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Case Report Open Access

An extensive Morel-Lavallée lesion mimicking deep vein thrombosis

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ABSTRACT

Morel-Lavallée lesions are post-traumatic hemolymphatic collections related to shearing injury and disruption of interfascial planes between the subcutaneous soft tissue and muscle. In this report, we present a 24-year-old male with atypically Morel-Lavallée lesions localized in the thigh, knee and calf regions, mimicking deep vein thrombosis.

Keywords: Deep vein thrombosis; degloving; Morel-Lavallée.

Morel-Lavallée lesions (MLL) are post-traumatic hemolymphatic fluid collections related to shearing injury and disruption of interfascial planes between the subcutaneous soft tissue and muscle. Morel-Lavallée lesions are most commonly found in the trochanter/hip (36%), followed by thigh (24%) and pelvis (19%).[1] Its occurrence of the whole leg is rare. Herein, we report an unusual presentation of MLL.

CASE REPORT

A 24-year-old male was admitted to the emergency service following amoderate-velocity bicycle accident 15 days ago. He had a right tibial fracture and intramedullary instrumentation history. The patient suffered from serious leg pain and swelling. Physical examination revealed large abrasion on the anterolateral site of the thigh, significant increase in left leg diameter and positive Homan's sign; however, venous structures were patent and functional on Doppler ultrasonographic evaluation. Ultrasound revealed an extensive collection between the skin and fascia. Hematoma was initially considered. The tension on the leg started to resolve on the second day of admission and generalized fluctuation occurred through the lateral aspect of left leg. Magnetic resonance imaging (MRI) demonstrated complete degloving over the entire lateral aspect of his left thigh extending from the lower lateral abdomen to the middle of tibia (Figures 1, 2). The liquid collection was aspirated through a small incision in combination with systemic antibiotic therapy and leaved to negative pressure drainage with external bandaging. The patient was discharged on postoperative 10th day and his overall condition is well in the outpatient follow-up visits.

DISCUSSION

The MLL first described by a French physician Maurice Morel Lavallée in 1853 is a closed degloving injury involving separation of the skin and subcutaneous fat from the underlying fascia.[2,3] The acute trauma, typically due to a blunt shearing force applied across the surface of the skin, creates a potential space between the subcutaneous fat and fascia which fills with a mixture of hemorrhage, fat, and lymphatic fluid due to disruption of bridging vessels and lymphatic channels.[3] Vanhegan et al.[1] and Hak et al.[3] reported trochanteric, pelvic, flank and knee regions as the most common locations for these lesions. On the other hand, MLLs are rarely seen in multiple regions.[4]

Morel-Lavallée lesions present within a few hours to 13 years.[5] They are usually with underlying fractures and mostly unilateral. Patients may suffer from pain, swelling and stiffness. Physical examination reveals a fluctuant boggy mass under skin causing contour deformity with or without discoloration.

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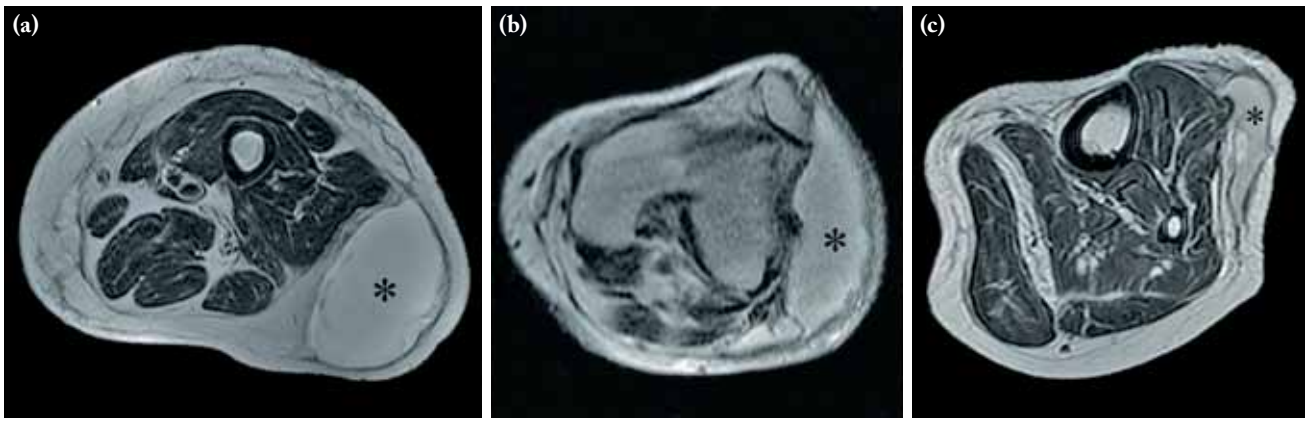

Figure 1. Axial T_2-weighted magnetic resonance imaging of the **(a)** left thigh, **(b)** left knee, **(c)** left calf. Asterisk show fluid collection.

Unresolved hematomas may also become persistent with encapsulation.

Morel-Lavallée lesions can be detected by ultrasonography. However, MRI is the best choice to determine the lesion type and chronicity.[6] On MRI, acute or subacute fluid collections containing a large amount of methemoglobin may be hyperintense on T_1- and T_2-weighted imaging. In this case, MRI showed acute fluid collection-related hyperintense lesions.

The differential diagnoses for acute lesions include hematomas, abscesses, fat necrosis, and soft tissue neoplasms, whereas the differential diagnosis is expanded in chronic collections which are better marginated and more homogeneous including seromas, bursitis, and lymphoceles.[7]

The skin receives its blood supply from the underlying fascia, whereas perfusion is dependent on the dermal and subcutaneous vascular plexus after the separation from the fascia. In cases of such injuries,

Figure 2. Coronal T_2-weighted magnetic resonance imaging of the **(a)** left thigh, **(b)** left calf. Asterisk show fluid collection.

expanding hematoma may lead to skin necrosis acutely or in a delayed fashion, if not promptly drained. Treatment options include application of compression banding, percutaneous or open surgical drainage with debridement, and irrigation and suction drainage with or without injection of sclerosing agents followed by pressure therapy.[5]

In conclusion, in our case, the lesion was atypically located including both thigh, knee and calf regions, and the initial symptoms and findings were similar with deep vein thrombosis. The diagnosis of Morel-Lavallée lesions should be particularly kept in mind by the cardiovascular surgeons and orthopedists, when venous Doppler ultrasonography reveals normal findings.

Declaration of conflicting interests

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