Diagnostic Dilemma: A Case Report of Isolated Foot Drop

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Authors’ contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

Article Information

DOI: 10.9734/JPRI/2022/v34i34A36149

Open Peer Review History:

This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: https://www.sdiarticle5.com/review-history/82983

Received 12 February 2022
Accepted 22 April 2022
Published 26 April 2022

ABSTRACT

The Foot drop in which the patient is unable to or has difficulty performing dorsiflexion of the ankle joint. The causes of this condition are Lower motor neuron disease or Upper motor neuron disease with the former being much more common than the latter. We hereby present a case of a 41-year-old male who presented to the Outpatient Department with complaints of difficulty in walking and weakness of the left foot since the past 4 months. Neurological examination found 1/5 power of the left ankle dorsiflexors along with the presence of ankle clonus. Radiological investigations of the spine did not show any abnormality. Nerve conduction study of the lower limbs was also found to be normal. A plain CT scan of the brain showed the presence of a hyperdense lobulated mass on the right parietal lobe. Patient was referred to Neurosurgery after diagnosis was made where he underwent surgery for removal of the lesion. Patient’s ankle dorsiflexion power improved to 4/5 three weeks post surgery.

Keywords: Foot drop; orthopaedic outpatient; neurosurgery; Hallucis Longus.
1. INTRODUCTION

Foot drop is a condition in which the patient loses the ability to dorsiflex the foot at the ankle joint secondary to either a Lower motor neuron or an Upper motor neuron cause. It may be associated with Extensor Hallucis Longus weakness [1,2]. The relatively common causes of foot drop include Intervertebral disc prolapse at L4-L5 level and common peroneal nerve neuropathy. UMN causes leading to isolated foot drop are rare and are thus likely to be missed [3,4]. This might result in a delay in the treatment or misdiagnosis of the patient.

2. CASE PRESENTATION

A 41-year-old male presented to the OPD with complaints of difficulty in walking and weakness of the left foot since 6 months. Patient started having difficulty in putting on and holding on to his slippers. Weakness was insidious in onset and progressive. He had no history of low back pain or numbness in the lower limbs. No history of trauma to the proximal aspect of left leg. On clinical examination, he had a high stepping gait on the left side. The tone of the lower limb muscles was normal. Sensation over bilateral lower limbs was intact and equal. On the left side, the power of ankle dorsiflexion was 1/5 and of the Extensor Hallucis Longus was 3/5. Power in all other muscle groups was 5/5. Knee and ankle jerks were brisk bilaterally. Superficial plantar reflex showed flexor response on both sides. Ankle clonus seen on the left side. X-ray and MRI of the spine showed no abnormalities. The patient further underwent a Nerve conduction study of both lower limbs which was unremarkable. On doing a Plain CT scan of the brain, a large, hyperdense, lobulated, extra axial parasagittal lesion was seen in the right parietal lobe.

Fig. 1. CT scan report 1 [Neurological examination]
3. DISCUSSION

Foot drop can be caused due to Central and Peripheral causes. Central causes are relatively rare and most often the cause of foot drop is peripheral. Some common peripheral conditions are Lumbar radiculopathy at L4-L5 intervertebral disc level, common peroneal nerve injury, sciatic nerve affection or iatrogenic injury to the nerves.

Upper motor neurons are found in the brainstem and cerebral cortex and synapse with the Lower motor neurons at the anterior horn of the spinal cord. These central causes can take the form of tumours, compression of the spinal cord, infarcts or demyelinating plaques. Tumours are typically found in the parasagittal region and commonly comprise of meningiomas, gliomas or astrocytomas. These tumours have mass effect over the medial part of the motor homunculus which controls the motor activity of the foot and ankle and cause symptoms in this manner.

Narendhiran, Ganesalingam et al. [5] published that only 18 cases of central foot drop have been reported in English language literature out of which 6 have been parasagittal meningiomas with the other causes being gliomas, cerebral contusions, abscess or demyelinating plaque.

4. CONCLUSION

Foot drop due to central lesions are relatively rare and this might result in the misdiagnosis or delay in the treatment. It is advisable to look for central lesions as a cause of foot drop when the common causes have been ruled out or if the symptoms are atypical or a combination of Lower motor neuron and Upper motor neuron features.

CONSENT

As per international standard or university standard, patients’ written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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DOI: 10.4103/2152-7806.77594

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Peer-review history:
The peer review history for this paper can be accessed here:
https://www.sdiarticle5.com/review-history/82983