

Effect of Matrix Rhythm Therapy in B/L Adductor Muscle Tightness in Pediatric Cerebral Palsy: A Case Report

Ketan Bhatikar

Department of Physical Therapy, Sport Physiotherapy Aqua Rehabilitation Centre, Goa, India². Pasteur Institute, Abidjan, Ivory Coast

Introduction

Cerebral palsy describes a group of chronic disorders that affect a person's ability to control body movement and posture, occurring in two to six cases in 1000 births. There are many types of cerebral palsy, of which spastic cerebral palsy is the most common form and is the type seen in 75 to 80 percent of cases. Spasticity is a common symptom seen after upper motor neuron syndrome. Spasticity due to neurological disorders such as cerebral palsy results from a significant increase in muscle tone and muscle tightness, limiting movement and joint mobility. Tight muscles cause a decrease in range of motion and limited joint mobility. This leads to an abnormal gait commonly observed as scissors, with 1 foot crossing in front of the other at each step. There are different physical therapies and modalities used in the treatment of muscle tightness caused by cerebral palsy, but have not yielded satisfactory results. The tightness of the bilateral adductors also influences the calf muscle, pulling the toes toward the ground and lifting the heel from the affected floor. The most commonly used techniques are passive stretching. Passive stretching uses an external force applied by the therapist to stretch the tense muscles. It shouldn't be painful, and excessive stretching can cause muscle damage. This stretching position is maintained for about 30 seconds and repeated several times to maintain the length.

According to physical medicine and rehabilitation clinics in North America, passive stretching alone is not effective in improving long-term muscle tightness in children with cerebral palsy. Although passive stretching continues to be common among the long-standing component of physiotherapy programs, research has not proven effective over the long term. Passive stretching combined with active exercise has also shown little benefit in improving muscle strength. There is no specific division used which has shown an advantage in sealing the adductor muscles. Therefore, we need to look for new feelings in physical modalities or techniques that can show long-term results on muscle oppression.

Reliable and valid tools should be used should be used to accurately assess spasticity in clinical practice and for research purposes. Results from several studies have shown that the inter-rater and intra-rater reliability of the modified Ashworth scale stated that repetition of measurements by the same physiotherapist and experience may not affect the reliability of the scale modified from Ashworth. The modified Bohannon-Smith Ashworth scale (MAS) was recently modified and is an ordinal measure of spasticity, which ranks the intensity of spasticity from 0 to 4. Recent studies on the modified modified Ashworth scale (MMAS) are a reliable measure to assess spasticity of the upper or lower limbs of patients with spasticity.

Therefore, in this study, we used the modified Ashworth scale to record the basic study data.

Matrix rhythm therapy is a basic therapy method to maintain good body health (prevention) and to support healing of musculoskeletal, postoperative and rehabilitation problems. Deficient energy metabolism at the cellular level during illness must be normalized prior to adequate therapy. Rhythmic matrix therapy Cell metabolism can be rehabilitated before subsequent gross exercises which will move and train the muscles. It also helps to cure pain and readjust the dynamic balance shifted at the cellular biological level and this healing must be activated at the cellular level.

Case Report

A 14 year old boy was presented to our clinic with a complaint of difficulty walking. He was born at term by normal vaginal birth. He had delayed the birth cry. The birth weight was normal. He had delayed the development milestones and gradually increased the head size until the age of one. Now he had tightness in the upper and lower limbs (more in the lower limbs). On examination, he had diffuse spasticity in the two lower limbs; degrees of spasticity according to MAS (modified Ashworth scale) in the hip adductors and the knee flexors were 2 and 2 respectively on both sides.

The bilateral adductor was 2 and the difference between the two knees in the supine position with the hip flexed stabilized was 08 inches. He had scissors with an equine gait. The patient's mother also made a history of continuous physiotherapy over the past 5 years, but there has been no improvement in the tightness of the adductors. The patient had undergone numerous techniques and orthoses of active and passive physiotherapy. The patient therefore visited our clinic. Here, the patient was reassessed and the study was explained in their native language to the patient's parents and caregivers. In the study, matrix rhythm therapy was applied for 45 minutes to the hip region and the adductor muscles. Rhythmic matrix therapy was administered for alternate sessions. The patient then received evaluated active stretches and other conventional exercises from the therapy session. The basic data were recorded during the evaluation session, 3 and 6 weeks of the session.