Cerebral palsy physiotherapy assessment and treatment pdf

Accessibility | Language PO Box 6427 French Forest NSW 2086 © 2018 Cerebral Palsy Alliance – ABN 45 00 062 288 | Privacy Background and Purpose: Botulinum Toxin A is a relatively new and non-invasive treatment option for children with cerebral palsy, which provides effective short-term interventions to reduce spasms. It is used as an outpatient in other administrations, including physical therapy. The purpose of this case report is to evaluate evaluation and management by physical therapy following Botox injections into hamstring and gastrointestinal hematemia muscles. Case Description: Examination of the function and damage of a 3.5-year-old child with convulsive diplegea included measuring total motor function, scaling to achieve goals, pseudo-grade scales of gait, dynamic and manual range of movement, and selective motor control. Physical therapy interventions were play-based and occurred at home, in kindergarten, and in the general clinic coordination of therapists, twice a week for the first five weeks, and once a week for another five weeks. Intervention consisted of full and partial examples of functional techniques using closed and open chain exercises through the entire possible muscle range. Results: The child showed increased ability in function; However, the damage level results were not consistent and can be effective for discerning changes in clinical settings. Discussion: Increased levels of physical therapy were easily implemented through frequent and clear communication with people directly involved in a child's daily activities. This is believed to have contributed to the successful results seen. Most of the information leading to the diagnosis of cerebral palsy is usually obtained from thorough medical history and examination. The most important task of a health care professional is to identify potentially treatable causes of a child's disability. Health care professionals evaluating a child with possible cerebral palsy experience in neurological examinations and evaluations of injured children and are well versed in the potential causes of cerebral palsy. Often, but not necessarily, these practitioners must be pediatric neurologists. Once the test is complete, depending on the results, practitioners can order laboratory tests to help with the evaluation. There is not even a single test to diagnose cerebral palsy. However, since cerebral palsy is the result of a number of causes, the tests performed are used to identify specific causes if possible. Other tests will be conducted to assess the child's condition (for example nutritional status) or to assess other concomitable conditions the child may have. Clinical evaluation assessments of outpatient children with CP often required an integrated multidisciplinary team (MDT) of doctors or pediatricians, rehabilitation consultants, neurologists, orthopedic consultants, physiotherapists, occupational therapists, clinical scientists, and orthopedic surgeons. [1] MDT must be closed. A relationship with a parent or caregiver who provides consent for an assessment or proposed intervention and ensures that care is incorporated into daily family life. Observing a child's movements is an early and important part of the test. Observe before touch. If the child is young, anxious or tearful, let him stay on his mother's lap while talking to the mother. As the child adapts to the environment, slowly place it on the examination table or floor and still go to the mother/caregiver close to it and watch them move. If the child does not cooperate with crying a lot, they continue while on the mother's lap. The tools required for the test are very simple: toys, small trees / blocks of different shapes, objects of different textures. A thorough physical and biomechanical evaluation is required to determine the level of specific joints and segments targeted at any intervention. Physical examination of a child with cerebral palsy should be evaluated: prone lies, sophine lies, sitting, walking and posture; muscle tone of the limbs, trunk and neck, deep tendon reflexes; Joint motion range of hips, knees, ankles, subtalaar and mid-tar joints. [1] [2] Since cerebral palsy is usually an exercise disorder that presents muscle tone abnormalities, it is important to perform an evaluation of muscle tone during early and future body evaluations. Hypertonia, caused by additional pyramidal brain lesions, is known as an abnormal muscle dysthymia and presents as involuntary intermittent muscle contractions that cause twisting or repetitive movements of abnormal postures. Hypertonia, where pyramidal brain lesions are present, presents as muscle spasms. Convulsions account for 80% of pediatric cerebral palsy presentations and are defined as motor disorders characterized by exaggerated tendon erythrings and torsive stretch reflexes (muscle tone) that increase with speed. [3] As a component of upper motor neuron syndrome, it occurs in the hyper-exciterity of stretch reflexes. Identification and quantification of convulsions is important when determining proper orthopedic intervention. Identify joint angles in the joint range of movement (ROM), increase in muscle tone is first felt and also at the end of the joint ROM, tested at a slow, medium and fast pace to help establish the angle at which anatomical joints will potentially be positioned within all prescribed intercourse. It also determines whether the type and type of mechanical joint can be included in