LARGE NEUROFIBROMA OF THE COMMON PERONEAL NERVE

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ABSTRACT

INTRODUCTION

Neurofibromas are benign tumors of the peripheral nerves. Peroneal involvement is uncommon with only a handful of cases documented in the literature. Due to intimate association between nerve and tumor, surgical resection with total preservation of nerve function is difficult. We describe a case of a middle-aged female who had a common peroneal nerve neurofibroma managed successfully with surgical resection and epineural repair and aggressive post-operative protocol. The patient is disease free at 6 months post-operatively with almost complete return of nerve function.

KEYWORDS

Neurofibroma, Common Peroneal Nerve, Excision, Recovery.

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INTRODUCTION: Neurofibromas are benign tumours of the peripheral nerves that can affect any nerve in the body, from the dorsal root ganglion to the terminal nerve branches. Peroneal nerve involvement is uncommon, with only a handful of cases reported in the literature. Due to intimate association between the nerve and the tumour, it is difficult to dissect the nerve without some damage. We describe a case of a middle-aged female who had a common peroneal nerve neurofibroma where surgical resection and epineural repair was carried out. The patient had near total return of nerve function at 6 months post-operatively.

CASE REPORT: A 60 years old female presented with chief complaints of pain and a large swelling in the lateral aspect of upper one third of left leg since the past one year. The pain was mild in intensity, burning in character and off and on in nature. There was no diurnal variation or radiation of pain. On examination, there was minimal tenderness in the same region. Patient had no history of any systemic illnesses or constitutional symptoms.

On examination, Swelling was 10cm X 8cm hard mass, non-tender. Not attached to skin. Not mobile freely. No skin changes over the swelling were noted. No local rise of temperature appreciated. Tinnel's sign was negative. No bruit heard on auscultation. Transillumination test was negative. No neurovascular deficit was noted.

Magnetic Resonance Imaging (MRI) of the leg were advised for further evaluation. MRI revealed a round to oval lesion measuring 9x8 mm below the fibular neck in the peroneal compartment indenting the peroneus brevis muscle, exhibiting intermediate signal intensity on T2 weighted images [Fig. 2] and hyper intense signal on FSEIR image [Fig. 3]. Later on patient was taken up for surgery. During surgery the nerve was found to be entrapped in the lesion. Careful excision of the mass was done around the nerve with epineural repair done with Prolene 3-0. Although the extent of repair required around the nerve could not be distinguished at the time of surgery and good surgical experience was relied on. Excision of the lesion was performed and subjected to histopathological examination.

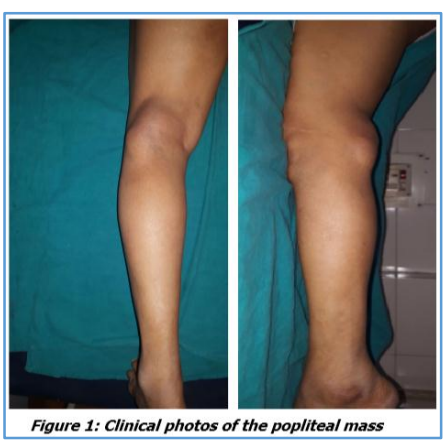
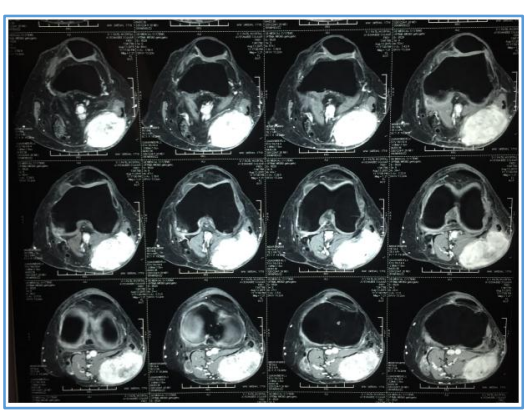


