Case report

Conservative treatment of a chronic Morel-Lavallée lesion: a case report

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ABSTRACT

AIM: The Morel-Lavallée lesion was first described by a French physician in 1863. These lesions are post-traumatic closed soft-tissue degloving injuries characterized by separation of the subcutaneous fat from the underlying fascia induced by violent shear stress. Morel-Lavallée lesions are commonly associated with high-energy trauma and predominantly seen in women. The aim of this case report is to increase awareness to these relatively rare but potentially dangerous and frequently missed post-traumatic lesions. CASE PRESENTATION: A 51-year old woman was repatriated to the emergency department one week after a high-energy traffic accident abroad. Approximately one-month post trauma, during hospitalization on our traumatology department, the patient complained of local pain on the lateral side of the right distal thigh. Clinical evaluation showed a tumor on the distal thigh characterized by a fluctuant mass during palpation. Ultrasound examination described a Morel-Lavallée lesion of circa 9.2x7.5cm. Since the pain only appeared during exercise, a conservative treatment by occasionally bandaging, watchful waiting and careful monitoring were initiated. The symptoms slowly improved and conservative treatment was maintained. CONCLUSION: Morel-Lavallée lesions are post-traumatic closed soft-tissue degloving injuries that are often missed to diagnose. These lesions can be complicated by skin necrosis and infection. There are currently no evidence-based guidelines in the medical literature on the treatment of Morel-Lavallée lesions. Overall, we agree that Morel-Lavallée lesions need close monitoring and evaluation until final healing occurs. Early recognition and optimal management can save patients from undesirable complications and need for complex open surgical treatment.

KEYWORDS: Morel-Lavallée lesion; closed degloving injury; distal thigh

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INTRODUCTION

The Morel-Lavalllée (ML) lesion was first described in 1863 by a French physician Morel-Lavallée (1). The actual incidence of the ML lesion is unknown, although Tseng et al. reported a 1.7% ratio in circa 1100 consecutive pelvic fractures (2). Epidemiology taught us that ML lesions are predominantly seen in women (3). ML lesions almost always occur after direct trauma to the pelvis, thigh or knee and are commonly associated with high-energy trauma (4). Morel-Lavallée lesions are post-traumatic closed soft-tissue degloving injuries characterized by separation of the subcutaneous fat from the underlying fascia. After violent shear stress between the hypodermis and the firmly secured fascia, a suprafascial space is created in which fluid easily accumulates (5,6). The "false" space is filled with hemorrhaged blood, fat, lymphatic tissue and necrotic debris. After the acute phase, a fibrotic pseudo capsule is formed which can lead to a chronic

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Figure 1. Clinical photo of the Morel-Lavallée lesion on the lateral side of the right distal thigh.

fluid collection enhancing the risk of infection or tissue necrosis (7,8).

The aim of this case report is to increase awareness to these relatively rare but potentially dangerous and frequently missed post-traumatic lesions.

CASE PRESENTATION

A 51-year old woman without relevant medical history was repatriated to the emergency department one week after a high energy traffic accident abroad. A truck hit the patient when she was walking across the street. First aid and polytrauma care

