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NEUROLOGICAL RECOVERY FROM TRANSVERSE MYELITIS AFTER RESPIRATORY AND CARDIAC ARREST

RESPİRATUVAR VE KARDİYAK ARREST SONRASI NÖROLOJİK İYİLEŞME GÖZLENEN TRANSVERS MYELİT OLGUSU

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SUMMARY

We would like to report here a 50-year-old paraplegic female with transverse myelitis (TM) who had an immediate neurological recovery after application of high dose intravenous methylprednisolone during respiratory and cardiac arrest, four months after the initial onset of her spinal cord involvement.

***Key Words**: Transverse myelitis, methylprednisolone, neurological recovery*

ÖZET

Transvers myelit tanısının dördüncü ayında, geçirdiği respiratuvar ve kardiyak arrest sonrasında yüksek doz intravenöz metilprednizolon uygulamasını takiben hızlı motor iyileşme gösteren, 50 yaşında bayan hasta sunulmuştur.

***Anahtar kelimeler**: Transvers myelit, metilprednizolon, nörolojik iyileşme*

INTRODUCTION

Acute transverse myelitis (TM) is an uncommon disease that manifests with gradually developing weakness of the lower extremities associated with bladder or bowel dysfunction, sensory deficits, and pain localized in the back, legs, or abdomen. It can be caused by many factors such as, direct infections, post-infectious or post-vaccinal immunological processes or other (auto) immunological diseases such as multiple sclerosis or systemic vasculitis. However, in most cases the cause cannot be found. Clinical, immunological and neuroimaging findings indicate that post-infectious immune mediated inflammation seems to be the most probable pathogenetic mechanism in TM. The prognosis is usually favourable; in 33% of patients complete regression of symptoms takes place; 33% present significant improvement and 33% show permanent disability. The frequency of relapses is high and then multiple sclerosis must be suspected. The clinical presentation is diverse and varies from temporary sensory deficits to persistent tetraplegia with respiratory insufficiency. Diagnostic work-up must include a thorough history, clinical-neurological examination, neurophysiological studies, analysis of blood and cerebrospinal fluid and neuroradiological investigations. Most important is the spinal MRI: small lesions as well as large lesions throughout the extent of the cord with accompanying edema can be identified reliably. Furthermore, neuroradiological examination can prove or rule out important differential diagnoses. In particular in acute transverse myelitis a quick diagnostic work-up with a spinal MRI is indispensable in order to start an appropriate therapy as soon as possible (1,2). No effective treatment has been demonstrated for patients with acute TM, and reports on the effectiveness of corticosteroids are controversy (3-5).

The aim of this report is to present a patient with TM who had an immediate neurological recovery after application of high

dose intravenous methylprednisolone during respiratory and cardiac arrest, four months after the initial onset of her spinal cord involvement.

CASE REPORT

A 50-year-old, previously healthy woman was admitted for rehabilitation of ASIA B paraplegia and urinary incontinence. She was diagnosed as TM during her stay in Neurology Department, on the basis of the clinical findings and radiological evidence. Serial spinal cord MRI findings supported the diagnosis of TM, which revealed a diffuse increased signal extending from C6 to D2. Cerebral MRI and cerebrospinal fluid were normal. No viraemia was confirmed on serological grounds. She had treated with high doses of methylprednisolone (1000mg/day for five days) while staying in Neurology Department without any recovery of neurological function. Extensive laboratory work-up excluded other possible causes of spinal cord injury and showed no evidence of an immunocompromised state. During her stay in rehabilitation clinic, she experienced a sudden dyspnea and in order to rule out pulmonary emboli, computerised pulmonary angiography was scheduled. While she was having this scanning, a sudden respiratory arrest occurred and cardiac arrest came right after. She was resuscitated and given high dose (30mg/kg for 48 hours) of intravenous methylprednisolone in order to prevent cerebral edema. After half an hour, her spontaneous breathing started and three days later she discharged from intensive care unit to rehabilitation clinic. At her second admission, we realised that she had a remarkable neurological recovery and became ASIA D. She also started to feel bladder and bowel movements and her spinal MRI was unremarkable. Two weeks later, she was discharged to home and during 18 months of follow-up no relapse has been observed.

DISCUSSION AND CONCLUSION

There are controversies in the literature regarding the role of steroids in the treatment of acute TM. Breteau et al. reported corticosteroids to be useful in viral myelitis (3). However, Kalita and Misra did not suggest a beneficial role of methylprednisolone on the 3 months outcome of acute TM (4). A pilot open study of five children with acute transverse myelopathy treated with intravenous high-dose methylprednisolone(1 g/1.73 m2 every day for 5 consecutive days) demonstrated significant shortening of motor recovery when compared with an historic control group receiving either no treatment or low-dose steroids (5). In a multicentre-controlled study, twelve children with severe acute TM were treated with intravenous methylprednisolone(1 g/1.73 m2/day for three or five consecutive days followed by oral prednisone (1 mg/kg/day) for a total period of 2 or 3 weeks) and compared with a historical group of 17 patients. The treatment had a significant effect on the proportion of patients walking independently at 1 month and on the proportion with full recovery at 1 year, with no differences in the frequency of complications between the two groups. Following methylprednisolone therapy, both sensory and motor functions improved, but the improvement was more pronounced and more frequent at 3 months compared to that on seventh day. At a three months follow-up, six patients had good and three had poor recovery (6). As reported by Lahat E et al and Defresne P et al, our case indicates that high dose steroid therapy may be beneficial in neurological recovery even after months of onset.

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