

ROLE OF PANCHAKARMA IN THE MANAGEMENT OF CEREBRAL PALSY

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ABSTRACT

Cerebral palsy is the leading cause of childhood disability affecting function and development of children. Cerebral palsy is non progressive irreversible disease of the central nervous system. Motor disorders of Cerebral palsy are accompanied by disturbances of sensation, perception, cognition, communication and behavior. Children with Cerebral palsy affected exhibit impaired muscle coordination, decreased velocity, overactive reflexes, muscles contractures, altered biomechanics, disuse, sensory impairment, hypertonia etc. In *Ayurveda* there is no correlation with any single disease or condition. Cerebral palsy may be correlated with *Janma Bala Pravritta Vyadhi* or *Shiro marmabhighata* and *Vata Vyadhi*,

beside these some symptoms like *pangulya*, *muka*, *minmin* & *gadgad*, *badhira*, *ekangaroga*, *sarvangaroga*, *pakshaghata*, *pakshavadha*, *vepathu*, *mukha vakrata*, *hatekpaksh* etc, are described as main symptoms of *Vata Vyadhi*. Various *PANCHAKARMA PROCEDURES* which are commonly used in *Vata vyadhi* like *Udwartana*, *Sarvaang abhyanga*, *Shashtikshali pinda Sweda*, *Shirodhara*, *Nasya*, *Basti* etc. are found to be beneficial in the management of Cerebral Palsy in Children. *Udwartana* is *kapha*, *vata hara* and removes *srotash awarodha*. *Udwartana* along with *abhyang* also open minute channel and improve blood as well as lymphatic circulation. *Swedana* reduces pain, spasticity, improve range of motion, flexibility of joint along with *Snehana*. *Nasya* is a therapeutic procedure which is used in various systemic diseases mainly for *urdhavjatrugat bhaag*. *Shirodhara* may modulate the secretions of various neurotransmitter at brain cellular level. *Basti* is best treatment to vitiated *Vayu*, it

may destroy the seed of all disease, it improve gross as well as fine motor functions provide nourishment, improve overall general condition It is major general treatment for Cerebral palsy affected children.

KEYWORDS: Cerebral palsy, *Panchakarma*, *Udwartana*, *Snehana*, *Swedana*, *Shirodhara*, *Nasya*, *Basti*.

INTRODUCTION

Cerebral palsy comprises a group of movement and posture disorders resulting from nonprogressive, permanent damage to the immature brain.^[1] Motor impairment is the main manifestation of Cerebral palsy, with consequent effects on the biomechanics of the body.^[2] Children with Cerebral palsy exhibit impaired muscle coordination, difficulties in the organization of sensory information and functional limitation. Approximately all children with Cerebral palsy have upper and lower neuronal dysfunction, which includes weakness, associated mirror movements, decreased velocity, over active reflexes, muscles contractures, altered biomechanics, disuse, sensory impairment, and hypertonia.^[3] Upper limbs impairments lead to difficulties in reaching, grasping, and manipulating objects. Deficiencies in one or more of these basic functions hinder the performance of activities of daily living and therefore exert a negative impact on independence and quality of life.^[4] In *Ayurveda* there is no correlation with any single disease or condition. Cerebral palsy may be stated as *Janma Bala Pravritta Vyadhi* (congenital disorder) or *Shiro marmabhighata* (disease caused due to the injury of head or vital organ) *Vata Vyadhi* (Neurological disease). Beside these some symptoms of *Vata vyadhi* like *pangulya* (locomotor disorder), *muka*, *minmin* & *gadgad* (dumbness) *badhirya* (deafness), *ekangaroga* (monoplegia), *sarvangaroga* (quadriplegia), *pakshaghata*, (hemiparesis), *pakshavadha*(hemiplegia),*choreoathetoid* (vepathu) and some symptoms of *graha* e.g. *skanda* and *skandaapasmaar graha* etc, overlap with the symptoms of Cerebral palsy. ‘CHAL’ is the main *Guna* of the *VATA* and Cerebral palsy is mainly related with *Vata Vyadhi*. Which show mainly, locomotory dysfunction along with other motor disability.

