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Right sciatic nerve schwannoma with complete ACL tear: A rare presentation

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Abstract

Sciatic nerve schwannoma is a rare disease, often misdiagnosed as sciatica in patients with no prolapsed disc in the lumbar spine and a negative straight leg raise test. MRI followed by biopsy is the investigation of choice. We present a case of a 45-year-old male with a 2-year-old history of right lower limb radiculopathy with 2 months old ACL tear. MRI revealed right sciatic nerve mass which was confirmed to be schwannoma on biopsy by FNAC. ACL reconstruction was done followed by schwannoma excision and sciatic nerve reconstruction by using cable nerve grafts. Post-operative histopathological examination reconfirmed Sciatic nerve Schwannoma. This case has been highlighted to highlight the unusual manifestations of sciatic nerve schwannoma to prevent its misdiagnosis and delayed treatment.

Keywords: Schwannoma, sciatic nerve, reconstruction, ACL, biopsy

Introduction

Schwannoma, also called neurinoma or neurilemmoma, is a benign peripheral nerve sheath tumor arising from cranial nerves and cutaneous nerves of the head and neck. Schwannomas of the sciatic nerve are very rare (1%) and diagnosis can be delayed for a long period of time, usually symptoms being attributed to lumbo-sacral degenerative pathology. It remains a probable diagnosis in patients that present with symptoms of sciatica with no prolapsed disc in the lumbar spine and a negative crossed straight leg raise test, suggesting the presence of a far lateral disc. Magnetic resonance imaging (MRI) along the course of the sciatic nerve followed by biopsy is the cornerstone for coming to a correct diagnosis and thereafter implementing a right therapeutic decision. Delaying the accurate diagnosis in such cases can lead to late presentation of the disease with sequelae of compression over the nearby structures leading to chronic pain. We report such a rare patient of sciatic nerve schwannoma diagnosed and managed successfully.

Clinical History

A 45-year-old male presented in the outpatient department (OPD) at our institute with a 2 years history of pain and tingling sensation in the right thigh radiating to right lower limb with pain and instability in the right knee joint since 2 months.

He had a/h/o trauma due to fall from bike 2 months.

History of constitutional symptoms was absent.

Thigh Pain was mild to moderate, radiating to right lower limb, more on posterior and lateral aspect of thigh, gradually increasing and partially and temporarily relieved on medication associated with a mass on posterior aspect of mid-thigh which was insidious in onset, gradually progressive and noticed by the patient 6 months back. The pain has now restricted his daily activity of living as well.

Following trauma he developed pain over his right knee which was associated with instability. On examination right knee; Anterior drawer and Lachman test were positive with no gross bony tenderness. Spine and Hip examinations were normal.



Fig 1: MRI showing right sciatic nerve schwannoma

Investigations

Pre Operative Profile, hemogram and ESR were within normal limits.

X-ray RIGHT knee and RIGHT thigh were normal.

MRI of the thigh showed a well defined lobulated heterogeneously enhancing solid soft tissue mass in the deep intermuscular space of the posterior compartment in the lower part of right thigh of size 4.2X3.6X3.6 cms appearing hyperintense on T2W and hypointense on T1WI.

There was also an associated tear in the mid substance of ACL with horizontal tear in Medial and lateral meniscus.



Fig 2: T1 weighted MRI showing right sciatic nerve mass? Schwannoma

Management

- Oncosurgery opinion was sought and patient was planned

for USG guided Fine Needle Aspiration Cytology.

- Histopathological Examination was Suggestive of sciatic nerve schwannoma.
- After clearance from surgical oncology, patient was planned for ACL reconstruction and meniscal balancing.
- Diagnostic arthroscopy with ACL reconstruction using hamstring graft and medial and lateral meniscal balancing and debridement was done on 04/10/2022.
- Patient was mobilized on post operative day 1 with a long knee brace and Knee Range of motion exercises were started.
- Patient was discharged from orthopaedics department and on 1st November 2022; patient got operated elsewhere where surgical exploration of right sciatic nerve was done.
- Intraoperatively, the tumor was found to be encasing the nerve; tumour was excised taking 1 cm margin both proximally and distally and nerve reconstruction was done using cable nerve graft.
- Post operative histopathological examination confirmed Schwannoma of the sciatic nerve

