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Case Report

Foot Drop as a Result of Bilateral Parasagittal Meningioma: A Case Report

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ABSTRACT

Foot drop has been known to occur in peripheral and spinal lesions and in muscular dystrophy as well as with central lesions. Insufficient neurological examination may result in an unnecessary investigation and delayed diagnosis. In this case report, the foot drop due to parasagittal meningioma was the first clinical presentation.

KEY WORDS: Foot Drop, Meningioma, Parasagittal

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INTRODUCTION

Foot drop is caused by either peripheral and spinal neuron lesions or muscular dystrophy (1, 3). Most clinicians encountering a case of foot drop generally consider the peripheral nerve lesions. Although this is true in most cases, it would be erroneous to generalize this way of thinking. Foot drop may be occurring with central lesions. Lesion in the parasagittal region near the motor strip for the leg area may produce foot drop. This type has been called spastic foot drop (4, 5). Failure to consider this possibility may result in unnecessary investigations and delayed diagnosis and treatment.

In this report, we present a case with foot drop caused by a bilateral parasagittal meningioma.

CASE REPORT

A 68-year-old female patient was admitted to our clinic with a complaint of left foot weakness. This complaint has started nearly 3 months ago and lumbar magnetic resonance imaging (MRI) had been performed in another clinic previously. According to MRI and clinical examination findings, the patient had been operated for left lumbar 4-5 disc herniation at the previous center (Figure 1), Three months later, cranial MRI had been performed due to progressive and severe headache. Cranial MRI had showed that a bilaterally parasagittal parietal lesion with homogeneous dense enhancement following contrast infusion (Figure 2). Neurological examination revealed steppage gait along with left foot drop, left lower limb hyperreflexia, and left positive Babinski sign. There was no atrophy, leg pain, fasciculation, or sensory deficits in the upper and lower limbs. Straight leg raising test was negative. Bilateral parietal craniotomy was performed and the tumors were totally resected at our clinic. The histopathological examination revealed a fibroblastic meningioma. During the postoperative follow up, no additional neurological deficit or any improvement in the spastic foot drop was detected.

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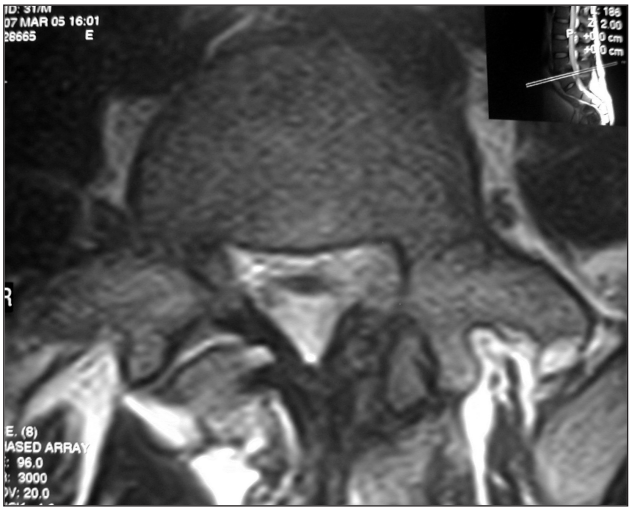

Figure 1: Lumbar MRI showing postoperative laminectomy at the level of left 4-5.

