Anatomical variations

The supernumerary muscles of the leg: a report of two cases

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Summary. Two cases of supernumerary muscles of the leg reported, which were both inserted on the sides of the calcaneus. The accessory soleus m., adductor of the fore-foot, is a variation of the triceps surae which through hypertrophy on the medial side of the leg can become particularly problematic in athletes. The fourth peroneal m. abductor of the fore-foot, is considered to increase the stability of the ankle and is asymptomatic.

Les muscles surnuméraires de la jambe : à propos de deux cas

Résumé. Les auteurs rapportent 2 cas de muscles surnuméraires de la jambe qui s'insèrent sur les faces du calcanéum. Le m. soléaire accessoire, adducteur de l'arrière-pied, est une variation du triceps sural qui, par son hypertrophie au bord médial de la jambe, peut devenir gênante spécialement chez le sportif. Le m. 4° péronier, abducteur de l'arrière-pied, est considéré comme un élément progressif améliorant la stabilité de la cheville et restant asymptomatic.

Key words: Muscle anomalies — Soleus m. — Accessory soleus m. — Peroneal mm. — Fibular mm. — Fourth peroneal m.

Muscle anomalies have been the subject of numerous publications during the 19th and early 20th centuries. Interest then lapsed until the advent of sports medicine, for although these muscles are asymptomatic for most of the time, they can become painful and bulky through overuse in sporting activity.

In the leg the muscles most commonly found are the accessory soleus m. and the fourth fibular or peroneal m. This paper describes the morphology and the role of these muscles, based on an operated case of accessory soleus, and a case with a fourth fibular m. found in the dissecting room.

The accessory soleus muscle

Case report
A student aged 20 years complained of pain in the lower right calf occurring only when running 400 m or when playing volleyball. He noticed a swelling on the posteromedial aspect of the leg, 4 finger-
breadths above the medial malleolus, which appeared on maximal dorsi flexion and hardened on plantarflexion. The diagnosis of accessory soleus m. was easily confirmed by further investigations.

Computed tomography of the lower third of the leg revealed a homogeneous structure of density similar to neighboring muscles anterior to the Achilles tendon, which merged above with the medial part of the gastrocnemius and continued below to the medial aspect of the calcaneus; the long flexors of the toes and tibialis posterior were normal; the peroneal m. were well developed (Fig. 1).

MRI showed a structure in the posterior calf with a signal intensity identical to that of neighboring muscles, situated immediately anterior to the Achilles tendon and posterior to the soleus from which it was clearly separate.

The operation confirmed the presence of a supernumerary muscles lying superficially under the posterior aponeurosis of the leg. The muscle body originated above from the medial aponeurosis of insertion of the soleus and the posterior surface of the tibia. It ran parallel to the posterior aspects of the long fexors of the toes and the soleus, then between the tibialis posterior in front and the Achilles tendon behind. It was inserted below through a tendon 4 mm in width, into the medial surface of the calcaneus. The muscle, 20 cm long, had two neurovascular pedicles arising from the posterior tibial neurovascular bundle (Figs. 2-4).

Discussion

Originally called a « supernumerary soleus » by Cruvelhier [5] and « second soleus » by Pye Smith [20], the accessory soleus has consistent proximal origins: the posterior surface and line of insertion of the soleus, the aponeurosis of the soleus or of the long toe.