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Case Report **Pathology**

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SCIATICA SECONDARY TO SCIATIC NERVE SCHWANNOMA – A RARE CASE REPORT

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ABSTRACT

Schwannomas are encapsulated and benign peripheral nerve sheath tumors. Their occurrence in extracranial locations is rare. Schwannomas most commonly occur in adults between 20 and 50 years of age. Their symptomatology usually mimics sciatic pain due to herniated disc. The most common clinical presentation of sciatic nerve schwannoma is a painful palpable mass. A 25-year female patient was admitted to our neurosurgery department with a slow-growing mass in the medial right posterior thigh. Magnetic resonance imaging (MRI) showed a mass involving the right sciatic nerve in its middle portion. No neurological deficit was noted postoperatively. The result of the histopathological examination was reported as a schwannoma. We report a case of large sciatic schwannoma with chronic sciatica.

KEYWORDS: Peripheral nerve, Sciatic schwannoma, Sciatic nerve

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INTRODUCTION

The sciatic nerve is the largest nerve in the human body. Sciatica is a common disorder, which is frequently caused by lumbar disc herniation [1]. On the other hand some intraspinal or extraspinal pathologic causes which involve the sciatic nerve may result with sciatica. The intraspinal non-discogenic sciatica (NDS) can be diagnosed by lumbar vertebrae imaging; but the extra spinal causes are often misdiagnosed because the clinicians usually focus on the lumbar spine as the cause of disorder [1]. The extra pelvic causes which affect the sciatic nerve usually localized distally from the sciatic notch [1]. Schwannomas are the most common benign tumors of the peripheral nervous system, which are encapsulated and composed of Schwann cells, but sciatic schwannomas are rare [2]. In this article we reported a case of sciatic schwannoma which was treated successfully with surgical excision.

CASE REPORT

A 25-year-old woman was admitted to our surgery department with a slow-growing, painful swelling in her right posterior thigh. The swelling had been present for more than 2 years. Tinnel sign was positive on the posterior aspect of the right thigh. The Laseque test was positive on the affected side. He had no evidence of cutaneous abnormalities such as cafe´ au lait spots or freckling. Slit-lamp examination showed no posterior subcapsular cataracts or Lisch iris nodules. On physical examination, a painful isolated soft-tissue mass was detected in the posterior aspect of the right thigh. No motor deficit was detected on neurological examination. Magnetic resonance imaging showed a well-defined solitary space occupying lesion in the posterior mid thigh along the sciatic nerve. (Figure 1). FNAC impression was in favor of schannoma / benign spindle cell tomour. The patient underwent a linear midline skin incision on the posterior surface of the thigh. The schwannoma was seen in relation to the sciatic nerve. The tumor had originated from the main sciatic nerve trunk. The nerve fibers had got split and were running surrounding the tumor. (Figure 2). The tumor was enucleated from its capsule and the nerve repair was done as nerve fibers were split. (Figure 3).Complete excision of the tumor was performed. Macroscopically, the tumor was characterized by an encapsulated nodule 9 x6x6 cm with a firm greyish cut surface (Figure 4). There was no neurological deficit in the postoperative period. Microscopically, tumor tissue arranged in fascicles and whorled pattern. Individual tumor cells are elongated spindle shaped with ill defined cell borders with moderate amount of eosinophilic cytoplasm with oval shaped normochromatic nuclei with inconspicuous nucleoli.also seen are dilated congested blood vessels and psammoma bodies, features are of cellular schwannoma. The causes of sciatica can be classified as intraspinal and/or extraspinal disorders along the lumbar nerve roots and sciatic nerve. In 20% of cases, the discogenic and non-discogenic disorders cause sciatica [1]. In clinical practice the non-discogenic and extraspinal causes of sciatica are often misdiagnosed because of the high sensitivity lumbar disc hernias [1]. The differential diagnosis can be made by careful physical examination, neurological examination and radiological evaluation.

Magnetic resonance imaging

Figure 1
Magnetic resonance imaging showed a well-defined solitary space occupying lesion in the posterior mid thigh along the sciatic nerve.

