



Role of Adarsh Charitable Trust in the Management of Cerebral Palsy through Orthopedic Selective Spasticity Control Surgery

In the case of children with Cerebral Palsy, it is known that their major problem is mobility. As mentioned below, because of the imbalance of muscles in their limbs and trunk, it is not possible for them to stand erect or walk or even move their limbs properly. So regular orthopedic check up is necessary for these children. In most special schools, Physiotherapy is given to reduce this problem. And it has been proved by experience that the effect of physiotherapy is greater in very young children, by preventing deformities and contractures, by adequate stretching and mobilization exercises. This is so also in minor cases of Cerebral Palsy where the muscle spasticity or imbalance is very little. But beyond a certain point surgical intervention is required.

1.Surgical and medical intervention for management of Cerebral palsy.

Spasticity or hyper tonicity of muscles is a major problem in children with Cerebral Palsy. It disturbs their natural movements in the hands, legs, trunk and spine. Also it creates an imbalance in the movements, in particular joints, depending on which muscle is affected. Thus spasticity or hyper tonicity becomes a major problem by interfering with the control of the body in upright position. So while considering the treatment of Cerebral Palsy, control of spasticity has to be accepted as an important task. There are several methods, which have proved effective in the management of spasticity. Among these, Stereo-tactic Thalamotomy, Oral medication, Intrathecal baclophen therapy, Botullinum toxin Injection, Selective Dorsal Rhizotomy (SDR) are important. But all the above-mentioned techniques have their own drawbacks such as sensory disturbances, loss of stability etc. Orthopedic Selective Spastic Control Surgery (OSSCS) is able to control spasticity without these drawbacks.

2.What is Orthopaedic Selective Control Surgery?

Orthopedic Selective Spastic Control Surgery (OSSCS) is a surgical procedure to control or reduce spasticity or hyper tonicity in Cerebral Palsy patients. Various types and severity of varying degrees of hyper tonicity can be controlled by the appropriate use of selective muscle release surgery. Fundamentals of OSSCS are clear and uncomplicated and are based on physical and biological findings that can be easily understood. By combining OSSCS with conventional orthopedic surgery, it is possible to deal with a wide range of problems in motor activities and activities of daily living, with encouraging results while providing a new path for functional improvement and for active life style in most patients with Cerebral Palsy. The most important aspect of this type of surgery is that postoperatively no decrease in motor functions is observed. Another important aspect is that indication for surgery is wide. Hyper tonicity or spasticity in the whole body can be relieved.

Successful results of the surgery depend mainly on correct decision-making and skillful treatment technique of the orthopedic surgeon. In order to get successful results, the surgeon should know which muscle should be released, which conventional orthopedic procedure should be combined etc. prior to the operation. So selection of the muscles for the surgery is very important.

3. Special feature of OSSCS

Muscles of the vertebrate body are divided into two groups: the multiarticular muscle groups or the muscles which pass through more than one joint and the monoarticular muscle groups or the muscles which pass through one joint. In Cerebral Palsy the multiarticular muscles are hyper tonic or spastic and releasing them selectively can control spasticity. The monoarticular muscles are those responsible to keep the body upright (antigravity). During the procedure, these monoarticular muscles are carefully preserved and their functioning facilitated.

As was mentioned earlier, after OSSCS no muscle weakness is observed as it carefully preserves the monoarticular muscles that act as antigravity muscles. So OSSCS is quite a reliable and promising procedure for patients. Parents, Physiotherapists and Occupational therapists and even special educators who have to deal with the patients in post-operative phases, generally find considerable advantages in this procedure. All the patients with Cerebral Palsy can be treated with successful results while enriching their quality of life, if they have suffered from some kind of spasticity or hypertoncity.

Normally, in OSSCS, multiple surgeries are done, thus **obviating repeated hospitalization** and the consequent trauma, immobilization and all other resultant inconvenience.

