

An unusual cause of foot drop in a young boy

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A 13-year-old boy presented with a 1-month history of progressive weakness in the distal left lower limb. He complained of dragging his left foot while walking. There was no family history of similar events or history of trauma. No significant back pain or urinary disturbances. General examination revealed no neurocutaneous markers or hypopigmented lesions. Clinical examination revealed weakness involving the dorsiflexors and evertors of the left foot with foot drop. Deep tendon reflexes were well elicited. There was evidence of decreased sensations along the superficial peroneal nerve distribution. There was no evidence of radicular pain. A clinical diagnosis of a left common peroneal neuropathy was made and he was investigated for the same.

Blood investigations including vasculitic markers were negative. A nerve conduction study showed evidence of axonal neuropathy of the left peroneal nerve with decreased motor amplitudes on stimulation at the ankle and knee. He underwent a magnetic resonance imaging (MRI) with contrast of the left peroneal nerve (Fig. 1) which showed a lesion of size 5×6×7 mm, compressing the left common peroneal nerve proximal to the knee joint. There was evidence of denervation changes in the muscles of the anterior and lateral compartments of the leg (Fig. 2). The lesion was hyperintense on fat-suppressed and T2 sequences with significant enhancement on post-contrast images (Figs. 1 and 3).

Intraneural hemangioma was considered the most likely diagnosis due to hyperintensity on T2 MRI sequences and enhancement on contrast. The other possibilities considered were intraneural schwannomas and neurofibromas. Due to imaging evidence of neural compression and muscle atrophy with foot drop, surgical management was considered the best option. Plastic surgery opinion was taken and microsurgical resection and graft repair of the nerve lesion was planned on an elective basis.

Peripheral nerve hemangiomas are extremely rare soft-tissue tumors in the general population. The median nerve in the upper limbs is most commonly involved followed by tibial, ulnar, and peroneal nerves [1]. Patients generally present with motor and sensory deficits along the course of the affected peripheral

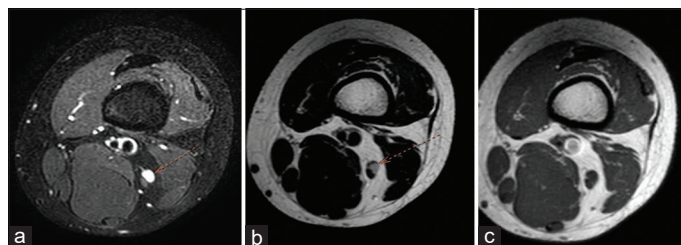


Figure 1: Magnetic resonance imaging scans taken 9 cm above the knee joint showing a lesion of size 5 by 6 by 7 mm within the proximal peroneal division of the left tibioperoneal trunk with nerve fascicular compression. The lesion is hyperintense on fat-suppressed images (a) and T2 sequences (b) and isointense on T1 sequences (c)

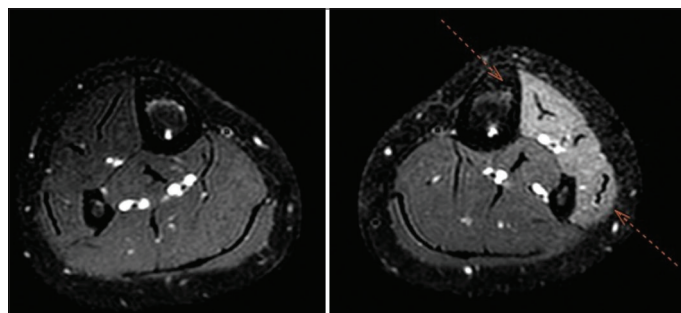


Figure 2: Axial short tau inversion recovery image below the level of the knee showing diffuse denervation edema of muscles innervated by peroneal nerve on the left leg

nerve [2]. Palpable mass along the course of the nerve has been reported. There are very few case reports of common peroneal nerve hemangiomas presenting with foot drop. These tumors have been classified into three types according to the nerve structure involved [3]. Type 1 is extrafascicular malformation which can be surgically excised, Type 2 is intrafascicular involvement whose removal is technically difficult. The rare Type 3 has both intra- and extra-fascicular components.

Diagnostic workup includes nerve ultrasound, nerve conduction studies, and MRI scans. Hemangiomas on MRI appear hyperintense on T1- and T2-weighted and fat-suppressed sequences with intense enhancement after gadolinium administration [4]. T1 sequences may also show flow voids and

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Figure 3: Axial post-contrast image at the level of the lesion showing intense homogenous enhancement of the lesion

feeder vessels. Histopathological examination is the gold standard for diagnosis.

Complete surgical excision of the tumor is the treatment of choice and effective microsurgical removal is essential to prevent recurrences [5]. Conservative treatment is usually not effective. Radiotherapy has also been used successfully for tumor recurrences.

Intraneural hemangiomas are a rare but important cause of peripheral nerve motor weakness which has to be kept in the

differential diagnosis. Early detection is important for complete surgical excision and better outcomes. This report also aims to highlight the importance of MR neurography as an important diagnostic tool for the investigation of peripheral nerve entrapment syndromes, especially in young people.

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