A CASE OF MOREL LAVALLEE LESION

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Abstract:
Morel-Lavalle effusions are the result of the skin and subcutaneous fatty tissue abruptly separating from the underlying fascia, a traumatic lesion that has been termed closed degloving injury. These effusions are common in the trochanteric region and proximal thigh, where they have been referred to as Morel-Lavalle lesions. In this region, the dermis contains a rich vascular plexus that pierces the fascia lata. The disrupted capillaries may continuously drain into the perifascial plane, filling up the virtual cavity with blood, lymph, and debris. An inflammatory reaction commonly creates a peripheral capsule, which may account for the self-perpetuation and occasional slow growth of the process. Morel-Lavalle lesions have been listed under different names, including posttraumatic soft-tissue cyst, pseudocyst, Morel-Lavalle extravasation, or Morel-Lavalle effusion. MRI protocol included axial and coronal spin-echo T1-weighted sequence, axial T2, coronal STIR sequences. Gadolini-um-dimeglumine is used as contrast agent. A thin hypointense ring, likely representing a hemosiderin-laden capsule, circumscribed all lesions. They show homogeneous hyperintensity on both T1- and T2-weighted sequences and surrounded by a hypointense peripheral ring. This T1 signal-intensity is probably related to the existence of methemoglobin, characteristic of subacute hematomas. Methemoglobin is first observed on the periphery of subacute hematomas and produces a concentric ring sign. Long-standing Morel-Lavalle lesions show an MRI pattern that includes variable signal intensity on T1 and hyperintensity on T2-weighted sequences, and a hypointense peripheral rim. Peripheral enhancement also be present. The heterogeneous hyperintensity on T2-weighted sequences correlates with the existence of hemosiderin deposition, granulation tissue, necrotic debris, fibrin, and blood clots characteristic of chronic organizing hematoma. The hypointense peripheral ring represents a hemosiderin-laden fibrous capsule with mild inflammatory infiltrate, which is said to be relevant for the self-perpetuation of
the lesion. Finally, the internal enhancement is probably related to the capillary formation in the lesion. The history of trauma, the characteristic location, and the MRI features may contribute to a correct diagnosis in such cases.

Keyword: Chronic expanding hematoma of left proximal thigh; 50-year-old male patient with a history of RTA before 3 years. Developed swelling in the proximal left thigh within a month, gradually increasing in size. FNAC done, report came as lipoma. Patient sent for CT left thigh to rule out soft tissue tumor.

WORKUP:

- USG Left thigh
- CT of left thigh with contrast
- MRI Left thigh with contrast

USG Left Thigh:

Depending on the age of the hematoma, the lesion appears on sonography as anechoic relative to hyperechoic mass. The lesion is located anterior to the muscle layer and posterior to the hypodermis, a hypoechoic layer showing as thin bands of echoes that represent connective tissue.

The lesion contains fat globules that appear as hyperechoic nodules along the wall. The lesion shows a fluid-fluid level resulting from sedimentation of cellular blood components, and a capsule may surround the mass. The capsule may help maintain the mass and explain why conservative therapy such as the application of a compression bandage is ineffective.

CT THIGH PLAIN:

- The lesion is seen in the subcutaneous plane, anterolateral to vastus lateralis muscle. The lesion also shows a central fatty component.

CT LEFT THIGH - CONTRAST:

- On contrast, the lesion appears iso to hypodense with peripheral rim enhancement.
compared with skeletal muscle, the lesion appears hyperintense on the T1-weighted sequences.

T2 CORONAL: compared with skeletal muscle lesion was hyperintense on the T2-weighted sequences, (homogeneous or heterogeneous)

STIR CORONAL IMAGE Shows homogenously or heterogeneous hyperintense.

MRI CONTRAST
A thin hypointense ring, most likely representing a fibrous or hemosiderin-laden capsule, circumscribed all lesions. The capsule was found to be complete or incomplete. Partial internal septa were found; fluid–fluid levels may present. Patchy internal contrast enhancement and mild peripheral contrast enhancement noted.
CONTENT OF THE LESION
Waterlike content of the lesion should suggest a seroma. It appears as T1 hypointense, T2 homogenously hyperintense. Homogeneous hyperintensity to skeletal muscle and subcutaneous fat on T1-weighted sequences should suggest a subacute hematoma as content of the lesion. Heterogeneous T2 hyperintensity and patchy internal enhancement are consistent with a chronic organizing hematoma.

DIFFERENTIAL DIAGNOSIS
- Nodular cystic fat necrosis
- Soft tissue tumors (Liposarcoma, fibrosarcoma)
- Fibroxanthoma
- Lipoma
- Hemangioma
- Anerysmal bone cyst

DIAGNOSIS:
History of trauma Characteristic location THIGH Sudden onset Lesion in subcutaneous plane T1-hyperintense lesion T2-hyperintense lesion STIR-hyperintense lesion A thin hypointense ring, most likely representing a fibrous or hemosiderin-laden capsule, Partial internal septa Patchy internal contrast enhancement and mild peripheral contrast enhancement CT – Shows central fatty component With these imaging findings the lesion was diagnosed as a case of MOREL-LAVALLE LESION of left thigh

DISCUSSION
MOREL-LAVALLE EFFUSION are the result of the skin and subcutaneous fatty tissue abruptly separating from the underlying fascia. Effusions are particularly common in the trochanteric region of femur and proximal thigh.

Synonyms:
Posttraumatic soft-tissue cyst
Pseudolipoma
Pseudocyst
Morel-Lavallée extravasation
Ancient hematoma
Chronic expanding hematoma
In this region, the dermis contains a rich vascular plexus that pierces the fascia lata. The disrupted capillaries may continuously drain into the perifascial plane, filling up the virtual cavity with blood, lymph, and debris. First described by this French physician in 1853. The space thus created is initially filled with blood, lymphatic extravasations and liquefied necrotic fat. An inflammatory reaction commonly creates a peripheral capsule, which may account for occasional slow growth of the process. Closed degloving injuries represent a traumatic severance of the skin and subcutaneous tissue from underlying fascia. This injury disrupts segmental perforating vessels and results in a hematoma composed of hemolymphatic fluid with a mixture of viable and necrotic fat. The mechanism of the injury is a sudden violent shear stress to the anterolateral thigh. Depending on the violence of the injury, the resulting subcutaneous fluid collection may take several forms. An accumulation may develop slowly from shearing of the lymphatics or develop rapidly from trauma to arterial beds. They are typically oval or fusiform in shape adherent to the underlying fascia. Small lesions may resolve completely with a small incision drainage, and application of a compression bandage. However, persistent lesions may contain a pseudocapsule that makes them refractory to conservative treatment; the lesion show a fluid–fluid level resulting from...
edimentation of cellular blood components, and a capsule may surround the mass. The capsule may help maintain the mass and explain why conservative therapy such as the application of a compression bandage is ineffective. Therefore, the finding of a capsule on imaging could be used to help select surgery over conservative therapy.

TREATMENT
Once these lesions become established and encapsulated then conservative management (e.g. compression bandages) is rarely successful. Surgical drainage was done for this lesion. Although in some instances the capsule needs to be resected to prevent re-accumulation.

CONCLUSION
Typical imaging features in combination with a characteristic location can suggest this diagnosis. This diagnosis can be further supported by a clinical history of trauma.

REFERENCES
1. MRI of a Morel-Lavallée Lesion Bruce Curtiss Gilbert, Liem T. Bui-Mansfield and Schuyler Dejong AJR 2004; 182:1347-1348