4. OSSCS in KOCHI

It was in August 2004, that a well-known Pediatrician of Kochi, Dr. Abraham K. Paul introduced Dr. Deepak Sharan, Medical Director, RECOUP, Neuro-Musculoskeletal Rehabilitation Centre, Bangalore, (Formerly Head, Dept. of Paediatric Orthopaedics, Bangalore Children's Hospital) to Adarsh. He has been practising special corrective surgeries (OSSCS) in children affected by Cerebral palsy for a few years. After examining about 25 children of Adarsh, he selected a few children who, he felt, were likely to become independent after surgery. A presentation was arranged through the Cochin chapter of IMA on "Surgical concepts in the management of Cerebral Palsy". Many medical professionals from the disciplines of orthopedics, Pediatrics, Physiotherapy etc attended the lecture. After several discussions with Dr. Deepak Sharan and the Management of a good hospital with facilities for orthopedic surgery, it was possible to provide surgical help to 5 children of Adarsh in October 2004. It has been the experience that about 20-25 % children with CP can benefit considerably by surgery. A total of 33 children were operated on, between October '04 and June '06 at Kochi.

Adarsh Trust, engaged in the task of rehabilitation of children with challenges, realized that it would not be fair to confine the benefits of OSSCS to only children of Adarsh as the malaise is very wide spread. So our Community Based Rehabilitation team set about looking for children with CP and who could benefit by OSSCS. Dr. Deepak Sharan agreed to come to Kochi once every two months. From October 2004 he visited Kochi 8 times, examined 127 children and performed 33 surgeries. Out of these, over 20 were not children of Adarsh but from the community around, mostly from Ernakulam Dt.

5. OSSCS in Thiruvananthapuram and in North Kerala.

In between, a request was received from Kudumbashree, a wing of the Kerala Govt charged with the mission of Poverty eradication, to bring the doctor to Trivandrum. With their help it was possible to tie up arrangements with a good hospital at Trivandrum. There also he made 3 visits, examined around 30 children and performed surgery on 13 children.

To benefit children all over the state, the intention is to initiate OSSCS in the Northern part of Kerala too. After considerable discussion and probing, Kannur has been selected as the base for North Kerala. Perhaps, the first set of surgeries might be arranged there in July-August.

6. How do children become available for OSSCS?

Some of the sources of getting children for surgery are:

1. Other special schools who are dealing children affected with Cerebral palsy
2. Through Pediatricians and Orthopedicians from their clinics.
3. By word of mouth from parents of children who had undergone surgery earlier
4. Through health survey/medical camps, being conducted at villages, hospitals specifically for identifying children with disability
5. Through Physiotherapists who come across such children in the course of their normal work
6. Publicity through media.

7. Physiotherapy in the post surgery stage.

Normally, a child, after surgery remains in plaster for 6 weeks. Thereafter physiotherapy has to start and continue for 6 months to 1 year and even beyond. To ensure that this is done, Adarsh suggests for surgery only those children for whom physiotherapy is possible. In Adarsh, an additional physiotherapist has been appointed to take care of such children, and in this unit, even those who are not students of Adarsh get physiotherapy done. In Kerala, with availability of good hospitals, reasonably well equipped, facilities for physiotherapy are available even in smaller towns and nearby areas.

8. Financial aspects.

It has been the experience of Adarsh that many of the children who could benefit from this surgery cannot afford even the subsidized rates, as, for each surgery the cost works out to about Rs. 25,000/- . So far, it was managed by subsidy from Adarsh, by the concerned hospitals where the surgery is done, and in some case by finding sponsors who bear the cost of the surgery fully or partially. As a help to children from the economically backward sections of society it would be in the fitness of things if the Govt could subsidise such surgeries. Even today, some state Governments have provision for partial subsidy for surgery in general but the sums earmarked are too meager and the procedure for availing them too dilatory and consequently the intended benefit does not reach the deserving children. Dr. Sharan is prepared to visit Kerala every month and the plan is to have him to visit the three places in rotation. During a stay of 2 days, it is possible to operate on 5 children and so it should be possible to not less have 50 surgeries performed in a year.