

# Morel-Lavallée Lesion on the Dorsal Side of the Left Hand in a Male High



## School Football Athlete: A Case Study

Cauhorn JR, ATS, Lichtman JE, ATS, Geraghty RP, MAT, LAT, ATC, Beer JA, MA, LAT, ATC Dougal ZJ, MA, LAT, ATC  
Manchester University, North Manchester, IN

### Purpose

The purpose of this case study is to provide athletic training clinicians with a better understanding of the uncommon injury, the Morel-Lavallée Lesion (MLL). Providing appropriate management and acute care of this injury can improve patient outcomes and recovery.

### History

A Morel-Lavallée lesion, a rare condition, was first seen in 1853 by a French physician, Maurice Morel-Lavallée.<sup>1</sup> This condition is caused by a shear force to the skin resulting in an internal degloving of the subcutaneous plan from a disruption of capillaries causing effusion containing hemolymph necrotic fat.<sup>1</sup>

Approximately 95% of all MLL occur at the locations of the thigh, pelvis, knee, and greater trochanter.<sup>2</sup> This injury is typically a result of an automobile accident or extensive surgery.<sup>1</sup>

### Patient History

A Morel-Lavallée lesion developed on the dorsal side of the left hand on a 16 year old high school football player during a competition. The athlete's hand was on the ground when it was struck by the opponents cleat. The shear force that was applied to the hand caused the skin to separate from the fascia where the blood pooled in the hand instantly.

### Differential Diagnosis

The athletic training staff immediately evaluated the athlete after injury. There was significant inflammation on the athlete's dorsal side of his left hand. The initial first look at the injury appeared as a compound fracture of the 3<sup>rd</sup> and/or 4<sup>th</sup> metacarpal. Possible fractures of the hamate and/or capitate carpal bones were suspected. A severe contusion was another possible differential diagnosis.

### Images



**Top image:** Immediately after injury

**Bottom image:** Three days post injury

### Diagnosis

The final diagnosis, decided by the team physician, was a Morel-Lavallée Lesion to the dorsal side of the left hand. The diagnosis was made because of the shearing force applied to the hand from the opponents cleat. The traditional diagnosis of this injury is magnetic resonance imaging (MRI) and/or diagnostic ultrasound.<sup>1</sup> The team physician has previous experience diagnosing Morel-Lavallée Lesions, thus diagnostic imaging was not required.

### Treatment

A Morel-Lavalee Lesion is commonly treated, in severe cases, with aspiration or surgery.<sup>3</sup> In this case surgery was not needed and the patient was treated with immediate cold-water immersion for 20 minutes after initial injury. For the remainder of the competition, the patient placed an ice pack on his hand. The patient was able to return to play on the following Monday. A high density closed cell foam pad was placed on the dorsal side of the hand to prevent further damage. The patient made a full recovery but still has tingling to the 5<sup>th</sup> phalange.

### References

1. Nair A, Nazar PK, Sekhar R, Ramachandran P, Moorthy S. Morel-Lavallée lesion: A closed degloving injury that requires real attention. *Indian J Radiol Imaging*. 2014;24(3):288-290.
2. Vanhegan I, Dala-Ali B, Verhelst L, Mallucci P, Haddad F. The Morel-Lavallée Lesion as a rare differential diagnosis for recalcitrant bursitis of the knee: case report and literature review. *Case Reports In Orthopedics*. January 2012;:1-5
3. Rha EY, Kim DH, Kwon H, Jung S-N. Morel-Lavallée lesion in children. *World J Emerg Surg*. 2013;60(8)