

Morel-Lavallée Lesion of the Knee. Case Report

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ABSTRACT

A tangential contusion on certain regions of the body can lead to a clear or translucent serous subcutaneous collection that appears suddenly or slowly, known as Morel-Lavallée dissecting hematoma. It is frequently located in the hip and infrequently in the knee. The Morel-Lavallée lesion can be called pseudocyst, soft tissue posttraumatic cyst, or Morel-Lavallée extravasation.

We present the case of a 49-year-old patient with a serous Morel Lavallée lesion, caused by friction between the subcutaneous cellular tissue and the fascia during a traumatic injury. Given its infrequent location, it was decided to report this case, since few cases of patients with this condition have been published in the literature.

Keywords: Morel-Lavallée hematoma; seroma; soft tissue injury.

Level of Evidence: IV

Hematoma de Morel-Lavallée en la rodilla. Reporte de caso

RESUMEN

Una contusión tangencial sobre determinadas regiones del cuerpo puede provocar una colección subcutánea serosa límpida o translúcida que aparece súbita o lentamente, conocida como hematoma disecante de Morel-Lavallée. La localización en la cadera es muy frecuente, pero es infrecuente en la rodilla. A la lesión de Morel-Lavallée también se la llama pseudoquiste, quiste posttraumático de tejidos blandos o extravasación de Morel-Lavallée. Presentamos a un paciente de 49 años, con una lesión traumática y un hematoma seroso de Morel-Lavallée que se produce por la fricción entre el tejido celular subcutáneo y la fascia durante la lesión traumática. Dada su localización infrecuente, se decidió comunicar este caso, ya que se han publicado solo un par de pacientes con este cuadro.

Palabras clave: Hematoma de Morel-Lavallée; seroma; lesión de tejidos blandos.

Nivel de Evidencia: IV

INTRODUCTION

The Morel-Lavallée lesion is a rare condition. It was first described by the French surgeon Maurice Morel-Lavallée in 1863 as a collection of fluid in the fat of subcutaneous cellular tissue.^{1,2} It occurs predominantly from blunt trauma or contact sports such as football and wrestling. These predisposing factors result in tears of the trans-aponeurotic vessels, generating the separation of the superficial and deep fascia located in the hypodermic tissue and creating a cavity where hematic and lymphatic fluid accumulates.³ Over the years, it has received different names: post-traumatic soft tissue pseudocyst, pseudolipoma, Morel-Lavallée extravasation, Morel-Lavallée effusion, and Morel-Lavallée dissecting hematoma.²

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Its most frequent location is in the thigh area due to its exposure to large traumas that impact the pelvic and coxal regions, with a predilection for the trochanteric area. The second and infrequent location described is on the pretibial space. Lastly, a common presentation on the abdominal wall has been described as a consequence of cosmetic surgeries, such as liposuction.⁴

Diagnosis is not usually timely since clinical findings fluctuate and can appear hours, days, months, or even years after the trauma. Diagnostic evaluation includes anamnesis, a thorough physical examination, and imaging studies such as plain radiography, ultrasound, or MRI.⁵

Treatment varies according to certain characteristics, such as evolution. In most cases, the treatment of choice during the acute phase consists of drainage through a needle puncture, compression with an elastic bandage, cryotherapy, and appropriate antibiotics. In chronic phases or in relapses that do not respond to puncture management, capsular excision is chosen as the definitive therapy.⁶

CLINICAL CASE

A 49-year-old male stevedore, with no pathological or surgical history, consulted on May 12, 2019, due to a six-month clinical picture characterized by fluid accumulation in the left pre-patellar area. As an important preceding event, he mentioned that the affected area was in constant friction contact with pallets. He referred that approximately a month before, a serosanguineous fluid had been obtained in a needle aspiration and that conservative measures had been indicated.

On the day of the consultation, a fine needle puncture was performed and a serous fluid was obtained (about 15 ml). Conservative measures were recommended, such as cryotherapy and compression bandage. After a week, the patient returned and reported that, after a few days, the new increase in volume over the intervened area was evident. Given the constant recurrence, surgical treatment was chosen.

