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Intramuscular Hemangioma Mimicking Myofascial Pain Syndrome : A Case Report

Intramuscular hemangioma, an infrequent but important cause of musculoskeletal pain, is often difficult to establish the diagnosis clinically. This report describes a case of a 32-yr-old woman who presented with severe left calf pain for 10 yr. Initial conservative treatments consisting of intramuscular electrical stimulation, herb medication, acupuncture, and intramuscular lidocaine injection under the diagnosis of myofascial pain syndrome in other facilities, failed to alleviate the symptoms. On physical examination, there was no motor weakness or sensory change. Conventional radiography of the leg revealed a soft tissue phlebolith. Conventional angiography study showed hemangioma. Intramuscular hemangioma within the soleus muscle was confirmed by magnetic resonance imaging. Following surgical excision of the hemangioma, the patient's symptom resolved completely. Intramuscular hemangioma is a rare cause of calf pain and should be considered in the differential diagnosis if a patient with muscle pain, particularly if associated with a soft tissue mass, fails to respond to conservative treatment.

Key Words : *Hemangioma; Intramuscular; Calf; Pain; Myofacial Pain Syndrome*

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INTRODUCTION

Calf pain is a common problem in the clinical field and is caused by many various conditions. Soft-tissue etiologies include rupture of the gastrocnemius muscle, muscle strain, and myofascial pain syndrome (MPS) of calf muscles, which are all relatively easy to establish the diagnosis and usually resolve with appropriate treatment (1, 2). Among these, the common cause of calf pain in clinical practice is MPS of gastrocnemius and/or soleus muscles (3, 4).

More serious causes are acute or chronic osteomyelitis, peripheral arterial diseases, or peripheral venous diseases (3). As a rare etiology, sural nerve entrapment may also cause chronic calf pain (5). It is very important to find the actual cause in order to relieve the patient's pain and lessen the effort, time, and money consumed in the workup and management of a patient with severe calf pain.

Intramuscular hemangioma, an infrequent but important cause of musculoskeletal pain, is often difficult to diagnose clinically. The following report demonstrates the importance of considering intramuscular hemangioma in the differential diagnosis of calf pain and discusses the use of surgical excision biopsy for its treatment.

CASE REPORT

A 32-yr-old woman with no relevant or significant medical history presented with severe left calf pain that had persisted for the past 10 yr. The symptom was constant and worsened with menstruation, standing or walking for more than 30 min. The pain was relieved by elevating the leg in the sitting position or massaging the calf muscles. The pain was not associated with any progressive neurologic symptoms or signs. She reported that none of the medications she had tried provided any significant pain relief. Intramuscular electrical stimulation for 4 months and repeated muscle injections with lidocaine were also ineffective. Alternative treatments including acupuncture and Korean herbal medications had been tried many times without much success.

The patient's pain drawing showed a pain pattern limited to the left calf, especially in the medial side, which indicated a referred pain pattern of medial gastrocnemius or soleus muscle (Fig. 1). Physical examination revealed severe tenderness on the medial side of the left calf muscles. Signs of calf swelling were equivocal. Deep tendon reflexes were normal in both sides. Muscle strength of both lower extremities was normal. Sensation in both lower extremities was intact. The straight leg raising test was normal. Conventional radiography of the left leg showed several mottled calcifications within the mus-

Fig. 1. Pain drawing shows a referred pain pattern of medial gastrocnemius or soleus muscle.

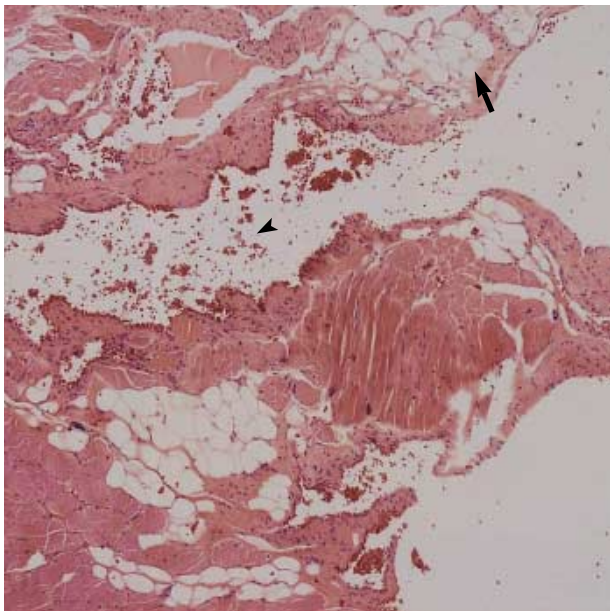

Fig. 3. Photomicrograph of specimen shows dilated thin-walled blood vessels (arrowhead) and an adipocytic component (arrow) (H&E, ×100).

cles but did not reveal erosions of tibia or fibula (Fig. 2A). To rule out a possible vascular deformity, femoral angiography was performed and a hemangioma was suggested in the left calf (Fig. 2B). Magnetic resonance imaging (MRI) of the left lower extremity was performed for further evaluation of these abnormalities and showed an enhancing soft-tissue mass