the orthopedic design. Tone Measurement tools used to assess muscle tone in children with cerebral palsy can be divided into two main groups, depending on the assessment technique and quantification method. The TARDIEU scale (TS) evaluates spasms by passively moving three specified speed (slow, under gravity, and at high speeds) joints, and evaluates the strength and duration of muscle response to stretch (X). The six-point scale (Table.1) records the joint's Y where the muscle response is first felt. [4] Speed Description V1 decreases the V2 speed of the limb segment falling below the V2 gravity V3 (slower than the natural fall of the limb segment under gravity) as slowly as possible (faster than the natural drop speed of the limb segment under gravity) grade 0 no resistance throughout the manual movement, Accurate Angle2 Clear Catch Release 3 Fatigable<10 seconds)= occurring= at= a = precise = angle= 4= unfatigable = clonus= (=>Clonus (10 seconds) occurs: The definition of the speed used to assess the quality of muscle response when using the TARDIEU scale and the six-point scale were developed for the six-point scale used to assess the quality of the muscle response used to evaluate the weak body due to the large amount of time required to perform a pull-on scale using the tardiou scale. Record joint angles only during fast and slow speeds; it uses the most clinically important parts of TS : The angle of the catch at the fastest speed (R1) when the joint angle is at a maximum (R2) of muscle length, rated by moving the joint through the entire ROM using slow manual movement. [5] MTS turned out to be a valid, reliable and sensitive summary version of TS. [6] [7] [8] The angular difference between angle R2 and R1 is called the dynamic component of convulsions and estimates the relative contribution of spasms compared to muscle contraction. [6] [5] [9] The Ashworth Scale (AS) grades the strength of muscle tone through a joint ROM on a 5-point scale at a specified speed. (Table 2) Modifications to AS are called modified jasworth scales (MAS). The literature also explained that MAS includes a six-point scoring scale, a rating on the severity of muscle tone, and an assessment of muscle tone at an unspecified 'fast' rate. [4] Grade Description 0 No increase in muscle tone 1 slight increase in muscle tone, expressed by catch and release or expressed by minimal resistance at the end of the range of exercise when moving on affected joint bending or expansion 1+ slight increase in muscle tone, stated by catch, Depending on the minimum resistance across the rest of the ROM (less than half) and a more noticeable increase in muscle tone throughout most of the ROM, but the affected joints easily move 3 significant increases in muscle tone, manual movement is difficult 4 affected joints are flexion and expansion in Table 2: as measured by the description of the Ashworth scale of the low scale and Spasticity evaluation [10], the general source of error is due to the individual taking the measurement, inaccuracy of the measuring instrument and the variability of the measurement characteristics to be measured. [1] A study on the reliability of TS and MTS is </10>High intra-and inter-operator reliability when assessing children with cerebral palsy, providing sufficient time is allowed for training and practice. [8] [2] However, AS has published test and retest results for both inter and intra-operator reliability. [4] [8] Convulsions are defined as increases that depend on the speed of muscle tone, meaning that only the Tardieu scale is an appropriate evaluation tool because it passively stretches muscles at three different speeds, accounting for the speed dependency of spasms. [3] The AS evaluation tool measures manual resistance to movement at one rate, leading to immutable and overestimation in convulsive identification, especially if there is muscle contraction. [3] Despite the widespread use of AS and its ability to identify common hypertonia, this tool is no longer recommended to be used and recommended that TS or MTS be used to assess cerebral palsy and outpatient muscle tone. [5] Children with cerebral palsy often show signs of underlying muscle weakness presenting as a changed state in muscle tone and therefore it is important to assess low limb muscle strength in outpatient children with cerebral palsy. [4] Children with cerebral palsy with greater muscle strength will achieve higher motor function levels because muscle strength is correlated higher in function than the presence of spasms. [5] There is a direct correlation between muscle strength and spatial characteristics with a child's motor function, walking speed, energy expenditure, and tempo of gait. [7] [8] There is an incremental drop in muscle strength in all muscle groups, with increased walking difficulties at GMFCS levels and I III. [6] The presence of strength muscle weakness causes muscle imbalances across different joints. This muscle imbalance is thought to be a factor in the development of muscle shortening, which contributes to rotating ore and further affects a child's motor function. [4] [6] Therefore, when performing orthopedic evaluations of a child with cerebral palsy, the overall muscle strength profile of the lower body is important. The Medical Research Council scale (MRCS) for manual muscle testing is a widely recognized clinical evaluation tool used to grade a child with cerebral palsy as muscle strength. [6] (Table 3) It is important to note that if a child does not