



## SCIATIC NERVE COMPRESSION CAUSED BY A TRAUMATIC ANEURYSM, CASE REPORT

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### SUMMARY

A rare case of peripheral nerve compression by a traumatic aneurysm reported. The apparent of dysfunction of the sciatic nerve led to various surgical explorations of the nerve at different levels. The real localization of nerve entrapment was identified by a thorough clinical examination. Surgical wrapping of aneurysm resulted relief of pain. To the author knowledge this is the first report of a traumatic aneurysm in the calf and causing focal neuropathy.

**Keywords:** sciatic nerve, traumatic aneurysm, peripheral nerve entrapment.

### ÖZET

Bu çalışmada, periferik sinir basısına yol açan travmatik bir anevrizma vakası rapor edilmiştir. Siyatik sinir disfonksiyonunda sinirin çeşitli seviyelerden cerrahi eksplorasyonu uygulanır. Sinir tuzağının gerçek lokalizasyonu, klinik muayene ile doğrudan ortaya konulur. Anevrizmanın cerrahi olarak tedavisi, ağrının geçmesine yol açmıştır. Bizim bilgimize göre, fokal nöropatiyle sonuçlanan travmatik anevrizmayla ilgili bu vaka literatürdeki ilk vaka özelliğini taşımaktadır.

**Anahtar Kelimeler:** Siyatik sinir, travmatik anevrizma, periferik sinir tuzak sendromu.

**INTRODUCTION:**

Impingement on peripheral nerves by aneurysmal or thrombosed vessels has been identified as a cause of symptomatic peripheral nerve compression. Arterial vessels have been reported to compress peripheral nerves both spontaneously and as a result of the formation of true or posttraumatic false aneurysms. Spontaneous or traumatic aneurysm, however have rarely been described as a cause of focal neuropathy at different localizations. We report the case of a patient who harbored a traumatic aneurysm that impinged on the sciatic nerve, resulting in chronic nerve compression. Wrapping of the aneurysm resulted in relief of symptoms.

**Case Report:**

**History:** This 48-year-old man presented with a 5-month history of continual pain along the right leg with paresthesia and muscle weakness after a car accident and splenectomy. After 1.5 months from the operation because of his pain he went to emergency service and an injection was made to his right calf and then his leg pain began. The pain awakened the patient at night and he complained of right leg weakness, which increased during walking.

**Examination:** The patient had a weakness of right peroneus longus and brevis, extensor hallucis longus, extensor digitorum longus and brevis. He had a sharp pain on the sciatic nerve tract. And hypoesthesia at lateral tibial crest. Electrodiagnostic studies demonstrated peroneal nerve segmental delay and electromyography displayed chronic neuropathic changes in peroneal muscles.

**Operation:** The operation was performed using microsurgical procedures.

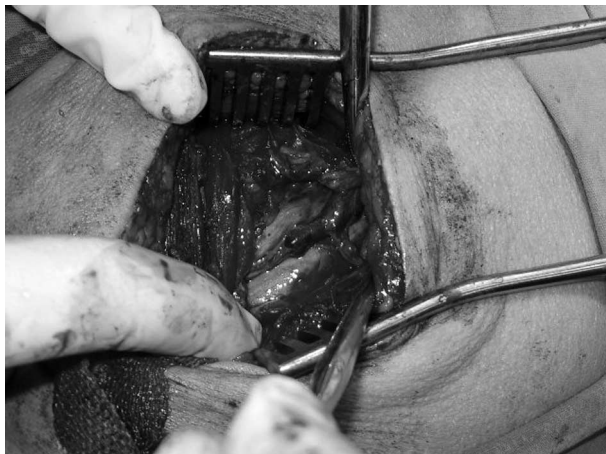
**DISCUSSION:**

Most common cause of a focal neuropathy is chronic peripheral nerve compression. Idiopathic entrapment syndromes of upper extremities such as cubital tunnel syndrome, carpal tunnel syndrome, pronator teres syndrome or Guyon canal syndrome are well-known clinical entities and other causes may include osteoarthritic processes, soft tissue tumors, bursa enlargement and synovial cysts. Vascular anomalies are less frequent causes of symptomatic peripheral nerve compression<sup>(6)</sup>. Arterial vessels have been found to impinge on peripheral nerves both spontaneously and as a result of posttraumatic false aneurysms<sup>(11)</sup>. Venous impingement on peripheral nerves has been described rarely<sup>(6)</sup>. The cause of sciatica can be conveniently divided into categories according to pathologic conditions within the nerve or according to compression by a pathologic structure. Compression by a pathologic structure can occur inside or outside of the pelvis. Intrapelvic causes affect the nerve as it courses from the neural foramina to greater sciatic notch<sup>(4)</sup>. Reported intrapelvic causes include tumors, hematoma in the psoas muscle, endometriosis<sup>(4)</sup>, tubo-ovarian abscess, an intrauterine device after uterine perforation<sup>(5)</sup>, an anorectal abscess above the levator and aneurysms (eg., abdominal aortic aneurysm)<sup>(3)</sup>. Extrapelvic causes affect the nerve as it courses from sciatic notch distally. Reported causes include gluteal artery aneurysms<sup>8</sup> and pseudoaneurysms<sup>(7,10)</sup>, tumors, gluteal abscess, piriformis muscle syndrome<sup>(12)</sup>, avulsion fracture of the ischial tuberosity<sup>(9)</sup> and migration of the broken trochanteric wires after total hip arthroplasty<sup>(1)</sup>. The occurrence of spontaneous venous malformation compressing peripheral nerves is rarely found<sup>(2,6)</sup>.

When arterial anomalies impinge on peripheral nerves they apply pulsatile pressure on the

nerve trunk. As is the case with cranial nerves, this may trigger ectopic stimulation of sensory fibers, leading to severe pain and sensory neuropathy, although motor function is usually preserved. In contrast, venous malformations are non-pulsatile masses. The nerve is exposed to continuous pressure by venous malformations, similar effect of tumorous lesions. In the present case the pulsatile pressure of the aneurysm resulted in pain in the sciatic nerve distribution. At the same time motor function is effected and gently palpation of the aneurysms localisation evoked a sharp irradiating pain. Following wrapping of aneurysm and neurolysis, the patient was partially free from pain and pressure of exerted on the postoperative scar caused no pain.

The patient had a diagnosis that depending on injection of analgesic drug. But at the operation we found there a traumatic pseudoaneurysm which is the main causes of the pain (Figure 1 and 2). Decompressing of the sciatic nerve was achieved by wrapping the aneurysm resulting in partially relief from pain.



**Figure-1)** Traumatic aneurysm shown which compress the sciatic nerve



**Figure-2)** Aneurysm compression of the sciatic nerve

The case presented in this article represents a rare occasion of peripheral nerve compression by a traumatic pseudoaneurysm. We propose that impingement by traumatic pseudoaneurysms can be considered when there's clinical evidence of focal neuropathy in trauma patients.

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