Rev Esp Cir Ortop Traumatol. 2012;56(1):46–50

Revista Española de Cirugía Ortopédica y Traumatología

www.elsevier.es/rot

ORIGINAL ARTICLE

Calcific myonecrosis of the leg☆

F. Portabella[a,*], J.A. Nárvaez[b], R. Llatjos[c], J. Cabo[a], M. Maireles[a], C. Serrano[a], S. Pedrero[a], E. Romero[a], O. Pablos[a], A. Saborido[a]

[a] *Servicio de Cirugía Ortopédica y Traumatología, Hospital Universitario de Bellvitge, Hospitalet de Llobregat, Barcelona, Spain*
[b] *Servicio de Radiodiagnóstico, Hospital Universitario de Bellvitge, Hospitalet de Llobregat, Barcelona, Spain*
[c] *Servicio de Anatomía Patológica, Hospital Universitario de Bellvitge, Hospitalet de Llobregat, Barcelona, Spain*

Received 12 June 2011; accepted 31 July 2011

KEYWORDS
Calcific myonecrosis;
Leg;
Infection

Abstract Calcific myonecrosis is a rare post-traumatic sequela almost exclusively located in the lower extremity, which can be mistaken for an aggressive primary neoplasm. This lesion, initially described by Gallei and Thompson in 1960, is characterized by the formation of a calcified mass that appears decades after trauma. The pathophysiologic mechanism is not fully understood, although the lesion most likely results from post-traumatic ischaemia and it may be associated with a common peroneal nerve injury. The typical radiographic image is a fusiform soft tissue mass with linear calcifications. The treatment of choice is conservative in asymptomatic patients because the surgical treatment has a high complication rate.

We report four cases of calcific myonecrosis treated surgically in our hospital. Three of the cases had an infection as a complication that required subsequent debridement and special therapies to achieve the resolution of the cases.

PALABRAS CLAVE
Mionecrosis calcificante;
Pierna;
Infección

Mionecrosis calcificante de la pierna

Resumen La mionecrosis calcificante es una rara secuela postraumática que se localiza casi exclusivamente en la extremidad inferior, y que puede ser confundida con una neoplasia primaria agresiva. Esta lesión, descrita inicialmente por Gallei y Thompson en 1960, se caracteriza por la formación de una masa calcificada que aparece varias décadas después de un traumatismo. El mecanismo fisiopatológico no es conocido, sin embargo la lesión parece que es debida a una isquemia postraumática y puede asociarse con una lesión del ciático poplíteo externo. La imagen radiográfica típica es una masa de partes blandas fusiforme con calcificaciones lineales. El tratamiento de elección es conservador en los casos asintomáticos ya que el tratamiento quirúrgico tiene un alto porcentaje de complicaciones.

☆ Please cite this article as: Portabella F, et al. Mionecrosis calcificante de la pierna. Rev esp cir ortop traumatol. 2012;56(1):46-50.

* Corresponding author.
E-mail address: fedeportabella@gmail.com (F. Portabella).

1988-8856/$ - see front matter

Presentamos 4 casos de mionecrosis calcificante tratados quirúrgicamente en nuestro hospital. Tres de los casos se infectaron por lo que precisaron sendos desbridamientos y terapias especiales para su resolución definitiva.

Introduction

Calcific myonecrosis is a rare complication that has been described as a chronic sequela of a trauma in the lower limb. It is associated in the majority of cases to a nervous and/or vascular lesion with or without clear evidence of compartment syndrome.

The patients indicate a history of a fracture of the femur or tibia that evolved with vascular and/or nervous complications. After many years they note the presence of a painless tumour in the soft tissues, located in the antero-external part of the leg. Physical examination shows that a large soft tissue mass is located in the anterior compartment of the leg, which is fluctuant, painless and sometimes under tension. Its typical radiographic appearance is of a large fusiform soft tissue mass with linear calcifications inside with well defined borders.

These radiographic findings should allow differential diagnosis against other causes of soft tissue masses such as abscesses, myositis ossificans or soft tissue sarcomas, the latter being a reason that patients are sent to tumour pathology units.

The aim of our work was to present 4 cases of calcific myonecrosis of the leg treated in our hospital over the last few years and carry out a review of the literature of this rare disease that can cause diagnostic problems. Three of our patients were sent to the Tumour Unit with the tentative diagnosis of soft tissue sarcoma and the fourth went to the emergency department with a suspected acute soft tissue infection in the lower limb.

Clinical cases

Case 1

The first case was a 55-year-old male, with a history of a supracondylar femur fracture that was treated with osteosynthesis, 34 years before he was sent to our tumour unit. In the anamnesis, the patient referred to having presented repeated haematoma on the leg after the operation, which required successive debridement. As a result he was left with a lesion in the sciatic nerve that required a tendon transposition to correct the residual equinus. He later presented symptoms of swelling in the limb, which would clear up of their own accord, until nearly 4 years ago when he went to the hospital with a persistent tumour mass that did not disappear as previously: the diagnosis was of a synovial cyst. Due to the progressive growth of the tumour and increased pain, they performed a magnetic resonance imaging (MRI) that reported a soft tissue sarcoma, which was the reason he was sent to the tumour unit. On examination he presented good general health, with no toxic syndrome; what stood out was the presence of a soft tissue mass of about 20 cm, which was hard, well defined and under tension, and took up the entire anterolateral compartment of the leg. The radiographic images showed a fusiform tumour with calcifications inside and with erosion at tibial cortical level (Fig. 1A). In the computerized tomography (CT), we could see a soft tissue mass in close contact with the anterior cortex and lateral cortex of the tibia, with multiple irregular central and peripheral calcifications (Fig. 1B). In the MRI (Fig. 1C), the lesion had hypointense areas that eroded the tibial cortical bone by disrupting it. We could see images suggestive of calcifications and irregular and hypointense margins, which indicated haemosiderin secondary to intralesional haemorrhage. Despite the fact that the clinical history and additional tests did not suggest a sarcoma, we carried out a biopsy that eliminated the presence of tumour cells. Later extensive debridement of the soft tissue mass revealed a coffee-coloured liquid, multiple elongated calcifications, degenerate mucoid tissue with muscle necrosis and remains of organized haematoma. We were able to extract nearly all of the mass and the cultures taken were negative. The histopathological study showed muscular necrosis and calcified bone matter, which suggested a diagnosis of calcific myonecrosis. The evolution was satisfactory, with correct healing of the wound, and the patient improved clinically. Seven years later there was no evidence of a recurrence.

Case 2

A 64-year-old patient with a history of a tibia fracture 12 years before, which was treated with a long-leg plaster. In the anamnesis carried out, the patient remembered the presence of repeated haematomas on the leg, which required repeated punctures to clear. As a consequence of the whole process, there was a residual equinus, which required a plasty of the posterior tibia. A few years before coming to our surgery, he noticed a painless hard tumour, which was progressively growing. Due to its size, he was sent to our centre with a suspected malignant tumour or myositis ossificans. After a radiographic study, the MRI established the diagnosis of calcific myonecrosis (Fig. 2). Given that he was asymptomatic and because of the possible complications from surgical treatment, we decided that, with the patient's consent, we should monitor his progress. Three years later, a small trauma produced a wound through which haematic and slough drained. It was operated on with a surgical debridement of the lesion and haematic material, necrotic muscle and multiple calcifications were removed. The wound was finally closed with drains. Two