cooperate during evaluation, it is not possible to isolate the muscles being tested or understand what is required of them. If further quantification of muscle strength is required, a portable dynamometer may be used. [6] [4] Grade 0 No Movement 1 Muscles observed in the substrate or muscles can only see traces of muscles observed in the gas 2 Muscles can only move if the resistance of gravity is removed 3 Muscle strength is further reduced and the in-test resistance can only move with completely removed gravity. Although strength is reduced, muscle contractions can still move joints for resistance 5 muscle contractions in general for the entire resistance table 3: The Medical Research Council Scale for Muscle Strength Assessment (MRCS) muscle strength assessment [9] range of motor muscle contractions and bone shortness can be developed in children with cerebral palsy, a commonly observed secondary musculosing problem. These secondary musculodyal problems cause a reduction in the child's available lower limb jointROM. Thus, the evaluation and quantification of passive and dynamic paraplegic joint ROM is an important part of the orthopedic evaluation of any surgical child with cerebral palsy. The findings support monitoring of changes due to prescriptions of orthoses, evaluation of interventions and growth. The hip must be evaluated for the amount of passive and dynamic ROMs available in flexion, expansion, abduction and additives. Hip flexion contractions are frequent presentations in children with mainly convulsive presentations of cerebral palsy. Primary hip flexion contractions negatively affect the motorology of a child's gait by: limiting heel contact from early contact; Change the position of the body's weight line during the posture phase; Change the inclination of the femur and the tygobia during the posture phase; By reducing the amount of hip extension, transmission through the second and third rockers of the posture stage is interrupted. Knee joints need to be evaluated for flexion and expansion in both manual and dynamic ROMs. It is also important to evaluate the joint range of manual movements, activity and speed specific knee extensions to the child supine, and bend to about 30 ° hip. This position replicates the degree of hip flexion that occurs during initial contact of the gait and establishes a possible knee extension degree in the initial posture step. In order to establish the ROM of planks and dorcy flexion in the ankle joint, it is important that the subtala joint is maintained in a normal alignment and the test is best performed with the child in the spin position. While bending the ankle, the movement of the sub-talaarthritis affects the length of the gasolatemia muscle and can generate incorrect discovery of available dorsiplexion ROMs. [10] Plantar exculcity patterns are commonly present in the lower limbs of a child with a spastic presentation of Cereb Palrals. This often causes gastrointestinal muscles or Soleus muscles to be affected by an increase in muscle tone. Gastroenteremia is a bi-condescing muscle that prays for the root in the femoral lobe and inserts it at the root of the calcagne. The dorsi, which bends the hips and knees at 90°, then the ankles, removes the effects of wittonemismatic muscles on the feet and ankles and helps identify possible ROMs and muscle tones that are specifically attributed to the plantar muscles. (Figure 1A) A B 1: Solerus muscle (A) and gastrointestinal muscles (B) [1] Physical evaluation of the ROM of the ankle joint as an alternative, placing the hip at 30° ° of flexion, knees at maximum attainment expansion, subtala joints in neutral alignment and then flexing the foot set the ankle dorsiflexion ROM due to one of the changes in muscle tone or contraction of the Utonemiak muscle. (Figure 1B) Evaluate the ankle ROM due to the length of gastroenteremia to determine the couple of knee extensions in the child's platter flexion. This is used during the prescription of the AFO to determine the angle of the ankle in the AFO (AAFO) and the degree of ankle dorsey or plank flexion is located in the AFO. It is defined as the angle of the foot that is opposed to the valor shank when seen from the court plane. [2] Torsional or abnormal loading and bone growth occur due to increased tone or weakness in external children with cerebral palsy. [3] Therefore, it is important to include a rotational evaluation of the joints of the lower body. Specific areas to evaluate are hip inner/outer rotation, fembial yangdosan/retro version, tibia torsion degree, subtalabaneon/inversion, and medium tarsal ab/adduction. Establishing a torsion profile of the child's lower body helps with corrective prescriptions by checking for the presence of torsional lever arm deficiency. [4] Goniometric measurements are the most widely used technique to evaluate manual or speed-dependent joint ROMs in kids with cerebral palsy. [6] Factors such as the number of assessors, patient compliance, and the methods used to measure can affect the reliability and repeatability of measurements. Several studies involving children with convulsive cerebral palsy have found that goniometric measures indicate higher levels of mutual and in-my-reliability and repeatability for trained and experienced observers. [8] [5] [7] [8] Strict measurement protocols Jun-soo Lee are provided. Hambisela_Module_2_Evaluating_Your_Child Resources: Get to Know Cerebral Palsy: Learning Data for Facilitator, Parents, Caregivers, and Persons With Cerebral Palsy