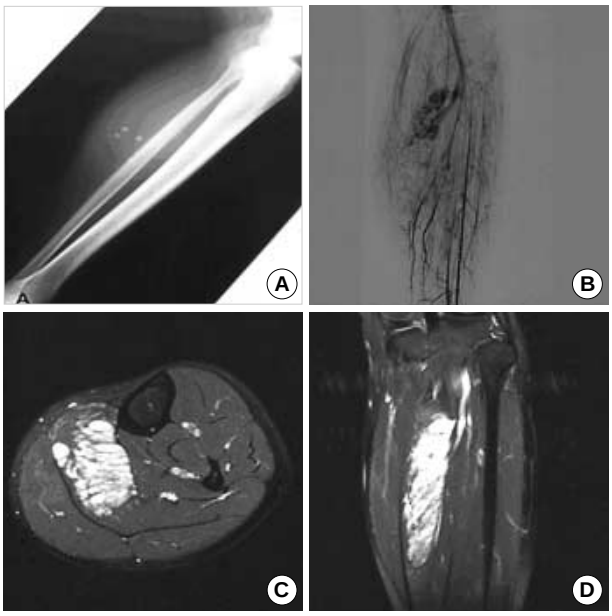

Fig. 2. (A) Plain radiography of the left leg shows several focal round calcifications within the muscles. (B) Femoral angiography reveals faint tissue staining and puddlings with early venous drainage that suggest vascular malformation on the left calf. (C, D) Sagittal and axial views of magnetic resonance image shows findings consistent with an intramuscular hemangioma involving the medial potion of the soleus muscle.

in the medial aspect of the soleus muscle (Fig. 2C, D).

The patient was referred to an orthopedic surgeon and underwent excisional biopsy. Operative findings revealed a mass consisting of several irregular fragments of muscular soft tissue, measuring 6×6×4 cm. The final pathologic diagnosis was intramuscular hemangioma with fatty overgrowth isolated to the soleus muscle, which was in concordance with the MRI findings (Fig. 3). Within 1 month, the patient reported 90% pain relief and had discontinued all pain medications. Even with prolonged walking of more than 30 min, calf pain did not occur and the subject was able to resume mountain hiking 3 months following the operation.

DISCUSSION

Hemangiomas comprise 7% of all benign tumors (6), and are most commonly superficial and easy to establish the diagnosis clinically. However, deep-seated hemangiomas such as intramuscular hemangiomas are relatively uncommon (6, 7), and often pose diagnostic difficulties (8, 9). Age of occurrence of intramuscular hemangioma is most common in the third and forth decades, but occasionally may present earlier (10, 11). Although intramuscular hemangioma have a wide anatomical distribution, it most commonly occurs in the extremities, and all patients present with a growing palpable mass, which may or may not be accompanied by pain or may pre-

sent as pain without a mass (10, 12-15).

For the diagnosis of intramuscular hemangioma, plain radiographs, MRI, angiography, and positron emission tomography (PET) may be helpful. Plain radiographs show phleboliths, particularly phleboliths associated with a soft-tissue mass and cortical or periosteal reaction adjacent to a soft-tissue hemangioma (16). MRI is useful in defining the location and extent of intramuscular hemangiomas and is now routinely used to characterize intramuscular hemangiomas (10). Angiography of a peripheral hemangioma is especially useful for evaluating the extent and degree of vascularity, and vascular supply (17). ^{18}F-fluoro-2-deoxy-D-glucose (FDG)-PET and fluorine-18 alpha-methyltryosine (FMT)-PET may be useful in the diagnostic workup of hemangioma as well as for differentiation from malignancy (11). Intramuscular hemangiomas that are well localized within a single muscle group, contain thromboses, or are located in specialized muscle groups (such as the instrinsic muscles of the hand), and those causing neurologic impairment or compression syndrome, require surgical excision (18). Although local recurrence is reported to be over 50%, it has no correlation with a predominant vessel type or anatomical localization, and there have been no reports of malignant degeneration or metastasis, which is possible in cases of incomplete excision (6, 19).

In our case, it took 10 yr to establish the correct diagnosis of the intramuscular hemangioma. Pain drawing was suggestive of the pain pattern of MPS in medial gastrocnemius or soleus muscle. Physical examination revealed severe tenderness in the calf, but no palpable mass. Such vague symptoms and signs lead to the misdiagnosis of MPS and inappropriate treatments by many health care providers. However, upon our diagnosis of a well-circumscribed intramuscular hemangioma within the soleus muscle, local excision was successful in obliterating the patient's symptoms and signs.

In conclusion, this case demonstrates that when a patient presents with a painful soft tissue mass of the leg, severe intractable calf pain, or when muscle pain fails to respond to conservative treatment, intramuscular hemangioma or other soft tissue tumors should be included in the differential diagnosis. The appropriate imaging and consultations should be performed, in order to arrive at the correct diagnosis and management, accordingly.

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