Sciatic nerve entrapment

Case report

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A case is presented of compression of the sciatic nerve at the back of the thigh. For 3 years after a minor injury, this patient had suffered from pain and paresthesia in the left leg. There were no neurological abnormalities; electromyography was performed twice and showed normal muscular activity. At operation the nerve was found to be rotated and compressed by a tough band of connective tissue. Postoperatively, all discomfort disappeared, and 5 months later the patient remained free of pain.

KEY WORDS nerve entrapment □ sciatic nerve □ neuropathy □ peripheral nerve □ myofascial band □ nerve compression

Radiating pain and paresthesia along the back of the leg are often associated with a herniated lumbar disc. This report presents a case of compression of the sciatic nerve at the back of the thigh, probably caused by a traumatic hematoma.

Case Report

This 51-year-old man was admitted to the Department of Neurosurgery with a 3-year history of toothache-like pain and paresthesia extending from the knee along the back of the calf to the heel. Symptoms occurred after sitting for 10 minutes, and disappeared again after a few minutes on standing up. Lying down also produced symptoms. He had to kneel when he was eating, playing cards, or watching television. He was able to hold his job as a butcher because he was standing up all day at work. There were no low-back pains or symptoms in the right leg.

A couple of months before the symptoms started, he had fallen down a slippery stone staircase, landing on the left buttock. He could not recall having a bruise on the thigh. X-ray films of the left femur at that time showed a small exostosis corresponding to the back edge of the lesser trochanter, and excision of this piece of bone gave some relief for about 2 months. Electromyography (EMG) of the left gastrocnemius muscle showed normal activity. Two years later, another EMG of the gastrocnemius and anterior tibialis muscles showed no motor unit loss. Maximal contraction resulted in normal amplitude. There was no increase in the presence of polyphasic potentials. Nerve conduction velocity was not recorded.

Examination. A non-tender well healed surgical scar, 10 cm long, was seen laterally and proximally over the left femur. No abnormalities were detected corresponding to the sciatic nerve, but percussion over the middle third of the back of the thigh produced paresthesias which descended toward the heel. There were no pareses or loss of sensation, and tonus was normal. No atrophy was observed. Lasègue's sign was negative on both sides.

Operation. The left sciatic nerve was exposed through an incision extending from the fold of the buttock to 5 cm above the knee. In the middle of the wound, approximately 10 cm distal to the fold of the buttock, the nerve was found rotated to the left and compressed by a strong myofascial band (Fig. 1 left). A branch to the biceps muscle was entwined by the band. The muscular branch was freed and adhesions were incised, after which the sciatic nerve slipped back to its normal position (Fig. 1 right). Directly beneath the constricting band, the nerve was flattened and revealed a slight but clearly pre-stenotic dilation. The nerve was normal on palpation, with no suggestion of an increased amount of intrafascicular connective tissue.

Postoperative Course. Postoperatively, the patient's
societies disappeared, and 5 months later he was still free of pain. He was now able to sit and lie quite normally.

Discussion

Entrapment of the sciatic nerve is an unusual type of neuropathy. In 1976, the first and so far the only reported case of compression of this nerve by a myofascial band was described. That case was thought to be caused by a developmental anomaly. Rapidly progressive impairment has been described in connection with a posterior compartment syndrome, with myositis ossificans of the femur, and with muscle fibrosis after repeated intramuscular injections. Wallach and Oren described a case of compression caused by bleeding into the gluteus muscle in a patient receiving anticoagulation therapy, and Solheim, et al., mentioned two cases with compression neuropathy caused by the piriformis muscle where the symptoms disappeared after the muscle was cut.

In all previous reports, involvement of the nerve was suspected because of neurological loss or abnormal electromyography. A search of the literature has revealed no previous examples of compression neuropathy of the sciatic nerve without neurological deficit in a patient with normal electromyography. It is apparent, however, that electromyography would have shown changes in our patient if the femoral biceps muscle had been examined for signs of denervation potentials and the nerve conduction velocity could have been measured. The most likely cause in the case described here is that, following the fall 3 years before, the patient had a small hematoma around the sciatic nerve which caused adhesions to form around the nerve. The brief improvement after excision of the exostosis of the lesser trochanter can be explained: the operation was performed from the lateral aspect of the femur, and the nerve must have been retracted to expose the bone. Some adhesions around the nerve must have been torn during retraction.

Pain and paresthesia along the sciatic distribution after trauma should suggest compression neuropathy even if there is no neurological deficit. A positive Tinel’s sign aids this diagnosis, and can identify the site of the lesion. Electromyography should not only be performed on the calf muscles but should also include the muscles on the back of the thigh; the conduction velocity should be recorded.

References


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