AIMS AND OBJECTIVE

There is no cure for Cerebral palsy, but various forms of therapies can help a child with disorder to function and live more effectively. The goals of management should be to prevent secondary impairments and to increase the child’s developmental capabilities. In *Ayurvedic* literature detailed description of management of *Vata Vyadhi* has been described, which

could be beneficial for the treatment of Cerebral palsy. These include Sanshaman chikitsa with oral medication like medhya drugs, rasayanas, bringhan dravya etc, and Sodhana chikitsa, which include poorva karma (snehana, swedana, deepan, pachan), Pradhan karma (vaman, virechana, basti, nasya, raktamochana) Paschat karma, (samsarjana karma). In the present study Abhyanga, Swedana and Udwartana works through cutaneous tissue. It is considered as one of the prime procedures for shaman of Vata. Basti is possessed with multidimensional action and the most appropriate procedure for Vata-Vyadhi. Shirodhara and Nasya also use to calm the nervous system. Overall goal of treatment is to help the child to reach his or her greatest potential physically, mentally, and socially.

Review methodology

Panchakarma

Panchakarma is a collective term which indicates five major therapeutic procedures of detoxification to cleanse the body channels, along with many other supportive procedures. Literally, *Panchakarma* is made up of '*Pancha*' means 'five' and '*karma*' means 'procedure/action' (procedures of purification). *Ayurveda* treats diseases by using two different methods, *shodhana* (purificatory) and *shamana* (pacificatory). *Shodhana* means cleansing or detoxification of the body by expelling the deranged doshas (morbid materials inside the body causing various diseases). *Shamana* is pacification of symptoms without eliminating the morbid *doshas*. Typically, all treatment protocols ought to begin with *shodhana*, followed by *shamana* for better outcomes. When the body is saturated with toxins, the toxins interfere with the absorption of herbal medicines. Furthermore, it is necessary to eliminate *ama* (accumulated toxins in the channels) and to re-establish the homeostasis. The five main procedures within *panchakarma* are: *vamana* (emesis), *virechana* (purgation), *nasya* (nasal instillation of herbal oils/powders), *basti* or *vasti* (herbal enema), and *raktamokshana* (bloodletting). Primarily, these practices are aimed at eliminating *ama* (toxins) from to body and cleanse the channels. Each procedure is performed in three phases: *Poorva karma* (preparatory methods), *Pradhana karma* (main procedure) and *Paschat karma* (post-cleansing procedures which include dietary and behavioural regimen).

Panchakarma is the ultimate mind body healing experience for detoxification of the body, for strengthening the immune system, to restore the balance and wellbeing. It is one of the most effective healing modality of *ayurveda*. Prior to *panchakarma*, *poorva karma* like *deepana* and *paachana* (appetizers and digestives), *snehana* (oleation) and *swedana* (sudation) are

given to the patient. *Ayurveda* considers that the purification of the body is important before the commencement of any other therapy. *Shodhana chikitsa* (purificatory or cleansing procedures/*panchakarma*) is considered superior to *Shamana chikitsa* (treating with internal medicines) because the condition treated with *shodhana* therapy will never recur, whereas the condition treated with *shamana* therapy may recur in due course of time.

Effective panchakarma in cerebral palsy

Various *panchakarma* procedures are found to be beneficial effect in the management of Cerebral palsy. Present study is focused on *panchakarma* procedures like *udwartana* (medicated powder massage), *sarvaang abhyang* (full body massage with medicated oil), *shashtikshali pinda sweda* (sudation with a bolus prepared by boiled rice), *nasya* (oil drip in each nostrils) *shirodhara* (oil drip over forehead) and *Basti* (oil and decoction enemas) because Cerebral palsy is *shiromarma-abhigata vataj vyadhi* and all these therapy are commonly used and found effective in the vitiation of vata dosha and *urdhavjatrugat roga*.

Udwartana

Udwartana is external procedure. In present study it is mainly used for *rookshana* of body with powders of medicines. *Udwartana* differ from *abhyanga* in its direction of application and pressure during the procedure with no harmful effects. It seems to be beneficial in reducing the spasticity in Cerebral palsy patients and it is suitable in *soshana* of 'Amavastha' (accumulation of waste material inside the body) or *Kapha aadhikya* (predominance of kapha dosha).

