

Lower Extremity Sandblast Injury: A Rarely Seen Injury Mechanism in the Civilian Population

A. Archer BSHA; N. Horsley MD, MPH; C. Lawson MD, FACS; J.B. Burns DO, FACS

Background

Blast injuries are complex and multi-factorial in their pathophysiology. Despite the possibility of devastating consequences, blast injuries are unfamiliar to many clinicians in the civilian setting. This is a case report of a patient who suffered a lower extremity injury while using an industrial sandblaster. In addition to the direct penetrating injury from sand particles, the proximity of the patient to the high-pressure sandblaster nozzle resulted in a blast injury. This blast injury presented as a closed degloving, or Morel-Lavallee lesion, which is uncommon and can easily be mistreated, leading to infection and further disability.

Case Report

31-year-old male with no known previous medical problems who presented to a tertiary trauma center in South Central Appalachia after suffering a lower extremity injury while using an industrial sandblaster. In addition to the direct penetrating injury from sand particles, the proximity of the patient to the high-pressure sandblaster nozzle resulted in a blast injury.

Following assessment, identification, and confirmation of the Morel-Lavallee lesion via radiographic imaging, this patient underwent debridement surgery, wound vac therapy, and antibiotic treatment before being discharged home with no major physiologic or neurologic deficits. This report highlights the importance of assessing for closed degloving injuries when presented with blast injury traumas in the civilian trauma setting, and outlines the process utilized for assessment and treatment.

Discussion

Blast injuries resulting in a closed degloving (Morel-Lavallee lesions) can often be mistaken for much more common penetrating/blunt force injuries. As a result, opportunities for timely and appropriate intervention can be missed. Improper assessment and treatment of Morel-Lavallee type injuries can result in avoidable infection and/or tissue necrosis, leading to severe disability. Definitive treatment for Morel-Lavallee type lesions is unclear with mixed results in the current literature. However, surgical intervention with debridement and irrigation is shown to have superior outcomes compared to nonsurgical treatments.