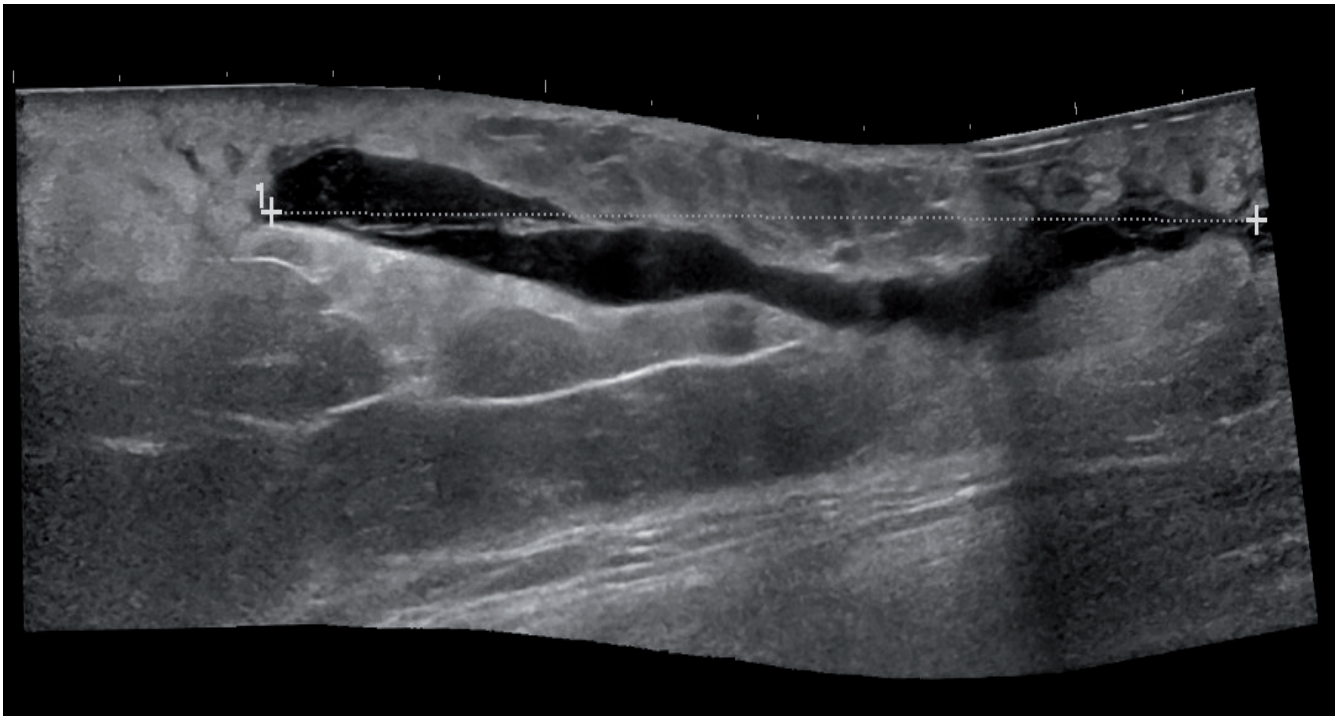

Figure 2. Ultrasound examination of the lesion measured cranio-caudally (circa 9.2 cm).