Types of udwartana

According to Acharya Charak; Depending upon the variation in the therapeutic effect, it is two type Churna like *Kulatta churna*, *Triphala churna*, *Ashwagandha churna*, *Chandan*, *Musta churna*, *Brick powder*, *Mitrika churna*, etc. are used for *rooksha udwartana*. *Udwartana* can be used independently or along with *snehana* and *swedana* or other interventions to treat Cerebral palsy patient. *Udwartana* alleviate *Kapha dosha*, reduces excess body fat, increase stability of body, improves skin color and has positive effects on psycho- physical parameter including Cerebral palsy. *Udwartana* opens the minute channels and improves blood as well as lymphatic circulation

(A) *Snigdha Udwartana* in the context of treatment of *Krishha* (lean and thin) persons, in which oil is used in the procedure.

(B) *Ruksha Udwartana*;

Kulattha Churna (powder) To reduce accumulated subcutaneous fat, decrease excessive sweating. Kolkutthadi Churna Reduce excess fat in obese patient. Mritika, Brick powder For udgharshana, reduce oiliness of skin, reduce accumulated subcutaneous fat.

Sarvaanga abhyanga (Snehan)

Abhyanga (bhaya snehana) is considered as part of an important rejuvenation therapy of Ayurveda. Twaka is adhistan for vata and bhrajaka pitta. The procedure which causes unctuousness, fluidity, softness and mitigation in the body is snehana therapy.

Snehanamsnehavishyandmaardvamkledak arkam. Ch.Su 22/10

Before Panchakarma procedure first of all Snehana and then Swedana karma should be applied after these procedure Samshodhana karma should be done.

Sarvaanga abhyanga as a purvakarma

Abhyanga acts by means of srotomukh vishodhanam, abhisyandanam of doshas and reduces Abhyanga(snehana) provide nourishment due to its snigdha, guru, shita, mridu, picchila, sara, manda, sukshma guna.

Specific oil should be selected according to type of doshas

Vataj temperament medicated oil Ksheerabala taila, Balaguduchyadi taila, Mahamashyadi taila etc.

Pittaj temperament Bhringamalakadi, Manjisthadi taila etc.

Kaphaj temperament Eladi, Asanavilwadi, Marichyadi taila

Mode of action

Abhyanga involves cutaneous manipulation and it is considered as one of the prime procedures for mitigation Vata. Primarily it acts by two mechanisms i.e., local and aggravated vata, thus moving the aggravated dosha from shakha to koshta after which the doshas can be easily removed through sodhana karma. The term Abhyang is used as a synonym of oil bath. This is advised to be practiced daily. Sneha applied on head called Shiroabhyang and when apply on foot called as padabhyanga. central. The local mechanisms include cutaneous stimulation causing the arterioles to dilate and thereby achieving more circulation. It also assists venous and lymphatic drains. This state of hyper circulation also enhances the trans- dermal drug absorption and assimilation. Abhyanga improves blood supply to muscles, reduces stiffness, stimulates sensory nerve endings of the skin and gives

abundant sensory inputs to the cortical and other centers in central nervous system. Abhyanga procedure is the mechanical stimulation more precisely the pressure application during massage, pressure application in proper direction may help in reduction of motor neuron hyperexcitability by reducing the alpha motor neuron activity. A study reports in hemiparesis the H- reflex was depressed during both continuous and intermittent pressure was found more effective. Abhyanga normalize superficial and deep muscles both and make the muscles strong and joint stable. It have pleasant and calming effect. The strokes used in Abhyanga like kneading, friction etc improves local circulation.

Abhyanga is kaphavatahara, pustivardhak, ayurvedhak. Snehana and Swedana both simultaneously have properties of reduction in spasticity, stiffness, pain and improve range of motion of joint in Cerebral Palsy affected child.

Swedana

The swedana karma is a part of purva karma of panchakarma. Swedana is the therapy which make the body to perspire. Acharya Kashyap mentioned eight type of swedana, Hasta sweda, Pradeha sweda, Nadi sweda, Prastarsweda, Sankarsweda, Upnahasweda, Avagahaswda, Parisheksweda. Acharya Kashyap indicated avasthika sweda in children i.e. sweda in children should be done according to roga and rogi's bala and special attention should be given to sheeta, vyadhi and sharirk bala In baashpa sweda the patient may sit or lie on a chair or on a wooden table and whole body is exposed to steam. Sweating is induced by means of steam coming from the fluid which may contain many herbs or other liquids such as dhanyamla (an alcoholic beverage prepared from grains) or wine or milk etc in baashpa sweda. In naadi sweda a spouted pitcher or pressure cooker (which should be filled with liquids and herbs) is used and patient is exposed to steam coming out of the spout or a tube which is fitted to a narrow-mouthed vessel (pressure cooker) over the required body part.