Figure 1: Clinical photos of the popliteal mass



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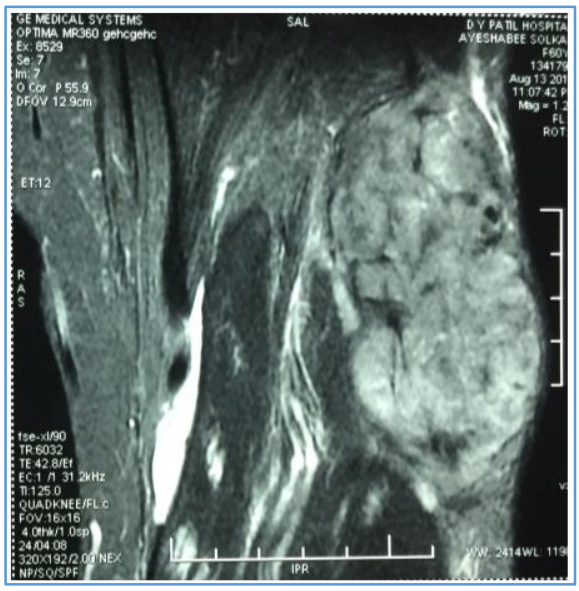

Figure 2: Pre-operative MRI showing a large heterogeneous mass in the posterolateral popliteal space with increased signal intensity on STIR images and having a vessel/nerve entering and exiting the lesion

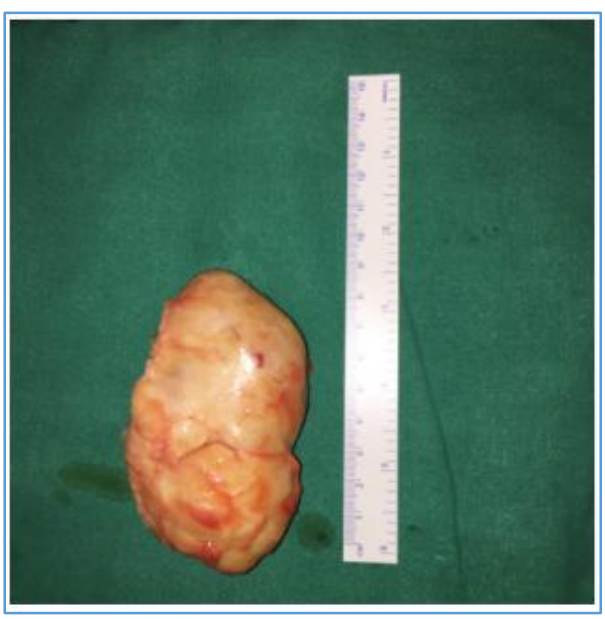

Figure 3: Intraoperative images showing a large mass arising from the common peroneal nerve and the bed of the tumour once excised

Post operatively the patient had a power grading of the affected foot of 3/5 as per the MRC power grading. Aggressive physiotherapy and nutritional supplementation of multivitamins as started for the patient immediately for the patient. Over a period of 6 months the patient had a power recovery of 5/5 as per MRC grading and is able to walk and go about her daily routine without any difficulty.

DISCUSSION: Neurofibromas are benign tumours that involve the fascicles of elongated neuron cells. They arise from a combination of neural cells including Schwann cells, peri-neural cells, and fibroblasts. They can arise anywhere in a peripheral nerve, from the dorsal root ganglion to the terminal nerve branches, although peroneal involvement is uncommon.[1] Clinically they are typically painless masses with a positive Tinnel's sign, although they can cause debilitating neurogenic pain and nerve dysfunction. The vast majority of neurofibromas are localized and not associated with neurofibromatosis type 1 (NF-1).[2]

Schwannomas and neurofibromas cannot be definitely differentiated based on imaging alone[1]. Typical imaging findings are fusiform shape, the nerve entering proximally and exiting distally and a split-fat sign, representing the normal fat around a neurovascular bundle. A well-defined margin and the presence of a split-fat sign suggest benignity.[3]

Due to intimate association between the nerve and the tumour, surgical resection of the neurofibroma with total preservation of nerve function has been thought to be difficult. Chang and Shieh (2006) were able to resect the neurofibroma from the peroneal nerve with satisfactory maintenance of peroneal nerve function.[4] Cebesoy et al (2007) documented a case of giant plexiform neurofibroma of the common peroneal nerve in a child which was followed 1 month later by multiple tendon transfers.[5]

CONCLUSION: Neurofibromas arising from the common peroneal nerve are rarely reported in the literature and are difficult to distinguish from schwannoma using imaging alone. We present a case of a large neurofibroma arising from the common peroneal nerve, which was surgically resected with epineural repair of the common peroneal nerve sheath. The patient had near total return of nerve function at 6 months post-operatively with an aggressive rehabilitation program.

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