V. Sequelae of foreign bodies in the wrist and hand. *Hand (N Y).* 2013;8(1):77-81. doi: 10.1007/s11552-012-9481-6
3. Steele MT, Tran LV, Watson WA, Muelleman RL. Retained glass foreign bodies in wounds: predictive value of wound characteristics, patient perception, and wound exploration. *Am J Emerg Med.* 1998;16(7):627-30. doi: 10.1016/S0735-6757(98)90161-9
4. Karcz A, Korn R, Burke MC, et al. Malpractice claims against emergency physicians in Massachusetts: 1975-1993. *Am J Emerg Med.* 1996;14(4):341-5. doi: 10.1016/S0735-6757(96)90044-3
5. Orlinsky M, Bright AA. The utility of routine x-rays in all glass-caused wounds. *Am J Emerg Med.* 2006;24(2):233-6. doi: 10.1016/j.ajem.2005.06.008
6. Courter BJ. Radiographic screening for glass foreign bodies--what does a "negative" foreign body series really mean? *Ann Emerg Med.* 1990;19(9):997-1000. doi: 10.1016/S0196-0644(05)82562-4