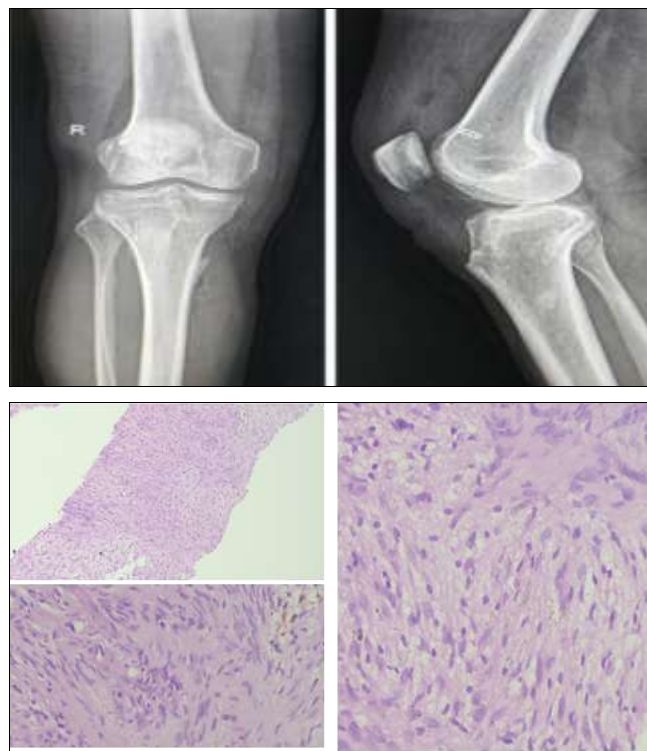


Fig 3: HPE Images Showing Multiple Core Strips of Tumor Tissue Composed Of Spindle Cells with Elongated nuclei, Eosinophilic Cytoplasm Forming Loose Sheets & Cellular Areas Few Verocay Like Body Seen S/O Schwannoma



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REPORT

Report Id# 11608958-01	UHID # 4345260	Name : MR. SUNIL PANDIT
Report Date :28/09/2022 15:49	Registration: ADMIT-799623	Consultant : Dr. --NA--
Sample Date :26/09/2022 11:39	Age : 45 Y Male	Ward : 310 (M) - 3F, C BLOCK
HPE/CPE # : 7407/22		

HISTOPATHOLOGY (SMALL)

CLINICAL DATA:
 ? Never sheath tumor

SPECIMEN:
 SOL in right thigh posterior aspect

MACROSCOPIC:
 Multiple soft tissue strips aggregate measuring 0.4-1.7 cm in length. All tissue processed.

MICROSCOPIC:
 The section shows multiple core strips of tumor tissue composed of spindle cells with elongated nuclei, eosinophilic cytoplasm forming loose sheets & cellular areas few verocay like body seen.

IMPRESSION:
 Suggestive of Schwannoma.

Checked By : -- 11244 DR.AMIT VARMA


 Dr. Amit V Varma, MD

Fig 4: Histopathological Examination Report



Fig 5: Post-Operative Day 5 of ACL Reconstruction Clinical Images

Discussion

Schwannomas are the most common peripheral nerve sheath tumors. The posterior tibial nerve at the tarsal sinus is the most frequently involved nerve of the lower limb. Involvement of the sciatic nerve is rare and represents less than one over 100 cases. The nerve might be affected by the tumor all along its course. Malignant transformation of benign schwannomas is unusual. The most common schwannomas have a long subclinical course and their clinical presentation is usually misleading. Radicular pain or sensory or motor loss is often misdiagnosed for radicular pain secondary to degenerative spine pathology. Detailed history, with long-lasting radicular pain, unresponsive to anti-inflammatory therapy and rest, and physical examination absence of lumbar contracture, a negative Lasègue's test, and lumbar spine MRI showing no signs of disc herniation, raise suspicion of non-discogenic sciatica and peripheral nerve pathology. In such cases MRI imaging of the entire limb confirm the diagnosis of a peripheral nerve tumor. Surgical excision is the treatment of choice. Schwannomas are theoretically removable since they repulse fascicular groups without penetrating them thus allowing their enucleation while preserving nerve continuity, as reported in our patient. Microsurgical excision should be performed using electrical stimulation to facilitate detection of motor fascicles. The sciatic nerve fascicles might sometimes be incorporated peripherally on the tumor capsule thus requiring to be sacrificed. Although rare, schwannoma of the sciatic nerve should be systematically suspected if persistent sciatica is reported in young adults with no signs of radicular compression at imaging. Slice imaging, especially MRI, can help improve detection and perform differential diagnosis between schwannoma and neurofibroma. However, diagnosis should be histologically confirmed.

Conclusion

Though rare, sciatic nerve schwannoma should be taken into account for the differential diagnosis in a patient presenting with long standing sciatica without positive findings of a disc in the lumbar spine. The symptoms are often vague, leading to late diagnosis. Rarity of the lesion and atypical presentation makes sciatic nerve schwannoma a difficult diagnosis on clinical grounds. MRI imaging of the nerve followed by biopsy is prudent for the diagnosis of the lesion. It is imperative to outline the course of the nerve and to define the boundary of the lesion to preserve the nerve fascicles. This case has been reported to highlight the unusual manifestations of sciatic nerve schwannoma to prevent its misdiagnosis and delayed treatment.

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