Operative procedure

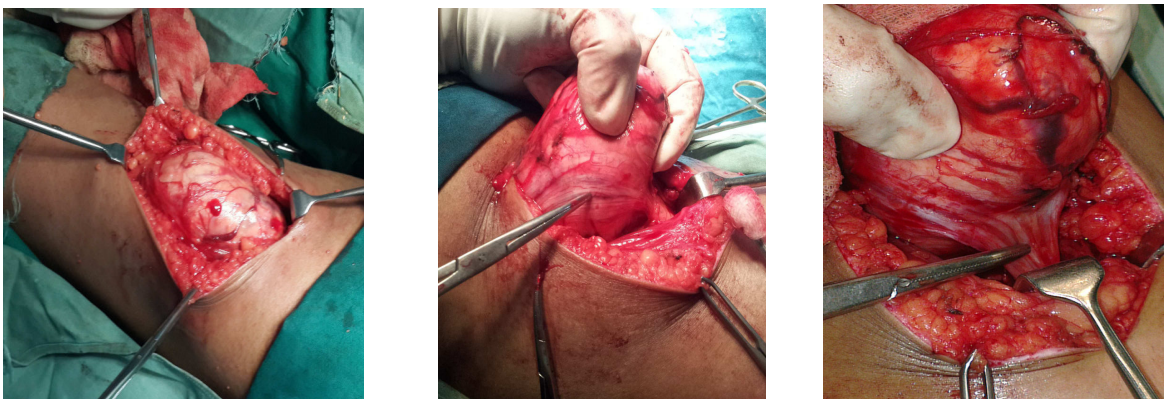

Figure 2
operative procedure showing the approach to the tumor, the sciatic nerve adherence with the tumor, the fibers of sciatic nerve get split and surround the tumor in medial and lateral sides.

Nerve repair

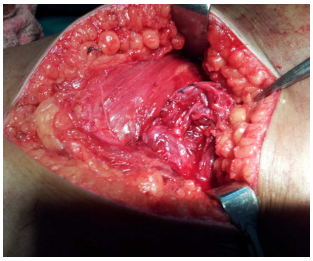

Figure 3
The tumor was enucleated from its capsule and the nerve repair was done as nerve fibers were split.

Tumor Specimen

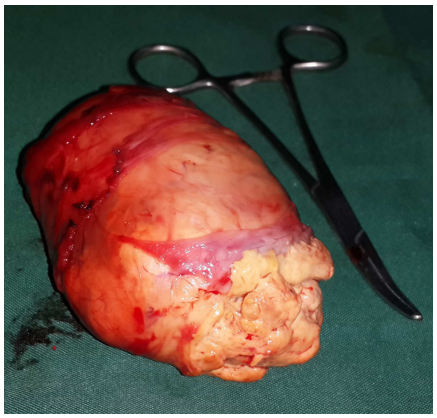

Figure 4
Tumor was encapsulated measuring 9x6x6 cm with a firm greyish cut surface.

DISCUSSION

The peripheral nerve tumors are usually benign lesions. The most common benign peripheral nerve tumors are schwannomas, which arise from the schwann cells of peripheral nerves [4-6]. One of the uncommon origins of the schwannomas is sciatic nerves, and they are more common at the females who are in the second to fifth decades [4]. The schwannomas are histological comprised of densely packed spindle cells as in Antoni type A or more loosely textured stroma as in Antoni type B. They are usually solitary lesions, but multiple lesions can be seen [4]. Multiple schwannomas can be found in patients with neurofibromatosis type II [4]. Our patient did not have the physical examination characteristics of neurofibromatosis type II. The clinical presentation of the lesions can be misdiagnosed, and there may be a difficulty of differential diagnosis between discogenic and non-discogenic causes [4]. Ghaly et al. reported a posterior tibial nerve schwannoma case who had been misdiagnosed as psychosomatic disorder for 10 years [6], and also there are other case reports which exists mid thigh sciatic nerve which mimicks plantar neuropathy foot pain [4]. Therefore, steps of the physical examination must be done before making the diagnosis [4]. In our case diagnosis of the lesion at the sciatic nerve was made by palpation and Tinnel test. The only unique clue to the diagnosis was the Tinnel's sign produced by tapping on the posterior thigh in patients like in the other cases at the literature [4]. For further evaluation of the lesion MRI of the hip was performed and diagnoses were approved. Sintzoff et al [7] and Kralick et al [4] described sciatic nerve schwannomas, and emphasized the MRI characteristics of the lesion as increased signal on T2-weighted fast spin-echo and short tau inversion recovery fast spin-echo pulse sequences with clinical and electrophysiological evidence of nerve injury. Persing [8] postulated that a ''double crush'' nerve injury could explain their patient's symptoms, but in our patient there was not any history of surgery or trauma at the sciatic nerve. In our case we could not see the same MRI characteristics of nerve injury, but other MRI characteristics of the schwannoma helped us to plan our surgery and made a successful excision of the lesion with good recovery. Oberle et al [3] reported 16 cases that had peripheral nerve schwannoma (one sciatic nerve) and performed total excision of the mass without recurrences. They emphasized that the surgeon who would do the procedure must have special expertise in peripheral nerve surgery to reduce the risk of neurological deficits. We made the surgical excision of the schwannoma within the principles of microsurgery under microsurgical equipment and microscope. In conclusion sciatic nerve schwannoma, one of the nondiscogenic sciatica causes, could be misdiagnosed

during clinical practice. The diagnosis can be successfully done by physical examination and MRI examination of the lesion at the sciatic nerve. Good clinical results can be obtained with total surgical excision of the mass under microsurgical principles.

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