Swedana causes excretion of waste metabolites through diaphoresis. Swedana along with abhyanga removes aavarana and srotorodha. Swedana is sthambhagna (relieves spasticity), Sandhichestakar (improves joint mobility), Srotoshuddhikar (cleanses channels) and Kaphavata nirodhaka (pacifies kapha and vata). Thus by its action the 'Sroto sanga vighatana' (removal of obstructions in channels) may take place and stiffness of the joints relieved.¹⁰ Swedana relieves heaviness, stiffness and coldness in the body parts. The treatment plan should be that of vatashamana in CP, vata being dominant dosha involved. Management of vata disorders includes snehana, swedana and vasti. Thus swedana

procedures like baashpa sweda and naadi sweda both has an important role and proved their efficacy (especially in reducing spasticity) in the management of CP.

Pinda sweda

It is the type of fomentation by means of pinda, containing drugs with or without being wrapped with a cloth. It is the type of Sankara sweda.

Shashtikashali pinda sweda

Is the common method of swedana used in children in which specific part or whole body made to perspire by the application of shashtika shali in the forms of pottali's (boluses tied in cotton cloth). Shashtika Shali is cooked with milk and decoction of herbs, cooked rice is to be kept in pieces of cloth to make pottalis. Remaining Kwatha and milk should be mixed and heated in low temperature to dip the pottalis of boluses. After creating pottalis, patient is massaged with suitable warm pottalis gently applied. The procedure takes about half to one hour.

Mode of action

Shashtikashali is snigdha, sthira, balavardhaka and dehadardhyakrita. Bala, godugdha and dashmoola that are used to cook the rice and heat the bolus are snigdha, rasayana, balya, and Vatahara. The heat provided by the bolus of shashtikashali dipped in balamula kwath with godugdh increases the blood flow locally and bala absorbed locally provide nourishment to muscular tissue and prevent from emaciation, Consequently, application of therapeutic heat causes vasodilatation which improves blood circulation and removal of waste products. Due to improvement in blood circulation, anabolism increases and tissue receives maximum oxygen and get nutrition properly. Heating can also result in decreasing stiffness and increasing tissue extensibility which improve joint movement and range motion. Further the shrotas cleans up and open the channel which facilitate the more nourishment and free movement of Vata Dosha. This result in the relief of spasticity and enhance more nourishment and free movement of joints and prevent from deformities and contractures. So that the Shashtikashali pinda sweda is one of the swedana which have beneficial effect on cerebral Palsy affected children.

Nasya

Nasya is a therapeutic procedure which is used in various systemic diseases mainly for urdhvajatrugat roga. Nasya is the process of administration of medicines through nostrils. Age limit of Nasya is 7 to 80 year of age.

During nasya the patient should sit or lie down in comfortable posture, then applied gentle massage over the head, forehead and face followed by mild swedana. Lukewarm oil should be instilled in prescribed dose in each nostrils. After procedure gentle massage given to palmer and planter, shoulder and back region, oil on face should be wiped off and advice for gargling with lukewarm water.

Nasya is the process of administration of medicines through nostrils. Nasya is indicated mainly in aggravated and accumulated doshas (disease causing factor) of head and neck. Commonly used medicines for nasya are panchendriyavardhan tailam, dhanvantaram tailam, anu tailam, shadbindu tailam and shunthi churna (powder of Zingiber officinale) for pradhmana nasya (nasal administration of herbal powders). Kashyapa has mentioned two types of nasya; namely Brimhana nasya (nourishing) and Karshana/Shodhana nasya (cleansing).

Type of nasya according to kashyap

Brighan - Vataj roga

Karshana - Kaphaj roga

According to charak

Navan, Avapeedan, Dhmapan, Dupan, Pratimarsh.

According to susruta

Nasya, Shirovirechan According to Vagbhatta – In child at the place of Marsh, Pratimarsh Nasya is used.

