Conclusion. – Cette étude randomisée et contrôlée en simple insu offre les premières preuves d’efficacité de la TAR chez l’enfant PC. D’autres études devront investiguer son intérêt à long terme.

Référence
http://dx.doi.org/10.1016/j.rehab.2013.07.748

Oral communications

English version

CO33-001-e
Multidisciplinary management in children with obstetric brachial plexus injury (OBPI)
N. Quintero Prigent a,*, C. Romana a
a “Service de rééducation orthopédique pôle Enfant, Hôpitaux de Saint Maurice, 14, rue du Val d’Osne, 94410 Saint Maurice, France
b Hôpital Armand-Trousseau, France
*Corresponding author.
E-mail address: nathyquintero@gmail.com

Keywords: Obstetric brachial plexus injury; Sequelae; Treatments

Despite advances in obstetrics, the incidence of obstetric brachial plexus injury (OBPI) does not appear to have decreased significantly (3-4 per 1000 new births).

During the first weeks of life, classic care of children with brachial plexus relies on preventing muscle contractures and joint deformities. Once about three months old, depending on the recovery of their elbow flexion, children will benefit from microsurgery and then, continue rehabilitation work. Depending on the plexus injury, sequelae may appear. Most common are contracture, resulting from the reorganization of nerve fibers and of muscle hypertonia, for which we detail our experience with botulinum toxin. Common examples of muscle deficits are lack of external rotation of the shoulder, and lack of wrist extension and flexion of the elbow because of a triiceps deficit. We also highlight current treatments of joint sequelae, such as anklyosis of the elbow or subluxation of the humeral head.

Motor impairment and loss of functional movements are common consequences of OBPI that compromise the quality of life of our patients. The improvement of the efficiency of treatment of our patients can only be reached through the harmonization of our practices.

Further Reading
http://dx.doi.org/10.1016/j.rehab.2013.07.749

CO33-003-e
Three dimensional gleno-humeral deformities in obstetric brachial plexus palsy
S. Brochard a,*, B. Borotikar b,1, M. Alkandari a,*, J. Mozingo c, K. Alter c, F. Sheehan b,1 a CHRU de Brest, service de rééducation fonctionnelle, 2, avenue Foch, 29200 Brest, France
b Functional and Applied Biomechanics section, département de “Rehabilitation Medicine”, NIH, Bethesda, Maryland, USA
b1 LaTIM, Inserm U1101, Brest, France
*Corresponding author.
E-mail address: sylvain.brochard@chu-brest.fr

Keywords: Obstetric brachial plexus palsy; Shoulder; Strength; Muscle volume; Imbalance

Introduction. – In children with obstetrical brachial plexus palsy (OBPP), prevention and treatment of the glenohumeral deformities caused by a strength imbalance is a main therapeutic goal. However, the most affected muscles and imbalance are scarcely identified. The objective of this work was to determine in 3D the muscles involved in the strength loss and to investigate the relationship between muscle volume and maximal isometric strength produced by the shoulder.

Methodology. – Twelve children with unilateral OBPP were included. A MRI of both shoulders was carried out, the healthy shoulder serving as a control. Segmentation and 3D reconstruction of the shoulder muscles were made, enabling calculation of the muscle volumes. Maximal isometric strength was measured using a hand-held dynamometer in flexion/extension, abduction/adduction, internal and external rotations.

Results. – The total muscle volume was significantly decreased in the injured side (65.4% on average compared to the healthy side). Most atrophic muscles were: teres major (43.2%), subscapularis (52.2%), supraspinatus (53%), infraspinatus (62.1%), deltoid (62.3%) and pectoral major (84.3%). The distribution of muscle volumes was different between the two sides with significant differences for muscles pectoralis major (injured side 31.9% of the total volume vs 23.8%), teres major (9.6% vs 13.9%), subscapularis (12.3% vs 14.5%) and supraspinatus (3.8 vs 4.5%). A linear relationship existed between muscle volumes and maximal isometric strength in injured and healthy sides (r = 0.91 and 0.95). Maximal isometric strength were also significantly decreased (0.001 < p < 0.01).

Discussion. – For the first time, these original data characterize in 3D the atrophy of the muscles implicated in OBPP. They show that muscular atrophy is highly correlated with strength and that it exists a morphological and functional imbalance around the gleno-humeral joint. Further studies may be conducted to study the relationship between muscular parameters and gleno-humeral deformity, which will help with muscle selection during focal treatments like botulinum toxin injections or rebalancing surgeries.
http://dx.doi.org/10.1016/j.rehab.2013.07.750