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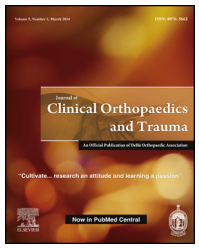

Case Report

Non-traumatic myositis ossificans circumscripta: A diagnosis trap

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ABSTRACT

Myositis ossificans circumscripta (MOC) is a benign condition of non-neoplastic heterotopic bone formation in the muscle or soft tissue. Trauma plays a role in the development of MOC, thus, non-traumatic MOC is very rare. Although MOC may occur anywhere in the body, the lesions are localized predominantly in the high-risk sites of injury, such as the thigh, buttock, and elbow. MOC can easily be mistaken for osteomyelitis or a malignant tumor, specifically osteosarcoma or soft-tissue sarcoma. We report a rare case of non-traumatic myositis ossificans circumscripta of thigh which appear clinically and radiologically as a malignant neoplasm. Despite its rarity, MOC should be contemplated in the differential diagnosis of malignant tumors.

1. Introduction

Non-traumatic MOC is a rarely reported benign heterotopic ossification characterized by the aberrant formation of bone in extraskeletal soft tissues. It is usually confined to a single muscle or muscle group, and is most common in active male within the second and third decade of life.[1] It usually occurs after muscle injury such as repeated microtrauma, but it can also occur without previous trauma. In a small number of cases, possible etiologies include infections, burns, neuromuscular disorders, hemophilia (factor-IX deficiency), tetanus, and drug abuse. Clinically and radiologically, it is difficult to distinguish this disease from soft tissue and bone malignancy, so a biopsy is necessary to confirm the diagnosis.[2,3]

2. Case report

A 27-year-old woman presented with a 7 month history of insidious onset of an isolated left thigh mass, located dorsally at the junction of middle and distal third of the thigh. The mass was painful, and slowly enlarging. The patient denied any history of trauma, fever, chills or weight loss. She wasn't involved in professional or recreational sports activities. Physical examination revealed a 7 × 8 cm, soft and painful mass in the distal one-third of the left thigh, little sensitive to

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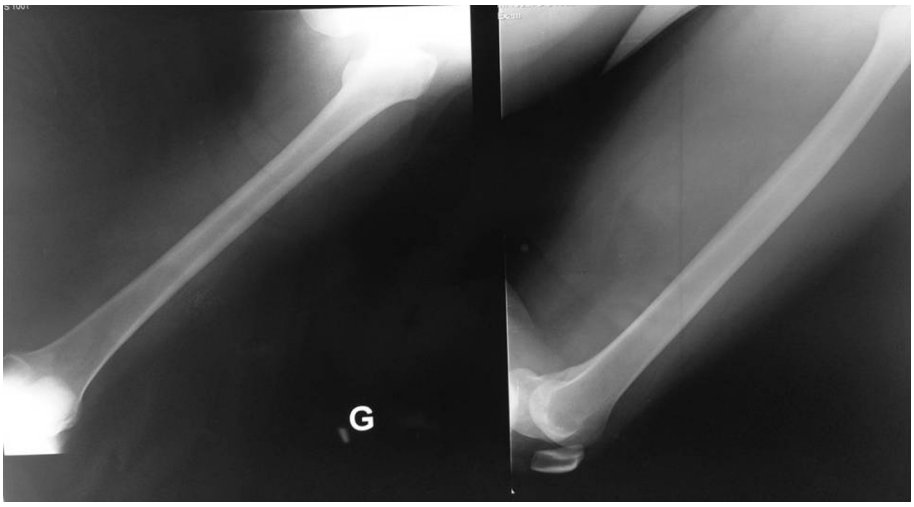

Fig. 1 – Plain radiographs revealed no specific bone abnormalities and didn't show any calcifications facing the mass (at 2 month).

pressure, firmly attached to deeper tissues. There were no motor deficits or neurologic symptoms. The pain was not severe enough to disturb sleep or to hinder physical activities but worsened after muscular contraction and mobilization of neighboring joints (i.e. hip and knee). There is no stiffness of the knee with normal joint amplitudes. Laboratory tests revealed normal white blood cell count (6400/mm^3), a slight increase of Erythrocyte Sedimentation Rate (31 mm/h) and C-reactive protein (63 mg/dl), alkaline phosphatase levels of 90 U/L, calcium levels of 10 mg/dl, and creatine phosphokinase levels of 200 U/L. Plain radiographs initially revealed no specific bone abnormalities and didn't show any calcifications facing the mass (Fig. 1). Radiography performed 5 months later showed an oval mass with a regular border containing dense peripheral calcifications with centripetal evolution; these ossifications were distant from adjacent bony structures associated with unilamellar periosteal reaction of the underlying bone (Fig. 2). Magnetic resonance imaging (MRI) objectified tumoral process of posterior muscular compartment of the left thigh with crown aspect (periphery with hyperintense signal on T2 and center with hypointense signal on T2 and hyperintense signal on T1) (Fig. 3A and B). This process measured 6 × 4 cm with refoulement of vessel elements (Fig. 3C). Surgical biopsy was performed in the posterior face

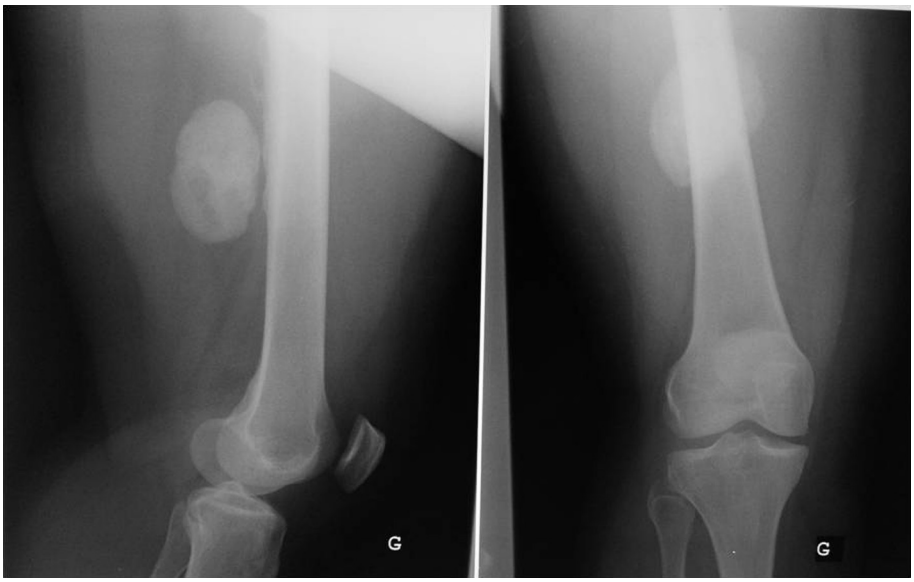

Fig. 2 – Radiography performed 5 months later showed an oval mass with a regular border containing dense peripheral calcifications with centripetal evolution; these ossifications were distant from adjacent bony structures associated with unilamellar periosteal reaction of the underlying bone.