Mode of action

The Nasya karma is mainly intended to cleanse the channels in the head and neck region. The aggravated kapha dosha, which usually blocks the upper respiratory tract, is eliminated with the help of nasal instillation of herbal drugs. The channel carrying senses in human body are directly connected to shira (head) just like the sun rays are connected to the sun. The medicine which put into the nostril moves up to the sringataka marma and spreads to the

interior of the head and the junctions where all the channels related to eye, ear, and nose situated together. The olfactory nerves of the nose are connected with the higher centers of brain i.e. limbic system which include amygdaloidal complex, hypothalamus and basal ganglia etc. Thus drugs administered to nostrils directly goes to higher centers the brain and affects nervous system and endocrine system by controlling doshas. 10Nasya not only work as a shirovirechana i.e. shodhan and shaman but also play a vital role in nourishing for the panchgyanendriya adhisthan situated in shira.

Pratimarsh nasya is given to each nostrils, it is Ubhayaarthkrit without any demerit, it may use for day or night any time and it is Satmya from birth to death. It have beneficial effects in patient of Cerebral palsy as it provides strength to shira (head) and indriyas (sense organ).

Shirodhara

Shirodhara is a form of Ayurveda therapy that involves gently pouring of liquid over the forehead from a specific height and for a specific period of time continuously and rhythmically allowing the oil to run through the scalp and into hairs. The name comes from the Sanskrit word 'shiro' and 'dhara'. The liquid use are- medicated taila (Bala, Mahamash, Narayana taila etc), Melt Ghee (Brahmi, Astamangala ghrita etc), Kwatha (Medhya drug, dashmoola, balamoola, Ashwagandha etc.), even lukewarm water etc. Shirodhara has been used to treat various disease like- neurological disorder, insomnia, memory loss, stress, anxiety, hearing impairment, sinusitis, vertigo, eye disease etc.

Mode of action

The chemical constituent of Shirodhara may modulate the secretions of various neurotransmitter and hormones at brain cellular level. Shirodhara is a purifying and rejuvenating panchakarma procedure that eliminate toxins and mental exhaustion as well as relieve stress and any ill effect of central nervous system. The calming effect produced by Shirodhara is similar to that obtained with meditation. Thereby controlling seizures cognitive impairment and behavioral problems like anxiety, attention – deficit hyperactivity disorder etc. so it have beneficial effect in Cerebral palsy affected children.

Basti

Basti is the procedure where the medicines is in suspension form and the most appropriate procedure for vitiation of Vata In children administration of drug is introduced through rectum. 12Among all therapeutic procedures, basti is considered as superior because it is like

amrita for child patient. Knowledge of administration of basti in children is very important. Basti is very difficult to understand and practice in pediatrics. Basti give complete nourishment to the body. Initially it does cleansing of shrotus followed by anabolic function. Basti is prepared by using various medicated oil, kwatha and kalka, madhu and saindhav. The patient is advised to lie down left lateral position. Before administration of The basti netra is gently inserted into the anal canal up to a specific range and basti putak containing mixture is pressed with uniform pressure. The pressure is continued till only small quantity of fluid remains in basti, small amount of oil is applied on patient anus and also on basti netra, then basti netra insert in rectum carefully. the bag to avoid air insertion. Then the nosal is remove gently and the patient is allowed to lie down in supine position till he feels urge to excrete. After evacuation of bowel, the patient may take mild hot water bath.

Madhutailika basti, bala guduchyadi basti, patolanimbadi basti, vaitarana basti, mustadi yapana basti, tikta kshira basti etc are commonly used basti preparations. Matra vasti is a type of sneha basti (oil enema) in which medicated oil given in a small dose, and it can be given daily with no risk. Matra basti can be used irrespective of age and not much precautionary measures are required. The usual dosage is 60ml. For infants the quantity of matra basti is 20ml.