There was an increase in the volume of the left knee. with fluctuating content and without other signs of phlogosis, such as heat, erythema, or pain (Figure 1). Upon palpation, the lesion was not painful or hot. It presented liquid wave fluctuation, soft consistency, cystic appearance without adherence, and it was mobile. The chest radiograph showed no abnormalities. The electrocardiogram was appropriate for the age of the patient.



Figure 1. Morel-Lavallée lesion of the left knee.

Diagnosis: Morel-Lavallée lesion of the left knee.

On June 12, 2019, the patient underwent surgery under spinal anesthesia, complying with the pre-surgical protocols. A pneumatic manometer was placed on the left limb to cause ischemia, asepsis and antisepsis were performed with 5% chlorhexidine plus alcohol, and sterile surgical drapes were placed (Figure 2).



Figure 2. Placement of sterile drapes on the left knee.

A scalpel incision was made on the skin of the left knee with an anterior approach of approximately 8 cm long; the capsule of the hematoma had a cystic, rounded, well-defined shape, and regular yellow-brown edges. The dissection was performed by the posterior portion of the pre-patellar area until it was completely released; a capsule of approximately 5 x 4 cm was obtained (Figures 3-5).



Figure 3. Direct observation of the Morel-Lavallée lesion of the left knee.



Figure 4. Resection of the Morel-Lavallée lesion of the left knee.



Figure 5. Resection piece. Morel-Lavallée hematoma capsule of the left knee, a 4 x 5 cm external facet.

The pre-patellar cavity was washed with saline solution and hemostasis without drainage was performed. The planes were closed with intradermal Vicryl 3.0 and the skin with nylon 3.0 plus external sterile gauze and compression bandage (Figure 6).

The surgery took place in the operating room and was an outpatient procedure. The following drugs were administered: cephalexin 500 mg, every 12 h; paracetamol 500 mg, every 8 hours; ibuprofen 500 mg, every 12 hours, for 15 days. The patient evolved optimally (Figure 7). At the follow-up visit 15 days after surgery, the stitches were removed. At 20 days, the patient had a good range of motion and the condition had definitively resolved, for which he was discharged from the Traumatology Service.



Figure 6. Skin suture over the left knee.



Figure 7. Scarring of the skin in the resolution period of the lesion.

DISCUSSION

The Morel-Lavallée lesion is described as a rupture of the fascia where there is an accumulation of serous fluid on the aponeurotic tissue, related to a previous soft tissue closed trauma, together with an injury to the blood and lymphatic vessels that causes extravasation of the liquid that occupies the virtual cavity.

The lesion is located mainly in the trochanteric area, the hip area, and specifically the lower back. The location in the knee is infrequent; whereas numerous cases of hematoma in the hip have been published, the cases in the knee are limited. At present, due to the high frequency of low-impact motorcycle accidents, the location on the anterior aspect of the knee is more frequent than is believed. In Ecuador, there are no publications on cases and their clinic and therapeutic procedures.⁶

In general, the lesion can develop days, weeks, or months after the trauma,⁵ and this conditions the therapeutic strategy. McKenzie et al.⁷ determined the period of evolution (time elapsed from the injury to the appearance of the seroma) in acute, from 1 to 3 days; subacute, from 4 to 30 days; and chronic, >30 days. In the acute phases, we evacuate it by needle aspiration plus cryotherapy, in addition to compression measures on the intervened area. This is known as conservative treatment and is the most indicated therapy in most cases. Surgery is reserved for the chronic phases or in the absence of response to conservative treatment. In these situations, we opt for open surgery. The patient reported here had a lesion of six months of evolution and the conservative therapeutic alternatives and aspiration had failed, so it was considered and treated as a chronic case.

The technique used by Fernández et al. consists in the dissection of the Morel-Lavallée hematoma capsule in the thigh with the placement of two drains.⁴ In our case, the capsule was excised anteriorly, without external drainage, and there were no signs of complications during the postoperative period.

CONCLUSIONS

The frequency of the Morel-Lavallée hematoma is low in general terms; the cases described in scientific reports are mostly clinical cases and the therapeutic behavior in the gluteal region. The main cause described is a tangential trauma of great impact on the affected zone. Conservative treatment is almost always chosen and, for chronic cases or an inadequate response after fine-needle aspiration, surgery is indicated with identification and dissection of the capsule.

Conflict of interests: The authors declare they do not have any conflict of interests.

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