MANAGEMENT OF SHOULDER INTERNAL ROTATION LIMITATION IN OBSTETRICAL Palsy
Atakan Aydin 1, Safiye Özkan 1, Zeynep Hoşbay 2

1 Istanbul Medical Faculty, 2 Bezmialem Vakif University, Istanbul, Turkey

Objective: Muscle imbalance in a growing child can lead to bone and joint deformities. Obstetric palsy patients with incomplete recovery have glenohumeral joint problems because of imbalance between shoulder adductor and internal rotator (IR) muscles & abductor external rotator (ER) muscles. Although shoulder internal rotation contracture preventing shoulder abduction and external rotation in the most common problem in obstetric palsy patients with partial recovery; shoulder internal rotation limitation or external rotational contracture is a worse condition preventing hand to belly and back functions hence limiting daily activities. An obstetric palsy child could have both shoulder external and internal rotation limitations and contractures at the same time. It is hard to explain this condition with muscles imbalance which is adductor and internal rotatory muscles are often out of balance with the abductor and external rotator muscle forces. May be, at incomplete recovery with C5,6,7 involvement, in every muscle unit, stem cells are differentiating to sarcomers which are short and less functioning causing contractures.

Since to improve shoulder abduction and ER, tendon transfers are commonly used, postoperative transient loss in internal rotation is expected. But some patients could not get preoperative IR functions, long after the operations. Also there are some nonoperated patients whose main problem is internal rotation limitations. We operated on these two group of patients to achieve better internal rotation function.

Method: Fourteen patients had operation to improve shoulder ER and Abduction 3 years ago. Although their Abd and ER degrees improved dramatically; two years after the operation they had internal rotation limitation despite vigorous physiotherapy. 15 patients did not have neither nerve nor palliative any operation before and had IR limitations preoperatively. During operation, posterior incision above spine of the scapula was performed, supraspinatus, infraspinatus and teres minor muscles, and acromion bone were encountered. The intraoperative observation was not only heavily scarred muscle fascias which needed relaxation but also shortened external rotator muscles which needed release and lateralization with V-Y fashion so that passive shoulder internal rotation movements were possible. We did not cast or use orthosis for the patients postoperatively. At 3rd day postoperative rehabilitation program, active range of motion exercises were initiated. All cases were evaluated by using range of motion measurement and Mallet scale.

Results: Average age of the children was 6.3 years and The average followup period was 21 months. The preoperative values in terms of IR were 2° and postoperatively 20°. Degree of abduction was mean 136 before the surgery. After surgery, it decreased to 105° but with therapy it caught up preoperative values. Degree of external rotation value was mean 85° preoperatively. After the treatment, the external rotation value was measured 66.2°. The mean Mallet score improved from 18 preoperatively to 20 postoperatively.

Conclusion: Although shoulder abduction, ER problems are far more common in obstetrical palsy patients, there a group of patients which had internal rotation limitations either occurred spontaneously or surgically. Facing with the reality we operated on these patients to achieve better hand to midline and back functions.