



Isolated Complete Horizontal Gaze Palsy and Multiple Sclerosis *İzole Tam Horizontal Bakış Paralizisi ve Multipl Skleroz*

Hakan Tekeli, Mustafa Tansel Kendirli, Mehmet Güney Şenol, Rıfat Erdem Toğrol, Mehmet Fatih Özdağ, Serkan Demir
Gülhane Military Medical Academy Haydarpaşa Training Hospital, Department of Neurology, İstanbul, Turkey

Keywords: Multiple sclerosis, bilateral horizontal gaze palsy, clinical isolated syndrome

Anahtar Kelimeler: Multipl skleroz, iki yanlı horizontal bakış paralizisi, klinik izole sendrom

Introduction

A male patient aged 24 years, was referred to our clinic with vision problems, diplopia, difficulty in seeing faces. The patient was also unable to move his eyes. The patient reported that he could not recognize the face of his friend and was not being able to see objects clearly after having an exhausting, sleepless night. His previous medical history and family medical history were unremarkable. In the neurologic examination, horizontal eye movements could not be made, vertical eye movements and convergence were normal. The rest of the neurological examination was normal. In the caloric test, no horizontal eye movement was observed after the application of cold water to either ear (Figure 1). Cranial magnetic resonance imaging (MRI) revealed multiple demyelinating lesions including lesion in the inferior medial part of pons (base of fourth ventricle) stretching bilaterally (Figure 2). Cervical spinal MRI, cerebrospinal fluid study and the other laboratory investigations were normal. The patient was diagnosed as having clinically isolated syndrome. The patient was given 1000 mg iv. methylprednisolone therapy for ten days and the horizontal eye movements improved almost completely. Later, the patient was diagnosed as having relapsing-remitting multiple sclerosis owing to his clinical course.

Horizontal eye movements start from impulses that arise from the frontal eye field and reach the paramedian pontine reticular formation (PPRF) in the pontine tegmentum (1). The

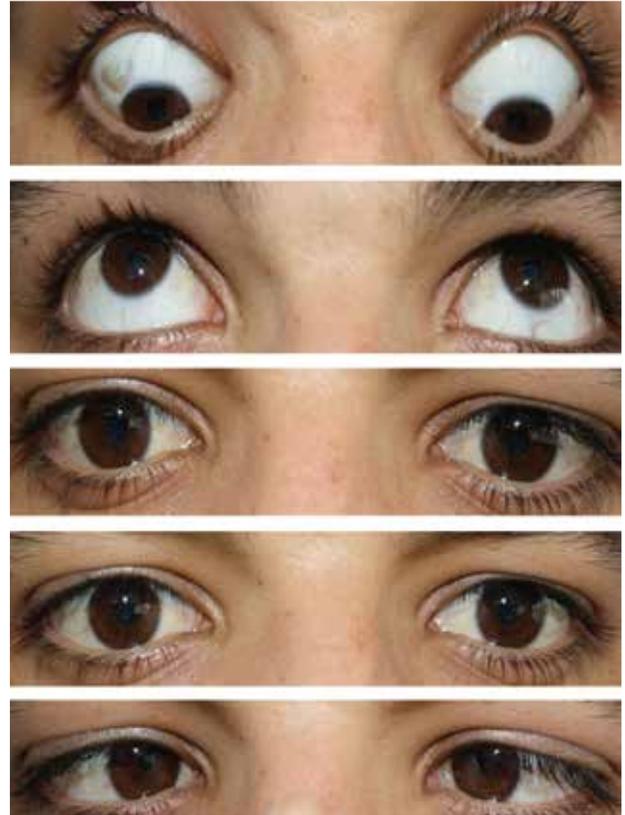


Figure 1. Eye movements of the patients to all directions (from up to down; looking down, looking up, looking right, looking left and convergence)

area affected in the pontine tegmentum in our case involved these areas bilaterally. Visual disorders; diplopia, defects of adduction

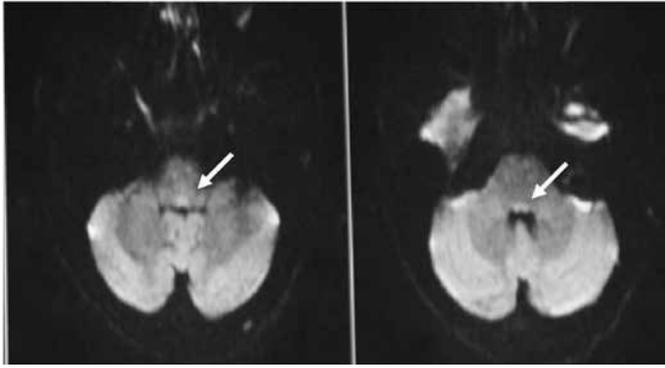
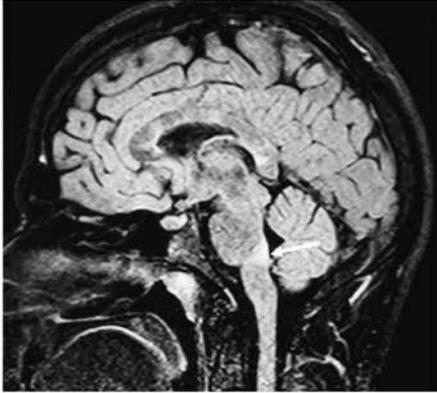


Figure 2. Cranial magnetic resonance fluid attenuation inversion recovery sequence: Hyperintense lesion at inferior medial part of pons can be seen at axial and sagittal sections (white arrows)

and abduction and less commonly, one-and-a-half syndrome are seen in multiple sclerosis (2). Bilateral complete horizontal gaze palsy due to the bilateral involvement of the PPRF and/or 6th nerve nucleus, on the other hand, is very rare. There are two cases in the literature but only with bilateral partial gaze palsy as a presenting symptom of multiple sclerosis (3,4). Bourre et al. (3) named this clinical scenario as 1+1 syndrome. Structures for horizontal gaze occupy a small area in the pons and the affected structures can usually be determined by the type of clinical image.

Authorship Contributions

Concept: Hakan Tekeli, Mustafa Tansel Kendirli, Design: Hakan Tekeli, Serkan Demir, Data Collection or Processing: Hakan Tekeli, Mehmet Güney Şenol, Analysis or Interpretation: Hakan Tekeli, Rifat Erdem Toğrol, Literature Search: Hakan Tekeli, Mustafa Tansel Kendirli, Mehmet Güney Şenol, Rifat Erdem Toğrol, Mehmet Fatih Özdağ, Serkan Demir, Writing: Hakan Tekeli, Peer-review: Internal peer-reviewed. Conflict of Interest: No conflict of interest was declared by the authors, Financial Disclosure: The authors declared that this study has received no financial support.

References

1. Hanson MR, Hamid MA, Tomsak RL, Chou SS, Leigh RJ. Selective saccadic palsy caused by pontine lesions: clinical, physiological, and pathological correlations. *Ann Neurol* 1986;20:209-217.
2. Lublin FD. Clinical features and diagnosis of multiple sclerosis. *Neurol Clin* 2005;23:1-15.
3. Bourre B, Collongues N, Bouyon M, Aupy J, Blanc F, Speeg C, de Seze J. A case of bilateral horizontal gaze ophthalmoplegia: The 1+1 syndrome. *Rev Neurol (Paris)* 2010;166:1028-1031.
4. Kipfer S, Crook DW. Isolated bilateral horizontal gaze palsy as first manifestation of multiple sclerosis. *Mult Scler* 2014;20:754-755.