



## Management of a Morel-Lavallée Lesion: A Multi-Disciplinary Perspective on a Rare Soft Tissue Injury

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### Background

The Morel-Lavallée lesion was first described in 1863 as a closed degloving injury, where the superficial tissues are separated from the deeper fascial layer by a strong shearing force, but without causing an open wound as well [1,2]. These lesions are rare, and most commonly associated with high-energy blunt force trauma, such as road traffic collisions [3]. This separation of tissue layers results in the disruption of blood vessels and lymphatic's, resulting in the formation of a fluid- or blood-filled cavity [2]. The interruption of blood flow to the superficial tissues can result in skin necrosis, similar to open degloving lesions [3].

Clinically, these lesions are classically and most frequently seen overlying the greater trochanter, or other regions with mobile superficial tissues and a tough underlying fascia [2]. They are commonly described as fluctuant, tender, enlarging lesions and can present within hours, or up to years after the initial insult [2,3]. Due to the rarity of the lesion, patients presenting with these symptoms are often misdiagnosed, leading to a significant delay in accurate diagnosis and treatment. This time delay is often thought to make later management more difficult [4].

Where clinical suspicion is strong, MRI is the investigation of choice for this lesion [5]. Depending on whether the lesion is acute or chronic, imaging may show an ill-defined heterogeneous lesion, or a smooth, homogenous fluid-filled lesion with a well-defined capsule [2].

There is currently no consensus regarding the treatment of the Morel-Lavallée lesion. Several different treatment methods have been proposed, based on systematic literature reviews [2,4,5] or surgeon experience at large trauma centers [3]. These include less invasive methods, such as percutaneous aspiration or sclerodesis, and open surgical techniques, like full debridement of the skin or closure of the cavity with quilting sutures [5]. Recent systematic reviews have recommended an algorithmic approach to treatment based on chronicity of the lesion, size of the lesion, symptomatology, presence of a capsule or a combination of these factors [2,4,5]. We discuss a case of late presentation of Morel-Lavallée lesion and successful conservative treatment.

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Received Date: 29 Jul 2020

Accepted Date: 05 Sep 2020

Published Date: 10 Sep 2020

#### Citation:

Misky A, Sadr AH, Mosahebi A.

Management of a Morel-Lavallée Lesion: A Multi-Disciplinary Perspective on a Rare Soft Tissue Injury. *Clin Surg.* 2020; 5: 2939.

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### Case Presentation

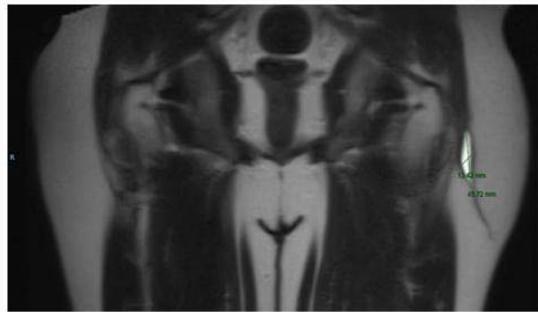
A 25-year-old male patient was referred to the plastic surgery clinic for a review regarding surgical management of his Morel-Lavallée lesion. Three years prior to his plastic surgical review, the patient had fallen from 10 ft height onto his left thigh, hitting granite floor while abroad. He did not seek medical attention at the time.

Over one year after the initial insult, he was noted to have developed a painful swollen area over his left greater trochanter and was referred to the general surgical team at his local district general hospital. An MRI scan was organized and showed an approximately 132 cm<sup>3</sup> fluid collection over his fascia lata at the level of the greater trochanter with features consistent with a Morel-Lavallée lesion. Presence or absence of a capsule was not commented on Figure 1. Following radiological diagnosis, ultrasound guided drainage of the collection was organized, which drained 30 ml of straw-colored liquid.

Six months following aspiration the patient continued to complain of swelling and was referred to our clinic for a plastic surgical opinion. A repeat MRI scan showed no significant interval change between the initial MRI prior to the drainage and the repeat MRI immediately prior to review (Figure 2). At the plastic surgical review there was no significant difference between the circumference of his two thighs and a small area of prominence over his left greater trochanter was thought to be caused by fat necrosis rather than a significant collection. As the patient was unmolested by further discomfort, a mutual decision was made to discharge him from plastic surgical care.



**Figure 1:** MRI both thighs at initial presentation.



**Figure 2:** MRI both thighs at second presentation.

## Discussion

The above case highlights several important aspects of the identification and management of Morel-Lavallée lesions. While the lesion is undoubtedly rare, with some publications reporting only a 0.7% incidence in road traffic collisions [3], other authors speculate the incidence associated with pelvic trauma may approach 10% [2]. With this in mind, it is important for all surgeons with regular involvement in trauma to look for and be ready to diagnose Morel-Lavallée lesions, as well as refer promptly for appropriate multidisciplinary evaluation and management of this soft tissue injury.

While there is no clear consensus in the treatment of these lesions, there is little controversy about their management when there is significant overlying skin necrosis, associated deep infection, or presence of an open fracture - these require open surgical debridement and occasional extensive plastic surgical reconstruction [3]. Management becomes more difficult and contentious when

lesions are small or chronic in nature. Recent literature reviews suggest that chronic lesions, such as that in the above presentation are relatively poorly managed conservatively and require either surgical management or sclerodesis for successful resolution of symptoms [2,4,5].

In the above case, percutaneous drainage seemed to have little to no effect on the lesion. This result generally correlates with findings in the available literature [3,4]. It is however important to note that the patient's symptoms resolved with no further treatment, perhaps signifying that ultrasound guided drainage was unnecessary in this case. At the time of publication, the patient has not represented to the plastic surgical service with return of symptoms, suggesting long term resolution with no treatment is a viable possibility for small lesions.

## Conclusion

According to our review of the literature, as this rare soft tissue injury is most often associated with hip trauma, these patients most often present to the orthopedic service. We believe that prompt recognition and appropriate referral for plastic surgical review is necessary in all cases of Morel-Lavallée lesions, to avoid inappropriate procedures, increased morbidity, or conversion to a chronic lesion.

There is no clear consensus in the management of small lesions; therefore a plan should be decided on a case-by-case basis. It is, however worth considering conservative management in the first instance. Like with other complex traumatic lesions, we hope raising awareness of the importance of multidisciplinary collaboration will result in better result and ultimately improved patient care.

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