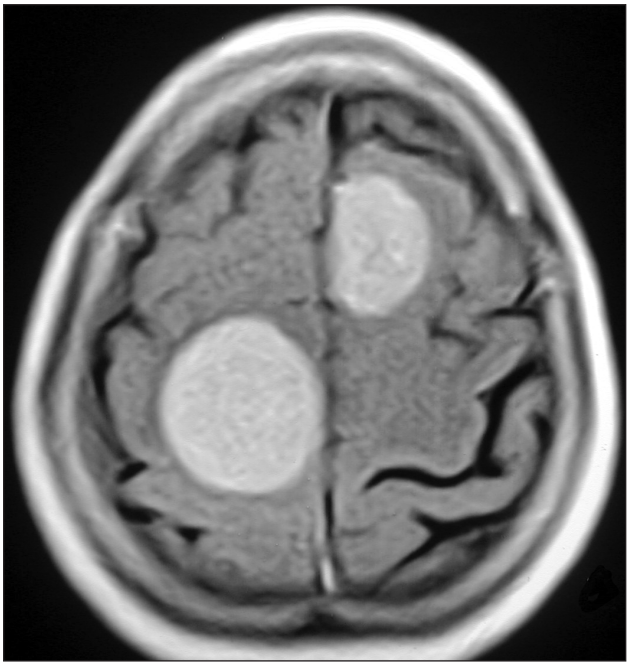

Figure 2: Postcontrast T1-weighted axial section MRI showing bilateral parasagittal meningioma.

DISCUSSION

Foot drop usually reminds the physician of a peripheral nerve lesion. Although this is true in most cases, it would be false to generalize this way of thinking (4, 8). Brain localization studies of motor cortex have precisely determined the somatotopic localization of ankle and toe in the parasagittal region (2). The cerebral cause of foot drop would not be missed in head injury patients, or in those with clinical features clearly indicating cerebral pathology. However, there remains a group of foot drop patients with central pathology. These patients have a clinical presentation resembling peripheral causes of foot drop but an upper motor neuron lesion may be differentiated if the Babinski sign or hyperactive ankle jerk is present (7). The classical presentation of lumbar disk herniation is with clinical findings such as leg pain, sensory deficits, atrophy, impaired motor function, positive straight leg raising test, and hyporeflexia. Motor evoked potential (MEP) and tibial somatosensory evoked potential (t-SEP) recordings are abnormal with cranial lesions while electromyography (EMG) and neuropsychological tests give normal results (6). EMG, t-SEP and MEP can be utilized to differentiate central lesions from peripheral causes of foot drop.

In this case, the spastic foot drop due to parasagittal meningioma was the first clinical presentation. The patient underwent surgery because of insufficient neurological examination. Although in most classical textbooks there is enough information about foot drop caused by cerebral lesions, the clinicians may not utilize this knowledge. According to our opinion, lack of such cases in the literature is another factor leading to inappropriate clinical decisions.

This case emphasizes that foot drop may also occur with brain lesions in the parasagittal region, near the motor strip for the leg area. A cerebral lesion should be suspected in patients who have either a Babinski sign or increased deep tendon reflexes. Headache is a further clue of a central cause that guides the clinician to a definite diagnosis as in our patient.

In conclusion, clinicians should always perform a complete neurological examination that includes both upper and lower motor neuron investigation for all patients referred with foot drop.

REFERENCES

1. Baysefer A, Erdogan E, Sali A, Sirin S, Seber N. Foot drop following brain tumours: case report. Minim Invas Neorusurg 41: 97-98, 1998
2. Eberhard EF. Motor function of cerebral cortex: In: Patton HD, ed. Textbook of Physiology. Vol 1. 1989, pp 608-631
3. Eskandary H, Hamzei A, Yasamy MT. Foot drop following brain lesion. Surg Neurol 43: 89-90, 1995
4. Guthrie BL, Ebersold MJ, Scheithauer BW. Neoplasms of the intracranial meninges. In: Youmans JR, ed. Neurological Surgery. Philadelphia: W.B. Saunders, 1990, pp 3250-3315
5. Ozdemir N, Citak G, Acar UD. Spastic foot drop caused by a brain tumour: a case report. Br J Neurosurg 18: 314-315, 2004

6. Pozzessere G, Valle E, Tomaselli M, D'Alessio M, Bianco F, Pierelli F, Morocutti C. Crural amyotrophy associated with a parietal lesion: a case report. Acta Neurol Belg. 95:96-100,1995
7. Talbert OR. General methods of clinical examination. In: Youmans ER, ed. Neurological Surgery. 3rd ed. Vol 1. Philadephia: W.B. Saunders 1990, pp 3-36
8. Van Langenhove M, Pollefliet A, Vanderstraeten G. A retrospective electrodiagnostic evaluation of foot drops in 303 patients. Electromyogr Clin Neurophysiol 29: 145-152, 1989