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The Physiotherapy of a Paralyzed Patient Who Communicates through Foot Movement

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Introduction

Acute encephalitis is a condition that strikes people suddenly and affects roughly 7 people out of every 100,000. Behavioral problems, fever, seizures and neurological abnormalities are all symptoms of the condition. Illnesses and autoimmune infections are two of the most common causes of acute encephalitis. However, a significant number of cases (37-62%) are still classed as etiologically uncertain. The intensity and severity of neurological symptoms are due to the usual late detection of the cause during hospitalisation, as well as the absence of appropriate therapy in the case of inflammations of unknown aetiology. Patients with a history of this disease may require ongoing neurorehabilitation to enhance their functioning, depending on their state and frequently severe sequelae.

Physical therapy programmes for encephalitis patients do not yet have any official recommendations. There is little neuroscientific research on the disease's favourable benefits. This study details the rehabilitation of a patient who was admitted to a rehabilitation clinic with three-limb palsy and preserved movement in the right ankle joint after being diagnosed with encephalitis of unclear cause. Individual communication models were developed and implemented as a result of the rehabilitation that was implemented.

Description

A 28-year-old woman was admitted to the Department of Neurology in the morning after experiencing paresthesia in the left corner of her mouth and tongue, as well as a decline in left limb function. The patient had been healthy up to this point, socially active and moderately physically active; she had previously had an upper respiratory tract infection with no fever (two weeks before to the hospitalisation). SARS-CoV-2 infection was not considered a diagnosis because the patient's symptoms began before the SARS-CoV-2 pandemic. During her stay in the hospital, she had a generalised tonic-clonic seizure with a 38.8°C fever [1].

The patient's condition was determined to be moderately serious. She was awake, somnolent and had a depressed palate on the left side, as well as a loss of muscle strength in the left limbs, decreased muscle tone and weaker tendon reflexes. There was no evidence of any respiratory issues. Her vital indicators were all within the normal range. On the first day of admission, a computed tomography scan of the skull found no focal alterations. On the second day, a lumbar puncture was done. The cerebrospinal fluid (CSF) had nonspecific traits such as 211 cells per litre, 62 mg/dL protein and 58 mg/dL glucose [2].

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Based on the CSF examination, Lyme disease and toxoplasmosis were ruled out. The treatment included ciprofloxacin, acyclovir and dexamethasone. On the fourth day after admission, a computed tomography was done. The cerebellar vermis and the left thalamus both showed new foci of diffusion restriction during the study. Immunoglobulin therapy was initiated due to the existence of inflammatory lesions in the brain. As a result of pneumonia, the patient's clinical condition deteriorated, with an increase in cerebral impairments and respiratory failure [3]. Tetraplegia, abolition of tendon reflexes, reduced muscle tone and a bilateral Babinski sign were all present in the patient.

The MRI of the brain, performed one month after the admission, showed a heterogeneous focal lesion in the right thalamus (25 × 23 × 21 mm), with weak diffusion restriction, centrally with slight swelling and mass effect in the form of the compression of the right ventricular system and a discrete shift of the midline to the left by about 1 mm, without any features of pathological contrast enhancement. During hospitalization, the patient underwent physical therapy, which included position changes in the bed and passive exercises of four limbs performed according to neurophysiological methods and orofacial therapy.

The patient was diagnosed with status post encephalomyelitis of unknown cause on the 32nd day of hospitalisation, with symptoms of tetraplegia, decreased muscle tone and diminished tendon reflexes. The patient was awake and communicated by blinking her eyelids in response to closed queries. The patient was referred to a rehabilitation institution that specialises in patients who require ventilator assistance [4].

The CNS is permanently damaged by encephalitis and most patients have a reduction in functional efficiency and quality of life. The fact that many encephalitis patients have long-term deficits highlights the importance of ongoing rehabilitation and the role of the physiotherapist in maximising functional skills, minimising functional deficits or adapting compensatory strategies, assisting in community integration and facilitating participation in personally meaningful activities. Furthermore, via education and training, the physiotherapist may assist in providing a comfortable atmosphere, moderate stimulation to stimulate the natural recovery process and understanding and adapting the patients and their families to the new circumstances.

In contrast to traditional kinesiotherapy, the neurophysiological approaches used in this case may prove insufficient for such a tough new task as controlling a mouse with one's foot. This study emphasises the necessity of a customised rehabilitation programme tailored to the needs of patients with severe disabilities and it calls for additional research to confirm the positive effects of physiotherapy treatment for encephalitis patients. In the treatment process, it is critical to recognise and pursue the therapy's aim, as well as the participation of the complete therapeutic team (including the physiotherapist). The desire for mobility may be secondary to establishing and enabling contact with the environment [5].

The patient communicated using her right foot movements (nodding and negating), opening and closing her eyes (for closed-ended inquiries) and writing and marking pictograms on the computer. There was an improvement in mental health and a greater desire to cooperate with therapists. Despite this, the patient was still unable to do daily tasks on his own. Computer software with a speech simulator and a cyber-eye was being installed, allowing the patient to better communication with the surroundings. The degree of activity: There was a considerable increase in the ability to open the eyelid slits wide and a noticeable tension in the muscles around the lips. Without the orthostatic reaction, the patient may sit in a wheelchair with support for 45–60 minutes.

Conclusion

Communication methods for patients with substantial motor deficits, including speech disorders, remain a challenge for medicine, requiring individual selection and implementation in tandem with rehabilitation, depending on the patient's functional skills. Comprehensive physiotherapy enhanced the patient's ability to communicate and participate in social activities in the example reported. Deep motor neuropathy patients

Conflict of Interest

None.

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