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Neuro-orthopedic deformities management: A multidisciplinary approach

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Introduction Dystonic and dyskinetic syndromes produce muscular and dystonic movements and improve their comfort. It consists of neuro-orthopedic deformities management in patients with dystonia and dyskinesia may allow a decrease of dyskinetic movements and improve their comfort. It consists of multidisciplinary medicosurgical approach with tenotomies in association with oral or intrathecal baclofen, botulinum toxin injection (left semimembranosus, right shoulder retractor muscles), phenol neurolysis (bilateral ansa pectoralis, left musculocutaneous nerve), physiotherapy and occupational therapy.

The pain relief allowed a progressive morphinic doses decrease. Both armchair and bed positioning have been improved. Dyskinetic movements disappeared and verbal communication became easier.

Discussion Neuro-orthopedic deformities management in patients with dystonia and dyskinesia may allow a decrease of dyskinetic movements and improve their comfort. It consists of multidisciplinary medicosurgical approach with tenotomies in association with oral or intrathecal baclofen, botulinum toxin injection (left semimembranosus, right shoulder retractor muscles), phenol neurolysis (bilateral ansa pectoralis, left musculocutaneous nerve), physiotherapy and occupational therapy.

Keywords Neuro-orthopedy; Dystonic and dyskinetic syndrome; Tenotomy

Disclosure of interest The authors have not supplied their declaration of conflict of interest.

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Objective Surgical selective hyponeurotisation (SSH) is indicated in localized and excessive limbs spasticity. This study aims to evaluate the functional outcome of SSH on lower limbs.

Methods Between 2011 and 2014, 26 SSH were performed in patients with localized excessive spasticity on lower limbs. Patients were selected by a careful multidisciplinary clinical evaluation including a local nerve block with an anesthetic agent. Three steps of assessment have been established: spasticity, function and pain. This evaluation was done preoperatively and postoperatively on the first day and on the third postoperative month.

Results The average age of patients was 38.7 ± 16.5 years. The sex-ratio was 2.2. The main causes of spasticity were stroke, cerebral palsy and traumatic brain injury. We noted a statistically significant decrease in spasticity assessed by the Gracies Clinical Assessment [1]. The improvement was observed for all parameters, specifically for the active mobility involving antagonists (XVA) which contributed to statistically significant improve of the walking function at lower limbs. The pain also decreased in all patients.

Reference
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Contribution of surgical selective hyponeurotisation in the treatment of lower limbs spasticity

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Discussion Surgical selective hyponeurotisation followed by a good rehabilitation is an effective treatment for patients with excessive localized spasticity on lower limbs. It allows a decrease of spasticity and pain, and a functional improvement. This technique followed by a good rehabilitation could be a good alternative to Botulinum Toxin offering effective results with an acceptable durability and an affordable cost.

Keywords Neurectomy; Muscle Spasticity; Rehabilitation; Lower extremity

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Fibularis lungus, historia brevis

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Fibularis lungus (FL) action and participation in gait disorders is often underestimated, although first description of the impact on gait of a FL “spasm” dates from 1872 [1].

Case history Thirty years aged men, with multiple sclerosis spastic tetraparesis, cerebellar hypotonia and ataxia. Functional exam: completely independent in everyday life activities, with difficulties to put on shoes, needing one crutch outside. Physical exam: paresthesia, thermoalgesic and propioceptive hypoesthesia in both lower legs (LL), proximal weakness prevailing on the left, dystonia of extensor hallucis longus (Hallucis erectus) and clonus of soleus and gastrocnemius of both legs.

Gait analysis FL is responsible for a left-hand side pattern prevailing on the left-hand side, associating “footdrop” and sole’s eversion during swinging phase, valgus-valgus instability of the heel during stance and heel medial-lateral oscillations when standing tiptoe; [pre-injection video].

Treatment’s history First, all three calf muscles of both legs have been injected (total of 300 UI Botox) but patient developed a botulism-like syndrome with; he had no profit of second injection with 25 units in both gastrocnemius and TP of each leg, rather it caused drastic weakening of propulsion. Treatment aims: improve control of inversion-eversion couple during terminal stance, without weakening propulsion strength or heel’s medio-lateral stability during tiptoe stance.

Treatment Injection of only left leg trigger muscles (FL and it’s antagonists: TP, Extensor Hallucis Longus) with 50 UI each (total = 150)

Post injection exam bilateral decrease of medial-lateral heel & leg-body oscillationsduring tiptoe stance, better leg shortenig during swing & no personal sensation of propulsion.

Conclusion muscles actions must always be considered taking into account both proximal and distal fixed points. In case of proximal fixed point, LPL plantar flexes foot and reverse sole; when fixed point is distal, FL steadies leg (and body) upon the foot in frontal plane and draws leg’s lateral side outwards.

Disclosure of interest The authors have not supplied their declaration of conflict of interest.

Reference


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P051-e

Evaluation of the results of botulinum toxin typeA for the treatment of the spastic equinus feet in cerebral palsy among children over two years of age

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Background Botulinum toxin type A (BTA) belongs to a therapeutic arsenal of the spastic equinus feet (SEF) in cerebral palsy (CP) and in association with splints posture, walking orthoses and kinesitherapy.

Aim To evaluate the results of BTA on SEF in CP using modified Ashworth scale (MAS) and the Silfverskiold test (ST) among children over 2 years old.

Patients and methods It’s a retrospective, descriptive study, performed from January 2013 to January 2014 at the PMR department of Douera’s hospital university.

We’ve included children with SEF who’ve never been treated before.

We’ve excluded children who’ve been injected with BTA in muscle groups other than the Triceps surae.

The protocol consisted of BTA injections, followed by the rehabilitation program a month later.

Assessments were done using MAS and ST before and after the total injections.

Results Twenty-one children were examined (13 girls and 8 boys; mean ages of 7.5 ± 3.58 years).

SEF was static in 19% and dynamic in 38.1% of cases. It was static and dynamic in the remaining 42.9%.

The soleus was injected in 9.5% of cases, gastrocnemius in 19% of cases, and triceps surae in 71.4%. The average number of injections was 2.90 ± 1.18.

Improvement was observed in both MAS and ST comparing before and after treatments by BTA. These results are statistically significant with P value of < 0.0001 (mean of Ashworth scale2.76 ± 0.54 vs 1.33 ± 0.57).

Discussion-conclusion There was a decrease in triceps surae spasticity and stabilization or improvement of tarsal ankle angle. These measures only evaluate one aspect of SEF.

Keywords Spastic equinus feet; Botulinum toxin type A; Cerebral palsy; Modified Ashworth scale; Silfverskold test

Disclosure of interest The authors have not supplied their declaration of conflict of interest.

Further readings


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