Schwannoma of Sciatic Nerve: A Rare Cause of Non-Discogenic Sciatica

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ABSTRACT
Sciatic nerve schwannoma is a rare cause of non-discogenic sciatica and its symptomatology is usually confused with other pathologies, resulting in late diagnosis. We report a patient with sciatic nerve schwannoma treated as lumbar disc herniation for a long time. It is stressed that patients with sciatica should be evaluated in detail when the signs and symptoms are not well attributed to discogenic reasons.

KEY WORDS: Diagnosis, Sciatica, Sciatic nerve schwannoma

INTRODUCTION
The sciatic nerve is the largest nerve in the human body and originates from nerve roots from lumbar 4, 5 and sacral 1, 2 and 3 segments. Various pathologies cause sciatica and the most common etiology is lumbar disc herniation. Schwannoma of the sciatic nerve, however, is rarely diagnosed as the cause of sciatica (4,5,9,11). In this manuscript, we report a patient who presented with sciatica due to a sciatic nerve schwannoma.

CASE PRESENTATION
A 26-year-old female attended our neurosurgery department for left lower limb and hip pain and paresthesia of five-year duration. She was diagnosed with lumbar disc herniation and received medical and physical treatment for a long duration of time due to a small bulging on lumbosacral magnetic resonance examination. Neurological examination was found. Tinel sign was positive on the posterior aspect of the left thigh. No motor or sensory deficit was detected. On her coronal and axial STIR-MR examination, an approximately 3x3 cm mass lesion on the sciatic nerve path complying with a peripheral nerve sheath tumor was detected (Figure 1A,B). She was operated and the left sciatic nerve was exposed through a posterior median approach. A peripherally located tumor originating from the main sciatic nerve trunk was identified and the tumor was enucleated from its capsule without any damage to the sciatic nerve (Figure 2). Postoperatively, she was symptom free and without any neurological deficit. The result of the histopathological examination revealed a diagnosis of schwannoma (Figure 3A,B). Postoperative coronal and axial T1-weighted MR examination revealed no residual tumor (Figure 4A,B).

DISCUSSION
Sciatica is a common disorder frequently caused by lumbar disc herniation. However, several other pathologies such as piriformis syndrome, sacroilitis or hip arthrosis may also cause sciatica (Table 1) and in 20% of the patients sciatica may results from both discogenic and non-discogenic reasons (1,6). As a result, patients with sciatica should be evaluated in detail considering a detailed history and pain characteristics together with a complete physical, radiological and neuro-physiological examination.

Schwannomas are benign encapsulated nerve sheath tumors commonly presenting between the ages of 20 and 50 (3). Frequent locations for schwannomas are...
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Figure 1: Coronal (A) and axial (B) STIR-MR examination showing a mass lesion on the sciatic nerve path complying with a schwannoma.

Figure 2: Intraoperative view of peripherally located tumor originating from the main sciatic nerve trunk and tumor excision.

Figure 3: Pathological examination showing the tumor consists of spindle cells without pleomorphism (A). Immunohistochemically, tumor cells were positive for S-100 protein (B) and negative for SMA, desmin, CD-31 and Ki-67 index was 1% complying with the diagnosis of schwannoma.
head, neck and main nerve trunks. They usually present as a slowly growing soft tissue mass but they may cause pain and neurological deficits when their size increases. Schwannoma in the sciatic nerve, on the other hand, is a rare condition with a reported frequency of less than 1% (9). Like other peripheral nerve schwannomas, it can be asymptomatic or can present with pain, paresthesia or neurological deficit in the sciatic nerve distribution, as in our patient. For the diagnosis, computerized tomography (CT) or magnetic resonance imaging (MR), and especially MR-neurography is very useful (2,8). On CT, schwannoma presents as a well-defined iso- or hypo-dense mass lesion and shows enhancement after contrast medium administration. On MR, schwannomas are iso-intense on T1-weighted images, hyper-intense on T2-weighted images and enhance after intravenous gadolinium. Preoperatively, schwannomas can be differentiated from neurofibromas with their MR characteristics, as neurofibromas appear more heterogenous on T1 and T2-weighted MR images; however, definitive diagnosis is provided by histopathological examination (10). From the surgical aspect, unlike neurofibromas which severely affect the nerve with complete resection usually resulting in neurological deficits, schwannomas arise within the nerve sheath and are surrounded by a true capsule consisting of epineurium enabling a complete enucleation without damage to the parent nerve.

In conclusion, schwannoma is rare cause of sciatica and it should be considered in the differential diagnosis of sciatica especially when the signs and symptoms of sciatica cannot be simply explained by discogenic reasons.

**REFERENCES**


Table 1

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