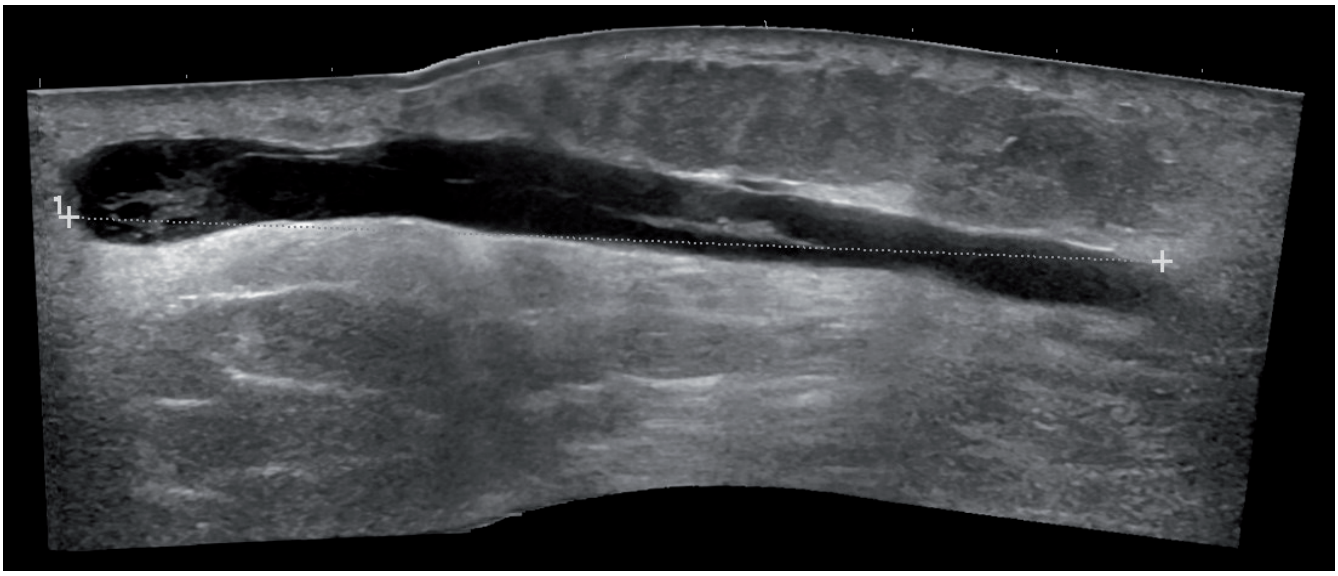

Figure 3. Ultrasound examination of the lesion measured latero-laterally (circa 7.5 cm).

was provided abroad. A comminuted distal tibia fracture on the right side was diagnosed and treated by intramedullary nailing. On the contralateral side, a femoral shaft fracture was also treated by intramedullary nailing. A trimalleolar fracture was treated by internal screw osteosynthesis of the medial malleolus, intramedullary pinning of the fibula and application of an external fixator. The patient was hospitalized on the department of traumatology for further management of the large soft tissue defect on the left lower leg temporarily treated with vacuum assisted closure (V.A.C.) therapy.

During hospitalization, approximately one month post trauma, the patient complained of local pain on the lateral side of the right distal thigh especially during physiotherapy. Clinical evaluation showed a tumor on the distal thigh characterized by a fluctuant mass during palpation (Figure 1). The

Figure 4. Clinical photo of the Morel-Lavallée lesion on the lateral side of the right distal thigh circa three weeks post diagnosis.

pain worsened by pressure on the mass. Ultrasound examination the day after discovering the lesion described a Morel-Lavallée lesion of circa 9.2 x 7.5 cm (Figures 2 and 3).

Since the pain only appeared during exercise, a conservative treatment by occasionally bandaging, watchful waiting and careful monitoring was initiated. Three weeks after the ML lesion was diagnosed, the volume of the mass appears to be decreased (Figure 4). The symptoms slowly improved and conservative treatment was maintained.

DISCUSSION

Morel-Lavallée lesions are caused by violent shear forces to an area with a strong underlying fascia and are subsequently most often seen around the pelvis or lower limb, especially in the peritrochanteric region. More than fifty percent of the ML lesions are due to high energy trauma mechanisms (4,9). The clinical manifestation of ML lesions can vary between soft tissue swelling with or without a bruised area. Skin contour asymmetry and soft fluctuance can be presented (6).

Although magnetic resonance imaging (MRI) is considered to be the preferred method of imaging to determine lesion characteristics and chronicity (10), ultrasound is very useful as a diagnostic modality (11). Since pain management was under control and clinical evaluation of the lesion in the current case report looked reassuring, MRI was unnecessary. Moreover, the ML lesion presented more than three weeks after trauma which is classified as a chronic lesion according to Carlson et al. (12).

The treatment of ML lesions is still a controversial subject amongst authors. There is currently no generally accepted evidence based algorithm for the management of these types of lesions. Although Greenhill et al. (6) recommend to treat acute lesions as early as possible. Uncomplicated subacute or chronic lesions should undergo imaging for evaluation of the size and characteristics of the lesion. Conservative treatment options are compressions bandages and aspiration. Surgical interventions include percutaneous or open surgical debridement (6).

By conclusion, Morel-Lavallée lesions are post-traumatic closed soft-tissue degloving injuries that are often missed to diagnose. Morel-Lavallée lesions can be complicated by skin necrosis and infection. There are currently no evidence based guidelines in medical literature on the treatment of Morel-Lavallée lesions. Overall, we agree that ML lesions need close monitoring and evaluation until final healing occurs. Early recognition and optimal management can save patients from undesirable complications and need for complex open surgical treatment.

CONFLICT OF INTEREST

The authors declare to have no conflict of interest.

ETHICAL APPROVAL

A written informed consent was signed by the patient.

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