

“Swollen Ankle” Due to the Presence of Accessory Soleus Muscle - Case Report

Violeta Claudia Bojinca^{1*}, Teodora Andreea Serban² and Mihai Bojinca²

¹Department of Internal Medicine and Rheumatology, Hospital “Sfanta Maria”, University of Medicine and Pharmacy “Carol Davila”, Romania

²Department of Internal Medicine and Rheumatology, Hospital “Dr. Ion Cantacuzino”, University of Medicine and Pharmacy “Carol Davila”, Romania

*Corresponding author: Violeta Claudia Bojinca, Department of Internal Medicine and Rheumatology, Hospital “Sfanta Maria”, Ion Mihalache Blv. 37-39, University of Medicine and Pharmacy “Carol Davila”, Bucharest, Romania, Tel: +40723924823; Fax +40212224064; E-mail: vmbojinca@yahoo.com

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Abstract

Swollen ankle might be a problem of differential diagnosis in young patients performing physical exercises. A mass on the posteromedial region of the ankle might be attributed to the presence of Accessory Soleus Muscle (ASM), the most common supernumerary muscle in the lower leg.

We present the case of a young male with swelling and moderate pain on the posteromedial part of the right ankle after prolonged physical exercise. Musculoskeletal examination identified ASM. A conservative approach (symptomatic medication, physical therapy) was recommended with good results.

Keywords: Accessory solear muscle; Swollen ankle; Musculoskeletal ultrasonography

Introduction

The accessory soleus muscle (ASM) is the most common accessory muscle in the lower leg [1,3]. According to different studies it is found in 0.7-10% of individuals [1,2]. The first description of ASM was done by Cruveilhier in 1834 [3]. ASM is located between soleus muscle and Achilles tendon. The origin of the muscle is on the posterior aspect of the tibia and the anterior aspect of the soleus [1,4]. The muscle is situated anterior to the Achilles tendon and terminates on the Achilles tendon or the superior or medial aspect of the calcaneus. There are five types of distal insertions described for ASM: directly into the Achilles tendon, directly or through a short tendon onto the superior face of the calcaneus, directly or by its tendon on the medial face of the calcaneus [4]. ASM can be unilateral or bilateral and male/female ratio is 2:1 [3]. The condition is congenital but the onset of symptoms is usually in the second or third decade of life [3,5-7]. The condition is considered to be rare, but there are several reports that describe this particular situation. ASM presents as a soft mass situated on the posteromedial region of the ankle. During contraction the mass becomes tense and must be differentiated from a soft tissue tumor [1]. The differential diagnosis might be with sarcoma or hemangioma. The most frequent reported symptom is ankle pain or discomfort during or after exercise, sometimes associated with ankle swelling [1,3]. ASM is considered to be the cause of a compartment syndrome, by extrinsic compression of the tibial nerve during exercise [1,3]. ASM receives arterial supply from the posterior tibial artery, explaining the possibility of ischemic pain during intense exercise [8]. The association with the presence of abnormalities of the Achilles tendon was mentioned [9].

Case Report

We present the case of a young male presenting with right ankle swelling and moderate pain after vigorous exercise. Clinical examination revealed a posteromedial mass of the right ankle (Figure 1). There were no symptoms of tibial nerve compression or ischemic

pain on the ankle. Ultrasonographic examination showed in longitudinal and transversal view a muscular structure anterior to the Achilles tendon and replacing Kager's fatpad (Figures 2 and 3). The left ankle was normal for both clinical and ultrasonographic examination. A conservative approach with symptomatic treatment and physical therapy was recommended to the patient with good results.



Figure 1: Clinical examination revealed a posteromedial mass of the right ankle.



Figure 2: Ultrasonographic examination showed in longitudinal view a muscular structure anterior to the Achilles tendon and replacing Kager's fatpad.



Figure 3: Ultrasonographic examination showed in transversal view a muscular structure anterior to the Achilles tendon and replacing Kager's fatpad.

Discussion and Conclusion

A posteromedial swelling of the ankle in a young active adult, with pain after exercise, might be indicative for the presence of the ASM.

Magnetic Resonance Maging (MRI) is the exploration of choice, but musculoskeletal ultrasonography is also very useful in identifying the muscle as a muscular mass who is replacing the normal structure of Kager's fatpad, deep to the Achilles tendon [1,4,6,7,10]. There are several reports in the literature about clinical implications of the presence of ASM and about treatment options. The usual approach is conservative, but in some cases, the necessity of fasciotomy, debulking, tendon release or excision with good results in athletes was mentioned [1,3,5,6,10]. The administration of botulinum toxin A injection in ASM (guided by palpation and electrostimulation) was proposed as an alternative treatment to muscle excision [11]. The presence of ASM must be taken into account for the diagnosis of painful swollen ankle, especially in young people who perform intense physical activity.

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