



Case Report

Huge juxtaneural ganglion cyst of the tibial nerve A case report and review of the literature

Riesiges juxtaneurales Ganglion des Nervus tibialis Fallbericht und Literaturübersicht

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KEYWORDS

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SCHLÜSSELWÖRTER

Tarsaltunnel;
Nervus tibialis;
Ganglion

Summary

Background: Huge juxtaneural ganglion cyst of the tibial nerve is rare.

Methods: A 58-year-old man presented with a 1-year history of vague numbness in the entire plantar area of the right foot. He complained of steady pain at the medial side of the right ankle. During examination, a painful and firm mass at the posteromedial aspect of the distal right leg was palpated. The mass extended down to the retromalleolar region. Magnetic resonance imaging showed a huge juxtaneural ganglion cyst of about 9 cm length compressing the tibial nerve.

Results: Meticulous microsurgical dissection and excision of the ganglion cyst was performed. The nerve was found flattened by the compressing mass without other morphological particularities. The origin of the ganglion was uncertain but probably linked to the upper ankle joint (posterior of the tibiotalar joint). At 32 months postoperative follow-up, the patient was completely free of pain.

Conclusions: Even after a delayed diagnosis of 1 year, meticulous excision of an intraneural ganglion cyst in the limited space of the posteromedial neurovascular bundle of the ankle could result in a good outcome.

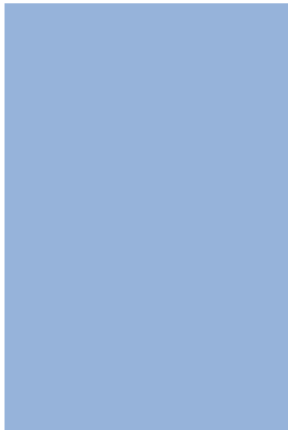
Zusammenfassung

Einleitung: Riesiges juxtaneurales Ganglion des Nervus tibialis ist selten.

Methoden: Ein 58-jähriger Mann stellt sich mit einer 1-jährigen Leidensgeschichte eines Taubheitsgefühls im gesamten Fußsohlenbereich des rechten Fußes vor. Er klagt

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seit dieser Zeit über Dauerschmerzen an der medialen Seite des rechten Knöchels. Bei der Untersuchung palpiert man eine schmerzhaft und feste Masse am postero-medialen Winkel des distalen Unterschenkels. Die Kernspintomographie zeigte ein riesiges juxtaneurales Ganglion von etwa 9 cm Länge, das den Nervus tibialis komprimiert. Es wurde eine sorgfältige, mikrochirurgische Präparation und Exzision des Ganglion durchgeführt. Der Nerv war auf einer Länge von 9 cm.

Ergebnisse: Durch die Kompression des Tumors abgeflacht. Der Ursprung des Ganglion war nicht festzustellen, aber wahrscheinlich war es mit dem oberen Sprunggelenk verbunden. Beim der letzten klinischen Kontrolle, 32 Monate postoperativ, war der Patient völlig schmerzfrei.

Schlussfolgerungen: Trotz einer verzögerten Diagnose von 1 Jahr kann die präzise und sorgfältige Exzision eines intraneuralen Ganglions im räumlich begrenzten Umfeld des posteromedialen neurovaskulären Bündels am Rückfuss ein sehr gutes Resultat ergeben.

Introduction

Tarsal tunnel is a fibro-osseous structure located posterior and inferior to the medial malleolus beneath the flexor retinaculum. It has four compartments including posterior tibial tendon, flexor digitorum longus tendon, posterior tibial neurovascular, and flexor hallucis longus tendon. Tarsal tunnel syndrome is an entrapment neuropathy of the posterior tibial nerve or its branches in the limited space of the tarsal tunnel. The most common causes of tarsal tunnel syndrome are space-occupying lesions such as ganglia, benign tumors, varicosities, perineural fibrosis, accessory or hypertrophic muscles and tendons, synovitis, and fluid retention [1].

Ganglia in the tarsal tunnel can be found in the tendon sheaths or the posterior tibial nerve [2,3]. Although the most common location of intraneural/juxtaneural ganglion cysts is at the fibular neck involving the common peroneal nerve [4], rare cases of posterior tibial nerve ganglion cysts have also been reported [5–8]. To the best of our literature review, although extreme intraneural cysts from the knee within the sciatic nerve to the lower buttock region were reported [9], the largest reported intraneural/juxtaneural cyst in the posterior tibial nerve measured $4.25 \times 4.0 \times 1.50$ cm.

Our case is unique because the cyst observed in our report had a proximal extension with a length of about 9 cm, and there was a significant delay in the diagnosis because of misdiagnosis as a nerve root irritation. The objectives of this present case study are using magnetic resonance imaging (MRI) to diagnose early, describing surgical treatment and clinical outcome.

Case report

A 58-year-old overweight man presented with a 1-year history of spontaneous vague numbness and tingling in the entire right plantar area and pain in the medial aspect of his right ankle. He could not recall any distinct injury. The symptoms were worse with jogging and running. He had bilateral multiple disc herniation not only in the lumbar area but also in the cervical area and had undergone multiple spinal decompression surgeries. Before experiencing symptoms related to the ganglion cyst, he developed paresthesia in the plantar surface area of the first ray. The cause of delay in referring the patient was misdiagnosis of disc herniation radiculopathy, and the patient thought that the pain and numbness were due to nerve root irritations in the lumbosacral region.

The physical examination showed that his legs and feet were symmetrical except for a small protuberance on the distal medial part of the right leg extending to the posterior part of the medial malleolus. It was painful, firm, and fixed to the surrounding tissues. Measurements of the circumference of the calf muscles at their bulkiest part showed differences of 2.5 cm (right: 45 cm, left: 47.5 cm). The range of motion of the right ankle was full and free of pain. Neurological examination at the referral time depicted no significant muscle atrophy or weakness despite 1-year delay in the diagnosis, but percussion on the tarsal tunnel produced radiating numbness in the medial plantar nerve distribution.

Radiographs of the right foot and ankle were normal except for a finding of slight tarsometatarsal arthrosis. MRI showed a large cyst filled with fluid beginning at the distal part of the posteromedial

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