Snigdha Basti (anuvāsana with balatāilam) (oil enema) is said to have brimhana (nourishing) effect. It is found that vasti improves the flexibility of joints in cases of CP by vatashamana. 1,2,8 Vasti is 'Ardha chikitsa' (half of the treatment) of vata and most important panchakarma in CP. There are many types of basti like niruha (decoction enema), anuvāsana (oil enema) and uttara (enema given through urethra in males and through cervix in females). No other treatment has the capacity to pacify and regulate the force of vata apart from basti. Basti is the procedure in which the administered medicine through anal canal reaches up to umbilicus, hips, waists, loins and small intestine, churns the accumulated materials like dosha and purisha (feces), spread the unctuousness all over the body and easily comes out along with purisha and dosha (impurities). Basti is advised for both children and aged persons, which is excellent both for the elimination of Doshas and nourishment of the body. Basti therapy instantaneously promotes Bala (strength), Varna (complexion), Harsha (sense of exhilaration), Mardavatva (tenderness) and Snehana (unctuousness) of the body. Basti is being the most widely used and highly effective treatment modality for treating neurological disorders.

Mode of action

Basti is the procedure in which the administered medicines through anal canal reaches upto umbilicus, hips, waist, loins, small intestine the toxic material, which spread all over the body easily comes out along with excretory material. Basti karma instantaneously promotes bala, varna, harsh, mridutwa and snehana of the body. Basti is being most widely used and highly effective treatment modality for treating neurological disorder. Matra basti is said to be balya, bringhana and vata roghara. Pakwashya is the mool sthan of Vatadosha. Basti by its action on the moolsthan gets control on Vata all over the body. When medicated oil reaches rectum and colon, presence of short chain fatty acid in oil allows direct diffusion of drugs from epithelial cells into capillary blood villi showing its generalized effect. Rectum has a rich blood and lymph supply and drug can cross the rectal mucosa like other lipid membrane and by entering general circulation, basti acts on whole body. Basti may block neuromuscular transmission by binding through receptor site on motor or sympathetic nerve terminal, entering the nerve terminal, and may inhibit the release of acetylcholine. Matra basti provides more nourishment to deeper dhatus. 16 Basti improve fine motor functions, general motor functions in Cerebral palsy patients. Basti has improved fine and gross motor function in Cerebral palsy cases. Basti is found beneficial in spastic diplegia. Matra basti improves all over nutrition. Basti is having two actions, expelling the dosha and nourishing the body as it is indicated in chronic neurological disorder. Action of Basti is related with the facilitation of excretion of morbid substances, responsible for disease process in to the colon, from where they are evacuated. Basti dravya when administered into rectum may stimulate the sensory system due to its chemical composition and pressure effects over the bowel. As the total nervous system is inter-related, the regular stimulation on enteric nervous system has positive effect over central nervous system also. When basti dravyas are pass through gastrointestinal tract, it probably stimulate the cells (enterochromaffin cells or enteroendocrine cells) that help to compensate neurological deficit and improve its function.

CONCLUSION

The selected Ayurvedic treatment modality is effective in relieving the signs and symptoms and thus reducing the disability in children with Cerebral palsy affected child. Panchakarma is well known broad subject, having preventive, curative as well as rejuvenate effect in Cerebral palsy affected child. Udwartana brings lightness in the body and provide flaccidity in Cerebral palsy cases. It is Kapha, Vata hara and remove Shrotorodha. Udwartana, Abhyang and Swedana also opens the Shodhana karma perform mainly by Niruha and

Asthapana basti. The protocol is determined according to disease and patients condition. According to Kashyap, Basti is given after the crawling age. But Anuvashana basti is promoted from early infancy itself. As far as possible shodhana therapy should be avoided in children or should be used in mild form. In children as compare to Niruha basti, Anuvasana and Matra basti should be used more pre – dominantly in the management of various neurological conditions. By considering all these fact Basti has beneficial affect in Cerebral palsy child minute channels and improves blood as well as lymphatic circulation which provide platform for further panchakarma procedures. Abhyanga and SSPS improves flexibility of joints which enhance range of motion, reduce pain and spasticity. Nasya and Shirodhara provides strength to shira (head) and shirogata indriyas (sense organ). Matra Basti provide more strengthening the muscles and by these therapy nourishment to tissues, improve fine motor functions as well as gross motor function in Cerebral palsy cases. Basti is like amrita for child patient and the most appropriate procedure for Vata-Vyadhi. So it is major treatment for Cerebral palsy affected Children. There is no cure for Cerebral Palsy, but various forms of therapies can help a person with disorder to function and live more effectively. The goals of management should be to prevent secondary impairments and to increase the child's developmental capabilities.

Panchakarma is one of the major mode of treatment which helps in improving the range of motion, reducing the spasticity and we can improve child capability and quality of life.

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