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Case Report

Sciatic nerve entrapment in the popliteal fossa: a case report

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ABSTRACT

During the routine dissection we found an anomalous muscle in the popliteal fossa bilaterally in a male cadaver. This muscle had tendinous origin from the lateral and posterior intermuscular septum of the thigh as separate slips. These two slips united in front of the sciatic nerve and formed a narrow muscular belly which enclosed the sciatic nerve and the tibial nerve in its downward course and then inserted in to both the heads of gastrocnemius muscle. Sciatic entrapment in the popliteal region is uncommon and in this report we discuss the possible nerve entrapment due to the aforesaid kind of muscle variants which may confuse the surgeons. ***Neuroanatomy; 2005; 4: 41–42.***

Key words [sciatic nerve] [entrapment] [popliteal fossa]

Introduction

Variations among the posterior compartment muscles of the thigh are uncommon. In 1998, Somayaji et al [1] reported a muscle which originated from the semimembranosus and biceps femoris muscles and then inserted in to the superficial surface of the tendo calcaneous. According to Barry and Bothroyd [2] extra slips of origin associated with gastrocnemius and soleus usually join those muscles or the tendo calcaneus. Parsons [3], reported about a muscle slip that passed transversely between the two heads of origin of gastrocnemius. Insertion of muscle slips from biceps femoris into gastrocnemius and into the tendo calcaneus have been reported [4].

In this report, we discuss an anomalous muscle in the popliteal fossa with a difference in its origin and insertion from the muscles mentioned above. We also discuss in this context, the possible compressive neuropathies caused by such variant muscles.

Case Report

During the routine dissection we found an anomalous muscle in the popliteal fossa bilaterally in a male cadaver. It originated from two narrow tendinous slips, one from lateral intermuscular septum and the other from the posterior intermuscular septum of the thigh. These two slips then united and formed a narrow muscular belly in front of the sciatic nerve at its division into tibial and common peroneal nerve. The muscle crossed the popliteal fossa superficial to the tibial nerve and then inserted into both the heads of the gastrocnemius muscle. This anomalous muscle derived its nerve supply from the tibial nerve and the blood supply from the popliteal artery (Figs 1–2).

Discussion

Compressive neuropathy involving sciatic nerve within the popliteal fossa is very rare [5]. In this case report we speculate that the muscle variations in the popliteal fossa such as the anomalous muscle we found in the popliteal fossa may cause the compression of sciatic nerve. This may results in mimicking the manifestations shown by the compressive neuropathy involving the common peroneal or tibial nerve or both of them as they pass through the popliteal fossa.

Although tibial nerve entrapment can be seen anywhere along the course of the nerve, the most common location is distal to the ankle [6]. Entrapments above the ankle have been reported in the popliteal fossa, where the nerve is compressed by the tendinous arch of origin of the soleus muscle, a Baker's cyst, or other masses that may occur in this region [7]. Compression of the tibial nerve or one of its branches can occur because of intrinsic neural abnormalities or can be a result of external compression. External compression etiologies reported in the literature have included fibrosis, neurilemomas, ganglion cysts, lipomas, osteochondromas, varicosities, other benign and malignant tumors, tight tarsal canal, hypertrophic abductor hallucis, anomalous artery, and anomalous

extra muscles such as the flexor digitorum accessorius longus [6] or the muscle mentioned in this report.

Local trauma is the most common underlying cause of entrapment of the superficial peroneal nerve. Nontraumatic causes of entrapment are commonly due to anatomical variations such as fascial defects, with or without muscle herniation at the upper part of the lateral side of the leg, where the nerve is entrapped as it emerges into the subcutaneous tissue [8]. Deep pernoeal nerve entrapment is most commonly due to the repetitive mechanical irritation of the nerve at the ankle beneath the extensor retinaculum [9].

In case of sciatic nerve entrapment, surgeons have to be vigilant in considering the possible muscle variants in the popliteal fossa which may be one of the reasons of the compressive neuropathies when the symptoms persist or recovery remains incomplete.

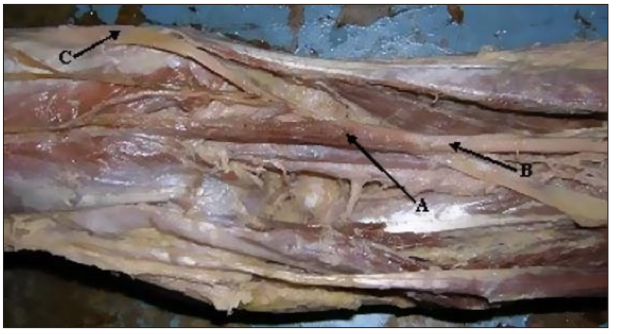

Figure 1. Popliteal fossa. *(**A:** The anomalous muscle; **B:** Sciatic nerve; **C:** Common peroneal nerve)*

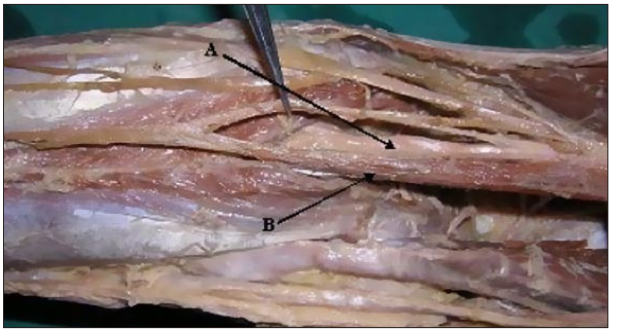

Figure 2. Popliteal fossa. *(**A:** Tibial nerve; **B:** Anomalous muscle)*

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